EBENEZER PLAZA II
KINGS COUNTY
BROOKLYN, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: C224241

Prepared for:
Ebenezer Plaza Owner Phase II LLC
456 E. 173rd Street
Bronx, New York 10566

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233

Prepared by:
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Brooklyn, New York 11201

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

NOVEMBER 2024

CERTIFICATION STATEMENT

I Daniel P. Noll 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) and Green Remediation (DER-31).

081996 NYS PROFESSIONAL ENGINEER #

11/22/24 DATE

SIGNATURE

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SITE MANAGEMENT PLAN

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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
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EWP	Excavation Work Plan
GHG	Green House Gas
GWE&T	Groundwater Extraction and Treatment
HASP	Health and Safety Plan
IC	Institutional Control
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Remedial Party
RSO	Remedial System Optimization
SAC	State Assistance Contract
SCG	Standards, Criteria and Guidelines

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

ES EXECUTIVE SUMMARY

The 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: BCP Site No. C224241
Ebenezer Plaza II
589 Christopher Ave, Brooklyn, New York

Institutional Controls:	1. The property may be used for restricted residential and/or commercial use;
	2. An environmental easement will be imposed for the controlled property which will: • Require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3); • Allow the use and development of the controlled property for restricted residential use or commercial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws; • Restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and • Require compliance with the Department approved Site Management Plan.
	3. All ECs must be inspected at a frequency and in a manner defined in the SMP.
Engineering Controls:	N/A

Inspections:	Frequency
1. Site-Wide Inspection	Annually

Site Identification: BCP Site No. C224241
Ebenezer Plaza II
589 Christopher Ave, Brooklyn, New York

Monitoring:	
1. Groundwater Monitoring Wells (4 Monitoring Wells: MW-18RS, MW-18RD, MW-28S, & MW-28D)	Quarterly*
Maintenance:	
N/A	N/A
Reporting:	
1. Groundwater Monitoring Data	Quarterly
2. Periodic Review Report	Annually

* *Quarterly sampling will continue until approval by NYSDEC.*

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 Ebenezer Plaza 2 Property located in the Borough of Brooklyn, 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. C224241 which is administered by New York State Department of Environmental Conservation (NYSDEC).

Ebenezer Plaza Owner Phase II LLC entered into a Brownfield Cleanup Agreement (BCA) on January 10, 2017 with the NYSDEC to remediate the site. 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.**

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 Kings County Clerk, requires compliance with this SMP and all ECs and ICs placed on the site.

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

It is important to note that:

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

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA Index #C224241-10-16; Site #C224241) 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 LaBella Associates, DPC (LaBella), on behalf of Ebenezer Plaza Owner, LLC, 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

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

1.3 Notifications

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

- 60-day advance notice of any proposed changes in site use that are required under the terms of the BCA, 6NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

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

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

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

Table A on the following page 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 A: Notifications*

Name	Contact Information	Required Notification**
Aaron Fischer (NYSDEC Project Manager)	Phone: 518-402-9805 Email: Aaron.fischer@dec.ny.gov	All Notifications
Heidi Dudek (NYSDEC Section Chief)	Phone: 518-402-9813 Email: Heidi.dudek@dec.ny.gov	All Notifications
Scott Deyette (NYSDEC Director, Remedial Bureau B)	Phone: 518-402-9794 Email: Scott.deyette@dec.ny.gov	
Aaron Fischer (NYSDEC Site Control)	Phone: 518-402-9805 Email: Aaron.fischer@dec.ny.gov	Notifications 1 and 8
Michele Dolan (NYSDOH Project Manager)	Phone: 518-402-7860 Email: Michele.dolan@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 Borough of Brooklyn, Kings County, New York and is identified as Block 3861, Lot 1 on the Kings County Tax Map (see **Figure 2**). The site is an approximately 0.83-acre area and is bounded by New Lots Avenue to the north, Hegeman Avenue to the south, Sackman Street to the east, and Christopher Avenue to the west (see **Figure 1** – Site Layout Map). The boundaries of the site are more fully described in Appendix A –Environmental Easement. The owner and operator of the site parcel(s) at the time of issuance of this SMP is/are:

HP Ebenezer 2 Housing Development Fund Company, Inc.
456 E. 173rd Street
Bronx, NY 10566

2.2 Physical Setting

2.2.1 Land Use

The Site consists of a partially constructed building and active construction. The Site is zoned residential and is currently undergoing construction of the new multi-story affordable housing complex with street-level retail spaces. There are no current site occupants besides the active construction and the owner and operator of the Site is HP Ebenezer 2 Housing Development Fund Company, Inc. Site occupants in the future will include tenants of the under construction affordable housing complex.

The properties adjoining the Site and in the neighborhood surrounding the Site primarily include commercial and residential properties. The properties immediately south of the Site include commercial properties; the properties immediately north of the Site include commercial and residential properties; the properties immediately east of the Site include residential properties; and the properties to the west of the Site include commercial properties.

2.2.2 Geology

Information on the geologic and hydrogeologic conditions presented herein are based upon investigations of the Site prior to remedial work. Most subsurface investigation work has been limited to approximately 25 ft bgs, and investigations have been limited to the overburden soil formation beneath the Site.

According to geologic characterization of the soils collected from 2011 through 2017, prior to remediation, soil on Site consists of a layer of typical urban fill (a mixture of brick, block, building stone, asphalt, coal, coal ash, and metal fragments) in a sand and gravel matrix. The urban fill is present across the entire Site in a layer of variable thickness ranging from 3 to 12 ft bgs. The soil beneath the fill consists of a massive fluvial deposit

estimated to be greater than 200 feet thick consisting of medium sand, with lesser but varying amounts of silt, fine and coarse sands.

Borings on the Site indicate that bedrock is at least 30 feet bgs. The bedrock is mapped on the Geologic Map of New York (Lower Hudson Sheet, 1970) as Upper Cretaceous-aged rocks of the Monmouth Group, Matawan Group and Magothy Formations. The Surficial Geologic Map of New York (Lower Hudson Sheet, 1989) identifies the native soils as glacially derived outwash sand and gravel. The Geologic Map of New York (Lower Hudson Sheet, 1970), indicates that bedrock is greater than 200 feet below graded and likely to be significantly deeper (up to 2,000 feet below grade). Based on property survey maps, the site is at an elevation of 19.87 to 18.01 feet above mean sea level (AMSL) and slightly sloped from the northwest to southeast corners.

Prior to remediation, site soils consisted of variable thickness of miscellaneous urban fill overlying a relatively well sorted fluvial sand deposit. The urban fill consisted of a black and/or blackish orange silty-sand with variable amounts of broken brick, concrete, and asphalt. The fill ranged from less than 1 foot to an observed maximum of six feet in thickness near the center of the site. The fill overlaid native sands. The native sand is characterized as a homogenous mostly medium-sized glacial outwash, with lesser but varying amounts of fine and coarse-sized sand. Borings completed to 25 feet at the site did not encounter bedrock. It should be noted that the fill material was removed as part of the remedial work and thus only clean imported backfill materials and underlying apparent native soils are on-site.

The locations of stratigraphic cross-sections of two intersecting diagonal transects are included in **Figure 3.** A geologic cross section is shown in **Figures 3A and 3B**. Site specific boring logs are provided in **Appendix C.**

2.3.3 Hydrogeology

Groundwater is at approximately 15 feet below grade (4-6 feet AMSL) across the site with minimal seasonal variation. The hydraulic conductivity of the native soils (mf sand) has not been determined but is estimated at 10^{-3} to 10^{-4} cm/sec based on the soil type.

Based on water level data from on-site wells collected during the site investigation(s), the hydraulic gradient is approximately 0.001 ft/ft. Using the hydraulic gradient and the estimated range of hydraulic conductivity, the groundwater is expected to flow across New Lots Avenue toward Hegeman Avenue at an estimated rate of 3 to 30 feet per year.

The Site and surrounding area is serviced with a municipal water supply. The use of groundwater as a potable water supply is prohibited by NYC administrative code.

Groundwater flow on the Site is to the southeast, based on groundwater elevations from previous investigations and monitoring. There are no on-Site surface water bodies or in the immediate area The surrounding waterbody in closest proximity of the Site is the

Fresh Creek Basin, a tidal tributary to Jamaica Bay, located approximately 4,100 feet southeast of the Site.

A groundwater contour map is shown in **Figure 4.** Groundwater elevation data is provided in **Table 1**. The water table varies seasonally from approximately 12 to 16 feet below grade. Groundwater monitoring well construction logs are provided in **Appendix D.**

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 Site has been developed since circa 1930. Past commercial site uses include auto-wrecking, repair, and maintenance operations. The historic source of contaminants is past automotive-related activities, urban fill, and underground storage tanks.

2009 Limited Phase II Environmental Site Assessment

A Limited Phase II Environmental Site Assessment (ESA) was performed for the entire EP-2 and EP-1 sites by The Chazen Companies (Chazen) in 2009 for pre-purchase due diligence on behalf of the Church of God of East Flatbush, the site owner at the time, during which soil samples were collected from nine borings at the EP-2 site including SB-12, SB-13, SB-14, SB-16, SB-17, SB-18, SB-19, SB-20, and SB-22. The Phase II identified VOC groundwater impacts in the area west of Sackman Street beneath the 90 New Lots Avenue building and metal impacts in the shallow soil within the at-grade automotive yard area. Total VOC groundwater concentrations for all Phase II ESA sampling points are shown in Figure 3 of the 2009 Phase II ESA.

2011-2012 Remedial Investigation

A Remedial Investigation was performed in November 2011 by Chazen for the entire EP-2 and EP-1 sites owned by The Church of God of East Flatbush to further characterize and delineate the extent of known impacts to soil and groundwater related to NYSDEC Spill No. 09-06674. The Remedial Investigation Report (RIR) was submitted to NYSDEC in April 2012. The RI included seven additional soil borings, monitoring well installations, pilot well installations, and the collection of soil and groundwater samples for laboratory analysis at the EP-2 site A sampling location map is shown on Figure 2 of the 2012 RIR. The field observations and analytical results indicated the following Site conditions:

<u>Soil:</u>

- No evidence of VOC impacts was observed in shallow soils above the water table. Lead was reported in two locations (SS-2 and SS-4) in near surface soils in the auto-dismantling area located in the southwestern portion of the site (Table 2, Figure 2) at concentrations greater than the CUSCO of 1,000 mg/kg.

- Elevated barium concentrations exceeding the CUSCO of 400 mg/kg were reported in three near-surface soil samples in the auto-dismantling area.
- Elevated concentrations of lead and barium are commonly associated with urban soils where demolition debris and/or fill materials of unknown origin have been used. Fill materials and demolition debris was reported in many of the soil borings installed during the investigation.

Groundwater:

- Groundwater sample results confirmed the presence of two distinct and separate impacted areas with total VOC concentrations exceeding 100 ug/L located along the northern property boundary. The soil and groundwater data suggest a single point of release beneath the building at 90 New Lots Avenue.
- The associated area of groundwater impacts extends downgradient approximately 100 feet from the source. Groundwater impacts in this area are naturally attenuating within the boundaries of the site.
- Tetrachloroethylene (PCE) was detected in monitoring wells MW-17 and MW-21 at 25 ug/L and 6.8 ug/L, respectively. The distribution of PCE and relatively low reported concentrations indicate that there is no evidence of a significant release or an on-site source for PCE.
- The shape of the groundwater impact area is consistent with radial diffusion from a point source under low advective transport.

Soil analytical data is included in Table 2 of the 2012 RIR. Groundwater analytical data is included in Table 3 of the 2012 RIR. A groundwater flow map indicating soil and water sampling points and groundwater VOC concentration contour lines depicting the approximate plume location is included as Figure 3 of the 2012 RIR.

Following the subsurface investigation, a small-scale pilot test was conducted using In-Situ Chemical Oxidation (ISCO) via iron-activated hydrogen peroxide to remediate hydrocarbon-impacted groundwater and saturated soil in the vicinity of former petroleum USTs in the northern portion of the Site.

Two injection wells (IW-1 and IW-2) were installed in the vicinity of the petroleum hot spot to conduct a remedial pilot test using ISCO techniques. Injection well construction details are documented in the 2012 RIR. The post-injection sampling results confirmed a significant reduction in the concentration of total VOCs in MW-18 (from 8,827 ug/L to 6,453 ug/L, a 27% reduction) and MW- 20 (from 3,462 ug/L to 1,882 ug/L, a 46% reduction) compared to pre-injection concentrations. The reduction in concentration of total VOC levels strongly indicate the effectiveness of the ISCO process for the primary contaminants of concern.

The results of the pilot test suggest that ISCO is a practical and effective remedial technology that could be used for future in-situ site remediation work. In addition, in-situ remedial action is consistent with Green Remediation guidance. The location of Injection

wells and groundwater sampling results from before and after the November 2011 ISCO injections are presented on Figure 3 of the 2018 SRI report.

2017 Remedial Investigation

A Remedial Investigation Report (RIR) was prepared by Chazen in 2017 for EP-2 owned by Ebenezer Plaza Owner, LLC and is a compilation of previous site investigations that were completed prior to entry of the site into the BCP. The Primary site contaminants of concern identified in the 2017 RI are VOCs in the soil and groundwater related to the release of petroleum from underground storage tanks (USTs) located beneath 90 New Lots Avenue, trace to minor concentrations of CVOCs from an unidentified source in groundwater within the western site area (wells MW-17 and MW-21 in the northwest, and SB-16 in the southwest corner of the site contained PCE at levels above the AWQS), and elevated concentrations of priority pollutant metals in shallow fil in the southwest quadrant of the site presumed to be from decaying vehicles and vehicle parts.

Primary site contaminants of concern are VOCs in groundwater and soil related to the underground release of petroleum beneath 90 New Lots Avenue, and elevated metals and SVOCs in the shallow fill, and trace to low levels of CVOCs were found in groundwater within the western half of the site. The 2017 RI divides the Site into discrete Areas of Concern (AOCs) as follows:

Northern Area:

The northern site area contains elevated concentrations of VOCs and/or lead in soil and groundwater. VOC and SVOC soil concentrations in this are generally meet the RRUSCOs, with few detected VOCs reported above this threshold in a limited area beneath 90 New Lots Avenue.

Southern Area:

The southern site area contains metals and SVOC impacts in the shallow soils located within the open-air automotive dismantling yard and access road. The RI results indicate the presence of select elevated metals including arsenic, barium, cadmium, chromium and lead exceeding UUSCOs in all six samples. Barium, cadmium, and/or lead exceeded the RRUSCO in five of the six samples. The presence of two petroleum-range SVOCs were reported in one sample at concentrations exceeding the UUSCOs. Benzo(a)anthracene also exceeded the RRUSCO in one sample. The SVOCs in shallow soils, likely associated with observed fill soils and/or historic automotive operations within the area.

Western Area:

The western site area contains CVOCs in groundwater. VOCs, SVOCs, and lead were identified as site contaminants in groundwater.

- Petroleum-range VOCs exceeding standards were found in groundwater within a limited plume area beneath the northern portion of the Site in the vicinity of 90 New Lots Avenue. As of 2011, total remaining VOC concentrations ranged from 20 ug/L to 6,453 u/L within the estimated plume area.

- Tetrachloroethene (PCE) was detected in the western portion of the Site at relatively low concentrations exceeding the ambient water quality standard (AWQS). The highest reported PCE detection was 25 ug/L at MW-17 in November 2011. The distribution and relatively low concentrations do not indicate evidence of a significant release or onsite source of PCE.
- Methylene chloride was detected at concentrations ranging from 1.6 ug/L to 110 ug/L at the former wells MW-14, MW-16, MW-17, MW-19, MW-20, and MW-21. The highest concentrations were reported in the source area well (Former well MW-20). The analytical reports indicate that methylene chloride was also detected in the laboratory blanks suggesting that it is a laboratory artifact. No source was identified in historical records or associated soil samples.
- With the exception of naphthalene, no SVOCs were detected in the on-site groundwater at concentrations above the AWQS.
- Lead was detected in one out of nine groundwater samples collected by Chazen in 2009. The concentration (32 ug/L) exceeded the AWQS (25 ug/L) in the sample collected from SB-15, located in the northern portion of the site within the mapped VOC plume area.

Entire Site Footprint (Urban Fill):

There was a one- to six-foot-thick layer of urban fill across the footprint of the entire site, associated with the elevated metal and SVOC concentrations. Prior to remediation, elevated metals and SVOCs were detected in near surface and shallow soils at concentrations that exceed RRSCOs for the Site across the footprint of the Site.

2017 Supplemental Remedial Investigation

Supplemental remedial investigation (SRI) sampling was performed by Chazen in May 2017 to address identified data gaps in site characterization at EP-2. The SRI included characterization of waste soil in planned excavation areas to evaluate disposal options, providing new sampling data to reflect current site conditions, and analyzing groundwater samples for perfluorinated compounds (PFCs) and 1,4-dioxane.

Six supplemental soil borings were advanced for waste characterization purposes and to collect additional representative distribution of data including Target Compound List (TCL) VOCs, TCL SVOCs, and Target Analyte List (TAL) metals. The 2017 soil sampling confirmed the presence of SVOCs and select metals, primarily in the fill material and with concentrations decreasing with depth. Reported selenium concentrations are consistent across the Site and consistent with results for the eastern adjoining Ebenezer Plaza 1 (NYSDEC BCP Site C224240), indicating selenium is a background metal and not a Site contaminant.

Three groundwater samples were collected from the existing wells MW-17 (cross-gradient), MW-18 (historic contaminant source area), and MW-19 (downgradient). The 2017 sampling confirmed exceedances of AWQS for VOCs in wells MW-18 and MW-19, and naphthalene in MW-18. The reported VOCs were petroleum range compounds. Source area well MW-18 reported total VOCs of 3,018 ppb, and the downgradient well MW-19

reported 49.6 ppb total VOCs. Limited VOC impacts exceeding AWQS are present in saturated soils near the location of historical USTs. The data indicates that the pocket is relatively small, and downgradient groundwater concentrations of contaminants have decreased since 2009. The groundwater exceedances of the AWQS are shown on Figure 5A of the 2017 SRI.

The SRI confirmed the presence of a heterogeneous layer of urban fill across the entire Subject Property impacted with semi-volatile organic compounds and heavy metals. Historical releases of gasoline constituents (BTEX), chlorinated solvents (CVOCs), and polyfluorinated compounds (PFCs) from the use of historical underground storage tanks and at grade from surface spills, and likely off- site sources.

2018 Supplemental Remedial Investigation Report

A second Supplemental Remedial Investigation (SRI) was performed in 2018 to address data gaps regarding the depth of urban fill throughout the Site below 5 ft bgs, as well as groundwater and soil vapor. Field investigation included collection of additional soil sampling data to complete the vertical delineation of impacts, delineating the impacts beneath the water table exceeding PGWSCOs in the vicinity of the historic contaminant source area hotspot (SB-43/MW-18), collection of data to assess downgradient water quality and evaluate the potential for off-site migration of site-related impacts, and collection of soil vapor data to assess the potential need for a vapor barrier system or vapor mitigation system in new building construction plans. All pre-existing site groundwater wells did not survive the demolition phase. Groundwater sampling was limited to two newly installed wells (MW-101 and MW-102) near the downgradient property boundary. A Sample Location Map for samples collected is included in Figure 1a of the 2018 SRI. A Sample Location Map for all samples collected on-site since 2009 is included as Figure 1b of the 2018 SRI.

Based on field observations and analytical results, soil impacts from VOCs appear to be limited to an estimated area of 2,500 ft^2 located in the vicinity of SB-110 extending from the water table to approximately 3 feet below the water table. The area confirms to the approximate limits of impacts in the vicinity of the contaminated source area hotspot previously delineated. An estimated 250 to 300 yd^3 of soil in this area has impacts exceeding the PGWSCOs. The approximate limits of this area are included on Figure 2 of the 2018 SRI.

No VOC or SVOCs were reported in the two downgradient monitoring wells located along the southern site boundary exceeding the AWQS. PCE was reported in wells MW-101 and MW-102 at trace concentrations of 1.3 µg/L and 0.84 µg/L, respectively. Significant impacts to groundwater were previously reported in three wells, MW-18, MW-19, and MW-20 with over 5,000 µg/L of total VOCs. These three former wells were located within the defined limits of the soil impacts in the area around SB-110 south of New Lots Ave. No groundwater impacts from this area were detected at the site perimeter in MW-101 or MW-102. Based on the groundwater analytical data, the peroxide injection program performed in 2011 appears to have successfully reduced the impacts to the soil and groundwater. The results from the samples taken from the newly installed groundwater

monitoring wells along the downgradient property boundary confirm an absence of significant impacts to groundwater at the property boundary and thus that any residual site impacts to not represent potential threats to off-site migration.

PCE was identified in all six soil vapor points sampled. Concentrations greater than the action threshold of 100 µg/m^3 were reported in two of the six samples, each reported at 111 µg/m^3 suggesting the possibility that an indoor air quality issue could develop over time if a structure were constructed without vapor mitigation measures. The absence of an identified source for the on-site vapors suggests that any vapor concentrations in future sub-slab soils are not likely to increase over time.

2020 Remedial Action Work Plan

A Remedial Action Work Plan was submitted to NYSDEC by the Chazen Companies in February 2020 and has been approved by NYSDEC. The Decision Document was published by NYSDEC in September 2020. The Site was remediated in accordance with the 2020 RAWP, the Decision Document dated September 2020, and several supplemental NYSDEC-approved work plans. A summary of the remediation is detailed in the 2024 Final Engineering Report (FER).

2022 Remedial Design Modification Memoranda

The following supplemental delineation, characterization, and removal activities were performed in order to facilitate the remedial excavation and supplemental remedial activities. The following activities were performed on-site in 2022 to identify additional actions necessary, including supplemental excavation and ISCO treatment, in order to achieve a Track 2 cleanup. The activities are detailed in the Remedial Design Modification Memorandum – Supplemental Excavation dated August 11, 2022 and the Remedial Design Modification Memorandum – ISCO, Revision 2 dated September 27, 2022.

2020-2022 Groundwater Monitoring

Results from the June 2020 groundwater sampling event for on-site wells indicated the absence of VOCs in groundwater above applicable standards at on-site wells MW-22 and MW-23 and perimeter wells MW-24, MW-25, and MW-26 while MW-27 contained 4,396 ug/L Total VOCs. Groundwater sampling performed on March 24, 2022, indicated the absence of VOCs in groundwater above applicable standards at perimeter monitoring wells MW-24, MW-25, and MW-26. The on-site monitoring wells, as well as MW-24, have been lost or destroyed. The March 2022 groundwater sampling event indicated that the on-site monitoring wells, as well as MW-24 had been lost or destroyed during construction.

2022 C&D Debris Removal, Geophysical Investigation, UST Removal

In March 2022, C&D material was characterized as necessary for facility approval. Following the removal of the approximately top 2 feet of C&D debris, a geophysical investigation performed in March and June 2022 identified the presence of underground storage tanks (USTs) in the vicinity of the two gasoline USTs identified on Sanborn maps in the northeast portion of the Site. There was no evidence of any tanks anywhere else on the site, including to the west, where Sanborn maps had indicated the potential presence of

former USTs. In June 2022, Brookside Environmental (FDNY License No. 81350266) completed the cleaning and removal of four 550 gallon underground gasoline tanks in accordance with the provisions of the New York City Fire Code, Chapter 34, Section FC3404.2.l 3 and FC3404.2.l 4.

2022 Supplemental Soil Delineation Sampling

Supplemental delineation sampling was performed throughout the Site in order to determine the extent of additional soil remediation of soil containing constituents of concern (COCs) above the applicable restricted-residential soil cleanup objectives (RRSCOs), as well as the extent of source material in a petroleum hot spot which must be treated, contained, or removed, as required to achieve a Track 2 cleanup, pursuant to discussions with NYSDEC, and the June 8, 2022, NYSDEC-approved Remedial Action Delineation Work Plan.

Soil samples were collected from remedial delineations sampling locations RD-1 through RD-22 at two-foot intervals, from approximately 7 to 15 ft bgs. Step-out samples were collected for sampling locations at which COCs exceeded RRSCOs to delineate the vertical and horizontal extent of SCO exceedances. The results of the supplemental soil delineation indicate the presence of shallow hot spots as follows:

- Polycyclic aromatic hydrocarbons (PAHs) from 7 to 11 ft bgs at RD-01 and RD-02
- PAHs present from 7-9 ft bgs at RD-16C and RD-16D
- PAHs and metals present from 7-9 ft bgs at RD-10 and from 11-13 ft bgs at RD-10A
- Metals present from 7-11 ft bgs at RD-15 and from 7-9 ft bgs at RD-15C

Supplemental delineation soil sampling was also performed in the vicinity of the former gasoline USTs to characterize the vertical and horizontal extent of the petroleum hot spot in order to support a Track 2 cleanup, pursuant to discussions with NYSDEC and the June 8, 2022, NYSDEC-approved Remedial Action Delineation Work Plan.

Soil samples were collected from tank boring (TB) sampling locations in the vicinity of the former gasoline USTs. Based on the results from TB samples collected at the former petroleum UST hot spot, several vertical intervals of petroleum contaminated material were identified in exceedance of RRSCO and PGWSCOs from 7 to 32 ft bgs.

High Concentration Lead Area Sampling

The RI results indicated that the soil in central portion of the site that was formerly used as an auto salvage yard contained high concentrations of lead (High Concentration Lead Area, or HCLA). The former salvage yard was contained on all sides by an approximately 2 foot thick foundation wall that extended to approximately 5 ft bgs. Additional soil sampling was performed to delineate lead concentrations, including the vertical and horizontal extent of hazardous concentrations of lead, as necessary, for waste characterization purposes in order to obtain disposal facility approval. Discrete soil grab samples were collected from 0 to 2, 2 to 4, and 4 to 6 ft bgs, and deeper as necessary, from 36 sampling locations. Several portions of the HCLA were determined to be characteristic

hazardous and disposed of accordingly, shown on Figure 4 of the Remedial Design Modification Memorandum – ISCO, Revision 2.

Based on the soil sampling performed to date, the proposed remedial design modifications defined the following zones of petroleum-contaminated material.

Zone 1 – 15 to 17 ft bgs,
Zone 2 – 13 to 22 ft bgs,
Zone 3 – 7 to 23 ft bgs,
Zone 4 – 13 to 32 ft bgs.

The zones of petroleum-contaminated material, the PAH and metal hotspots are indicated on Figure 6 of the Remedial Design Modification Memorandum – ISCO, Revision 2. The report indicated that following excavation to 17 ft bgs throughout Zone 1, the saturated petroleum-contaminated soil remaining in Zones 2 through 4 would be treated through ISCO injection program.

The report also indicated that as a proactive measure not required by the NYSDEC Decision Document, a sub-slab depressurization system (SSDS) would be installed by the Volunteer from 15 to 16 ft bgs to mitigate the potential for soil vapor intrusion in the event that the water table drops under future conditions. The SSDS design is further detailed in **Section 3.3.5.**

2023 ISCO Performance Monitoring

In August 2023, ISOTEC performed in-situ chemical oxidation (ISCO) injections of activated sodium persulfate (ASP) at 20 injection wells, pursuant to the Remedial Design Modification Memorandum – ISCO, Revision 2 dated November 2022. The treatment included ISCO to treat residual petroleum hydrocarbons in groundwater and saturated soil that exceeded Protection of Groundwater Standard Soil Cleanup Objectives (PGWSCOs). Eight monitoring wells, MW-26S, MW-26D, MW-27S, MW-27D, MW-18R-S, MW-18R-D, MW-28S, and MW-28D were installed from December 2022 through May 2023 in accordance with the Remedial Design Modification Memorandum. The wells were sampled before and after the August 2023 ISCO injections to monitor the effectiveness of the ISCO injections.

The pre- and post- ISCO injection monitoring data indicates that petroleum hydrocarbon residuals detected on-site groundwater were limited to ethyl benzene, 1,3,5-TMB, 1,2,4-TMB, and PCE at concentrations exceeding the TOGS 1.1.1 standards. After ISCO injections were performed in August 2023, the concentrations of these contaminants decreased below the AWQS in all of the wells, with the exception of the on-site source area wells MW-18R-S and MW-18R-D.

Additional quarterly monitoring is stipulated in the **Section 4** of this SMP to evaluate its long-term effectiveness.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in Decision Document dated September 2020 are as follows:

Groundwater

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

2.5 Remaining Contamination

The following section describes contamination remaining at the Site based on data collected during remedial action. The Site has been remediated to achieve a Track 2

cleanup. Remaining contamination refers to soil impacts above the Unrestricted Use SCOs, Protection of Groundwater SCOs, and Restricted Residential Use SCOs; and groundwater impacts above Part 703 Groundwater Standards or NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS).

2.5.1 Soil

The site has been excavated to a depth of 15 ft bgs with the exception of the petroleum-contaminated hot spot area which has been excavated to a depth of 17 ft bgs, and the courtyard area which was excavated to a depth of 6 to 12 ft bgs.

While several post-excavation confirmation soil samples collected after the remedial excavation was completed [CS-16 (6.5') – Lead; CS-29 (6.5') – Lead; CS-30 (6.5') – Lead; CS-33 (6.5') – Lead, Zinc, and Mercury; CS-40 (7.5') – Lead, Mercury; and CS-49 (6.5') – Nickel] contained COCs in soil at concentrations that exceed unrestricted use SCOs (UUSCOs), the majority of this material with the exception of soil below 6 feet in the courtyard area (CS-29 and CS-49) was removed as part of the subsequent excavation for development purposes which was performed to a depth of approximately 15 ft bgs across most of the Site (a portion of the courtyard area was only excavated to 6-12 ft, with the exception of the hot spot removals).

Similarly, post-excavation confirmation soil samples were collected after the remedial excavation was completed in the vicinity of the former UST and petroleum hydrocarbon hot spot. Sample locations CS-101 (15') – 1,3,5-Trimethylbenzene; CS-102 (15') – 1,3,5-Trimethylbenzene; and CS-103 (15') – 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Ethyl Benzene and Naphthalene contained COCs at concentrations that exceeded Restricted Residential Use SCOs (RRSCOs). This material was removed as part of the excavation of the former UST and petroleum hydrocarbon hot spot to a final depth of 17 ft bgs pursuant to the Remedial Design Modification Memorandum – Supplemental Excavation dated September 27, 2022.

Several samples taken pursuant to the Remedial Design Modification Memorandum – Supplemental Excavation at depths greater than 17 ft bgs contained COCs in soil at concentrations that exceed UUSCOs and RRSCOs including 1,2,4-TMB, 1,3,5-TMB, Benzene, Ethylbenzene, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, Toluene, and Xylenes. The remainder of the petroleum contaminated soil located below 17 ft bgs was subsequently treated with ISCO injections in August 2023. No further confirmation soil samples were taken in this area.

Table 2 and **Figure 5** summarize the results of all soil samples collected that exceed the UUSCOs and the RRUSCOs at the site after completion of remedial action.

2.5.2 Groundwater

Results from the June 2020 groundwater sampling event for on-site wells indicated the

absence of VOCs in groundwater above applicable standards at on-site wells MW-22 and MW-23 and perimeter wells MW-24, MW-25, and MW-26 while MW-27 contained 4,396 ug/L Total VOCs. Groundwater sampling performed on March 24, 2022, indicated the absence of VOCs in groundwater above applicable standards at perimeter monitoring wells MW-24, MW-25, and MW-26.

Following the ISCO injections performed in August 2023, concentrations of petroleum hydrocarbon residuals associated with the on-site petroleum hydrocarbon source decreased below the AWQS in all of the wells, with the exception of the source area wells (MW-17R-S and MW-17R-D).

Remaining contaminants in on-site groundwater include the VOCs 1,2,4,5-Tetramethylbenzene, 1,2,4-TMB, Ethylbenzene, Napthalene, and p/m-xylene as detailed below.

Two (2) groundwater samples contained VOCs at concentrations that exceed NYS Class GA groundwater standards. The most recent sampling event for each well with an exceedance is provided below along with the sample date in parentheses:

- MW-18R-S – 1,2,4-TMB (sample date: 1/25/24)
- MW-18R-D – 1,2,4,5-Tetramethylbenzene, 1,2,4-TMB

There is no indication that any on-site residual source on site is currently contributing or will contribute in the future to off-site migration of the aforementioned contaminants that have been treated by ISCO, summarized in LaBella's 2024 ISCO Performance Monitoring Report. Additional quarterly groundwater monitoring is stipulated in **Section 4.4** to evaluate the effectiveness of the August 2023 ISCO injection program.

Table 3 and **Figure 6** summarize the results of all samples of groundwater that exceed the SCGs after completion of the remedial action. **Figure 7** shows the ISCO injection locations and the monitoring well locations.

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.

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 E) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

A series of ICs is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the site to restricted residential or commercial 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 8**. These ICs are:

- The property may be used for restricted residential or commercial 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 New York City 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 8**, and any potential impacts that are identified must be monitored or mitigated; and

- Vegetable gardens and farming on the site are prohibited;

3.3 Engineering Controls

There are no engineering controls for this Site.

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. Unless waived by the NYSDEC, confirmation samples of applicable environmental media are required before terminating

any remedial actions at the site. Confirmation samples require Category B deliverables and a Data Usability Summary Report (DUSR).

As discussed below, the NYSDEC may approve termination of a groundwater monitoring program. When a remedial party receives this approval, the remedial party will decommission all site-related monitoring, injection and recovery wells as per the NYSDEC CP-43 policy.

The remedial party will also conduct any needed site restoration activities, such as asphalt patching and decommissioning treatment system equipment. In addition, the remedial party will conduct any necessary restoration of vegetation coverage, trees and wetlands, and will comply with NYSDEC and United States Army Corps of Engineers regulations and guidance. Also, the remedial party will ensure that no ongoing erosion is occurring on the site.

While not required as per the Decision Document as an ECs, the following were installed on-Site and are not considered ECs:

3.3.3 Backfill Materials

The Site has attained a Track 2 cleanup and thus the top 15-ft. of soil was remediated to RRSCOs and as such, the Site does not have a formal cover system. However, to manage remaining contamination that is left in-place (refer to Section 2.5), the SMP must be implemented when excavations extend beyond the backfill materials that were placed at the Site. In general, the surface material types are broken down into two distinct areas:

1. Building Areas – The building areas were excavated to 15-ft. BGS and quarry stone was placed prior to construction of the SSDS and building basement slab. Remaining contamination is not accessible since it is located beneath the building slab.
2. Courtyard Area – The courtyard area was excavated between 6 ft. and 15 ft. depending on location. This area was backfilled to grade such that the top 15-ft. of material meets RRSCOs. As such, remaining contamination in this area is below 15-ft. BGS.

Figure 9 illustrates the location of these areas. Any ground intrusive work that extends beyond the depths of clean backfill in these areas will require implementing the SMP. Specifically, an Excavation Work Plan, which outlines the procedures required in the event that future excavations extend into underlying residual contamination, is provided in **Appendix E.**

3.3.4 Monitoring Wells associated with In-Situ Chemical Oxidation (ISCO)

Several monitoring wells were installed to assess the performance of ISCO injections, as detailed in the 2024 ISCO Performance Monitoring Report. Groundwater monitoring activities to assess ISCO treatment will continue, as determined by the NYSDEC project manager in consultation with NYSDOH project manager, until residual groundwater concentrations are found to be consistently below ambient water quality standards or the site SCGs, or have become asymptotic at an acceptable level over an extended period. If monitoring data indicates that monitoring may no longer be required, a proposal to discontinue the remedy will be submitted by the remedial party. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC project manager. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional injections, source removal, treatment and/or control measures will be evaluated.

3.3.5 Sub-Slab Depressurization System (SSDS)

While not required as part of the remedy, an SSDS was proactively installed at a depth of 15 to 16 ft bgs. The water table varies seasonally from approximately 12 to 16 ft bgs. If soil vapor is present, SVI testing will be conducted following completion of the first-floor building envelope. The SSDS will not be operated unless the SVI testing indicates a need.

Continual operation of the SSDS would include annual monitoring of the pressure field extension (PEE) monitoring points and check of the manometer and audible alarm for the SSDS.

The layout and components of the SSDS are shown on **Figure 10**. The SSDS was designed to depressurize the basement (approximately 27,796-square feet). A RadonAway EC6 Pro Series fan would be used to depressurize the basement.

The system was designed in accordance with the NYSDOH Final Guidance for Soil Vapor Intrusion in the State of New York dated October 2006. The SSDS may need to be activated pending the results of the soil vapor intrusion evaluation that will be conducted once the building envelope construction is complete.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

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

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

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

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

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

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site-Wide Inspection

Site-wide inspections will be performed quarterly until otherwise approved. These periodic inspections must be conducted when the ground surface is visible (i.e. no snow cover). Site-wide inspections will be performed to confirm that no excavation work has occurred. Site-wide inspections will be performed under a qualified environmental

professional or professional engineer (PE). During these inspections, an inspection form will be completed as provided in Appendix H – Site Management Forms.

- Compliance with all ICs, including site usage;
- 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:

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

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 Treatment System Monitoring and Sampling

4.3.1 Remedial System Monitoring

There are no remedial systems that require monitoring.

4.3.2 Remedial System Sampling

There are no active remedial systems that require monitoring.

4.4 Post-Remediation Media Monitoring and Sampling

Samples shall be collected from the monitoring wells on a routine basis. Sampling locations, required analytical parameters and schedule are provided in Table B – Remedial

System Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Table B – Post Remediation Sampling Requirements and Schedule

Sampling Location	Analytical Parameters				Schedule
	VOCs (EPA Method 8280)	TAL Metals (EPA Method 6010B)	pH (EPA Method 9040)	VOC (EPA Method TO-15)	
Monitoring Wells (MW-18R-D, MW-18R-S, MW-28S, and MW-28D)	X				Quarterly*

** Post-remediation quarterly sampling will continue until approval by NYSDEC.*

Detailed sample collection and analytical procedures and protocols are provided in Appendix G – Quality Assurance Project Plan.

The remedial party will properly dispose of all wastes generated by the remedial system at off-site disposal facilities according to local, state and federal laws and regulations. Wastes will be tested before disposal to comply with the permit conditions of the disposal facility. Wastes generated at this site include: purge water and decontamination water from groundwater sampling activities. The waste will be placed in a 55-gallon drum and disposed of at a permitted facility.

4.4.1 Groundwater Sampling

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

Groundwater on-Site appears to flow to the southeast. The monitoring well network includes four on-site wells (MW-18R-S, MW-18R-D, MW-28S, and MW-28D) to monitor the effectiveness of ISCO injections in reducing residual petroleum hydrocarbon concentrations in the source area and prevent off-site migration of contaminants.

Table C summarizes the wells identification number, as well as the purpose, location, depths, diameter and screened intervals of the wells. As part of the groundwater monitoring, 2 upgradient wells (MW-26D, MW-26S), 2 cross-gradient wells (MW-25, MW-24R), 4 on-site wells (MW-18-D, MW-18R-S, MW-28D, MW-28S) and 2 downgradient wells (MW-27S, MW-27D) are sampled to evaluate the effectiveness of the remedial system.

Table C – Monitoring Well Construction Details

Monitoring Well ID	Well Location	Coordinates (longitude/ latitude)	Well Diameter (inches)	Elevation (NAVD88)			
				Casing	Surface	Screen Top	Screen Bottom
MW-26D	Upgradient	40.6578° N, 73.9023° W	2	19.35	19.56	-4.44	-14.44
MW-26S	Upgradient	40.6578°N, 73.9024°W	2	19.26	19.57	1.57	-3.43
MW-18R-D	On-Site (Source Area)	40.6576°N, 73.9022°W	2	7.97	7.88	-1.12	-11.12
MW-18R-S	On-Site (Source Area)	40.6576°N, 73.9022°W	2	7.6	7.86	4.86	-0.14
MW-28D	On-Site	40.6575°N, 73.9020°W	2	14.31	14.75	-9.25	-19.25
MW-28S	On-Site	40.6575°N, 73.9020°W	2	14.3	14.75	-3.25	-8.25
MW-25	Cross-gradient	40.6576°N, 73.9019°W	2	19.16	19.44	NA	NA
MW-24R	Cross-gradient	40.6574°N, 73.9018°W	2	18.7	19.03	NA	NA
MW-27S	Downgradient	40.6570°N, 73.9017°W	2	17.4	17.56	-0.44	-5.44
MW-27D	Downgradient	40.6570°N, 73.9017°W	2	17.29	17.68	-6.32	-16.32

Monitoring well construction logs are included in Appendix D of this document. The monitoring well locations are shown on **Figure 7**.

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

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

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

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

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

4.4.2 Soil Vapor Intrusion Sampling

Soil vapor intrusion sampling will be performed after the completion of the first-floor building envelope, installation of the SSDS, and prior to building occupancy to assess the performance of the remedy. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

A work plan detailing the SVI sampling is included as **Appendix I.** Based on the water table elevation, soil vapor may not be present below the building slab. If soil vapor is present below the slab, the soil vapor sampling results will be evaluated to determine if the SSDS requires activation based on NYSDOH SVI guidance. If the SSDS requires operation, an update to this SMP will be required.

4.4.3 Monitoring and Sampling Protocol

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

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. If the SSDS (Section 3.3.5) needs to be operated, Operation & Maintenance (O&M) will follow the procedures outlined in the O&M Manual (**Appendix L**).

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: Identify whether the site is located in a flood plain, low-lying or low-groundwater recharge area.

- Site Drainage and Storm Water Management: Identify areas of the site which may flood during severe rain events due to insufficient groundwater recharge capabilities or inadequate storm water management systems.

- Erosion: Identify any evidence of erosion at the site or areas of the site which may be susceptible to erosion during periods of severe rain events.

- High Wind: Identify areas of the site and/or remedial system which may be susceptible to damage from the wind itself or falling objects, such as trees or utility structures during periods of high wind.

- Electricity: Identify the susceptibility of the site/remedial system to power loss and/or dips/surges in voltage during severe weather events, including lightning strikes, and the associated impact on site equipment and operations.

- Spill/Contaminant Release: Identify areas of the site and/or remedial system which may be susceptible to a spill or other contaminant release due to storm-related damage caused by flooding, erosion, high winds, loss of power etc.

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).

- Waste Generation (describe the management of waste associated with the site and any waste reduction projects implemented).

- Energy usage (electrical usage for operation of remedial systems, site lighting, security systems, etc.).

- Emissions (vapor-phase remedial system emissions, fuel usage for transportation to and from the site for inspections and/or sampling, operation of gas-powered generators, etc.).

- Water usage (identify sources of decontamination water, irrigation water, etc.). Note that while infiltration systems for runoff may be appropriate green technologies for some sites, elevated protection of groundwater SCOs may indicate a need to minimize infiltration in certain areas and/or at certain sites.

- Land and/or ecosystems (describe any disturbances and restoration of land and/or ecosystems as part of implementation/operation of the remedy).

Methods proposed to reduce energy consumption, resource usage, waste generation, 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 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 Building Operations

Structures including buildings and sheds will be operated and maintained to provide for the most efficient operation of the remedy, while minimizing energy, waste generation and water consumption.

6.2.3 Frequency of System Checks, Sampling and Other Periodic Activities

Transportation to and from the Site and 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. Sampling and system inspections and checks will be coordinated to occur during the same site visit.

6.2.4 Metrics and Reporting

As discussed in Section 7.0 and as shown in Appendix H – 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 and are included in Appendix J (Summary of Green Remediation Metrics for Site Management form).

6.3 Remedial System Optimization

A Remedial Site Optimization (RSO) study will be conducted any time that the NYSDEC or the remedial party requests in writing that an in-depth evaluation of the remedy is needed. An RSO may be appropriate if any of the following occur:

- The management and operation of the remedial system is exceeding the estimated costs;
- The remedial system is not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;

- Site conditions change due to development, change of use, change in groundwater use, etc.;
- There is an anticipated transfer of the site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available.

An RSO will provide a critique of a site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the site's cleanup goals, gather additional performance or media specific data and information and provide recommendations for improvements to enhance the ability of the present system to reach RAOs or to provide a basis for changing the remedial strategy.

The RSO study will focus on overall site cleanup strategy, process optimization and management with the intent of identifying impediments to cleanup and improvements to site operations to increase efficiency, cost effectiveness and remedial time frames. Green remediation technology and principals are to be considered when performing the RSO.

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 H. These forms are subject to NYSDEC revision.

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

Table D: Schedule of Interim Monitoring/Inspection Reports

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

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

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

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

- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

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

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

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

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

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

7.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the Department beginning sixteen (16) months after the Certificate of Completion is issued. After submittal of the

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

- Identification, assessment and certification of all ICs required by the remedy for the site.

- Results of the required annual site inspections and severe condition inspections, if applicable.

- All applicable site management forms and other records generated for the site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.

- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.

- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS^{TM} database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

- A site evaluation, which includes the following:

  - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;

  - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;

  - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;

- Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan; and

- Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the Decision Document.

- The overall performance and effectiveness of the remedy.

For sites whose remedial programs are State-funded a quantitative and qualitative overview of a site's environmental impacts must be provided through the completion of the Summary of Green Remediation Metrics provided in Appendix J. This form as well as a summary of the Green Remediation evaluation will be included in the Periodic Review Report.

7.2.1 Certification of Institutional Controls

At the end of each certifying period, as determined by the NYSDEC project manager, the following certification will be provided to the NYSDEC project manager:

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

- *The institutional 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 information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business

address], am certifying as [Owner or Owner's Designated Site Representative] (and if the site consists of multiple properties): [and I have been authorized and designated by all site owners to sign this certification] for the site."

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

7.3 Corrective Measures Work Plan

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

7.4 Remedial Site Optimization Report

In the event that an RSO is to be performed (see Section 6.3, upon completion of an RSO, an RSO report must be submitted to the Department for approval. A general outline for the RSO report is provided in Appendix K. The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual site model and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located, Site Control and the NYSDOH Bureau of Environmental Exposure Investigation.

8.0 REFERENCES

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

Final Engineering Report, LaBella Associates, DPC, March 2024.

ISCO Performance Monitoring, LaBella Associates, DPC, March 2024.

Phase II Environmental Site Assessment, Chazen Engineering, Land Surveying & Landscape Architecture Co. DPC, February 8, 2010.

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

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

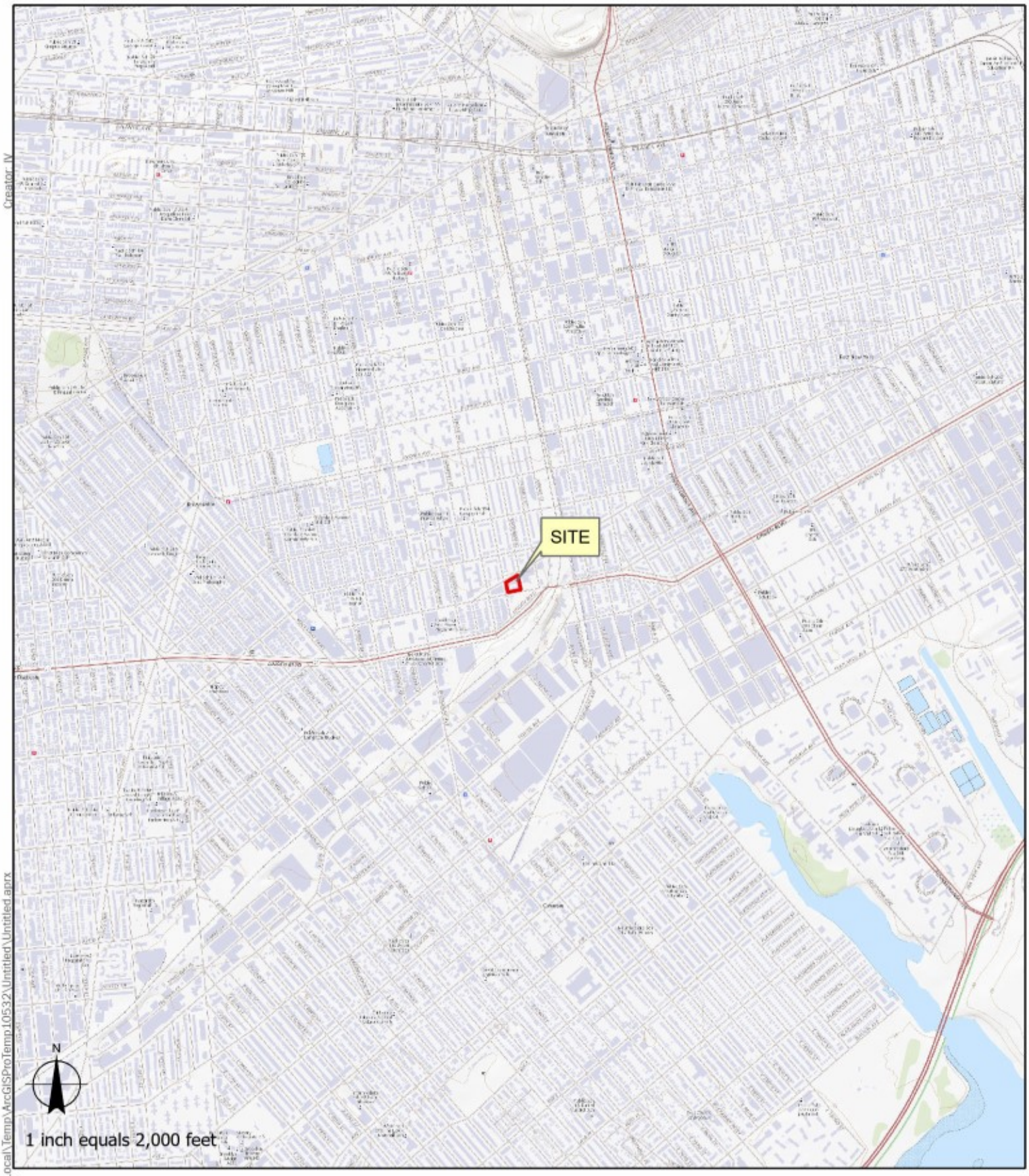
Remedial Design Modification Memorandum – ISCO, Revision 2, LaBella Associates, DPC, September 2022.

Remedial Investigation Report, Chazen Engineering, Land Surveying & Landscape Architecture Co. DPC, April 9, 2012.

Supplemental Remedial Investigation Report, Chazen Engineering, Land Surveying & Landscape Architecture Co. DPC, February 2017.

Supplemental Remedial Investigation Report, Chazen Engineering, Land Surveying & Landscape Architecture Co. DPC, March 26, 2019.

FIGURES



Creator: JV

Path: C:\Users\waldes\AppData\Local\Temp\ArcGISProTemp10532\Untitled\Untitled.aprx

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed April, 2023.

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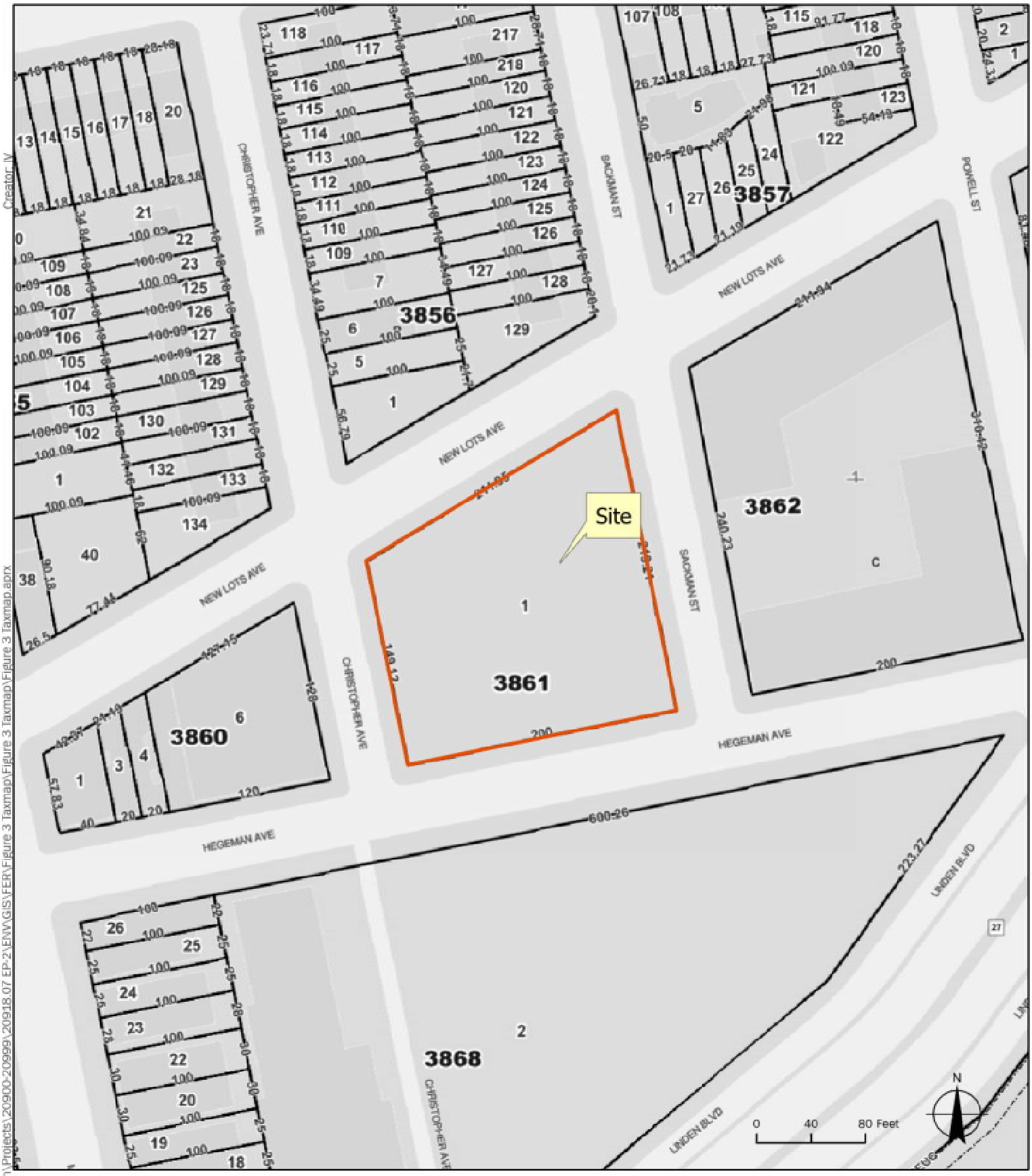
Powered by partnership

Ebenezer Plaza 2
Final Engineering Report

LaBella Project No: 20918.07
Date: January 2024

Site Location Map

FIGURE 1



Hegeman and New Lots Avenues
Borough of Brooklyn
Kings County, New York

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Ebenezar Plaza 2
Final Engineering Report

LaBella Project No: 20918.07
Date: January 2024

Tax Map

FIGURE 2

Path: \\cash.lab\u\Legacy\Chazen\Projects\20900-20999\20918.07 EP-2\ENV\GIS\VFER\Figure 3 Taxmap\Figure 3 Taxmap.aprx

NOTES:
1. Property boundaries obtained from Kings County GIS and are considered approximate.
2. Aerial Image obtained from Microsoft Bing Imagery and may not represent current conditions.
3. Sampling locations measured from Site features and are considered approximate.

A'

B'

B'

A'

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EBENEZER PLAZA II
BCP SITE NO. 224241

589 CHRISTOPHER AVE
BROOKLYN, NY

N

0 30 Feet

1:375

A-A'
B-B'
Site Boundary

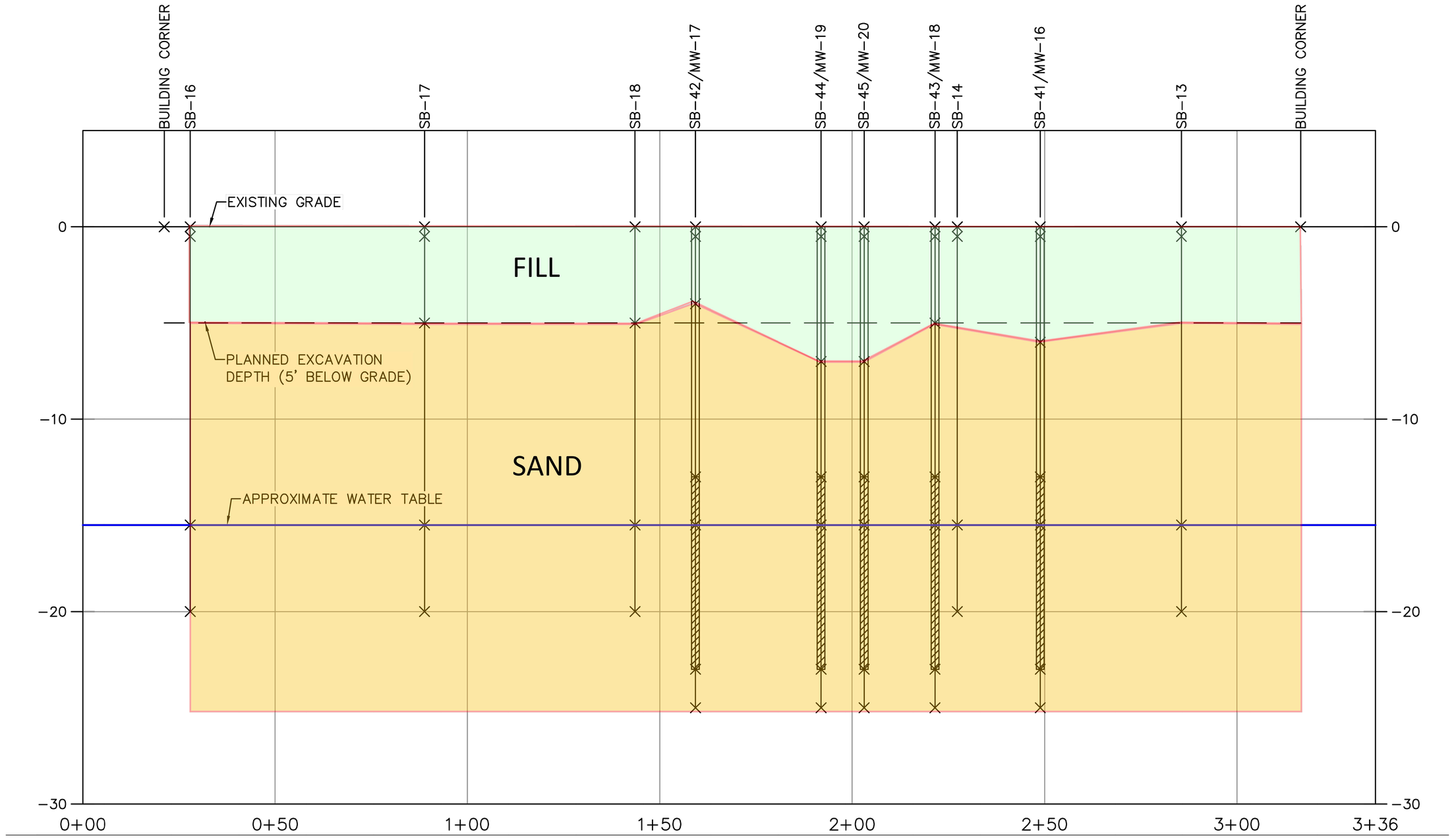
Cross Section Transect Key

FIGURE 3

LaBella Project No: 20918.07
Date: March 2024

Creator: IV Reviewer: WC

Path: \\cash.lab\u\Legacy\Chazen\Projects\20900-20999\20918.07 EP-2\ENV\GIS\SMP\Fig3_Cross Section Transect Key\Cross Section Transect Key.aprx



NO.	REVISION	BY	DATE

LaBella
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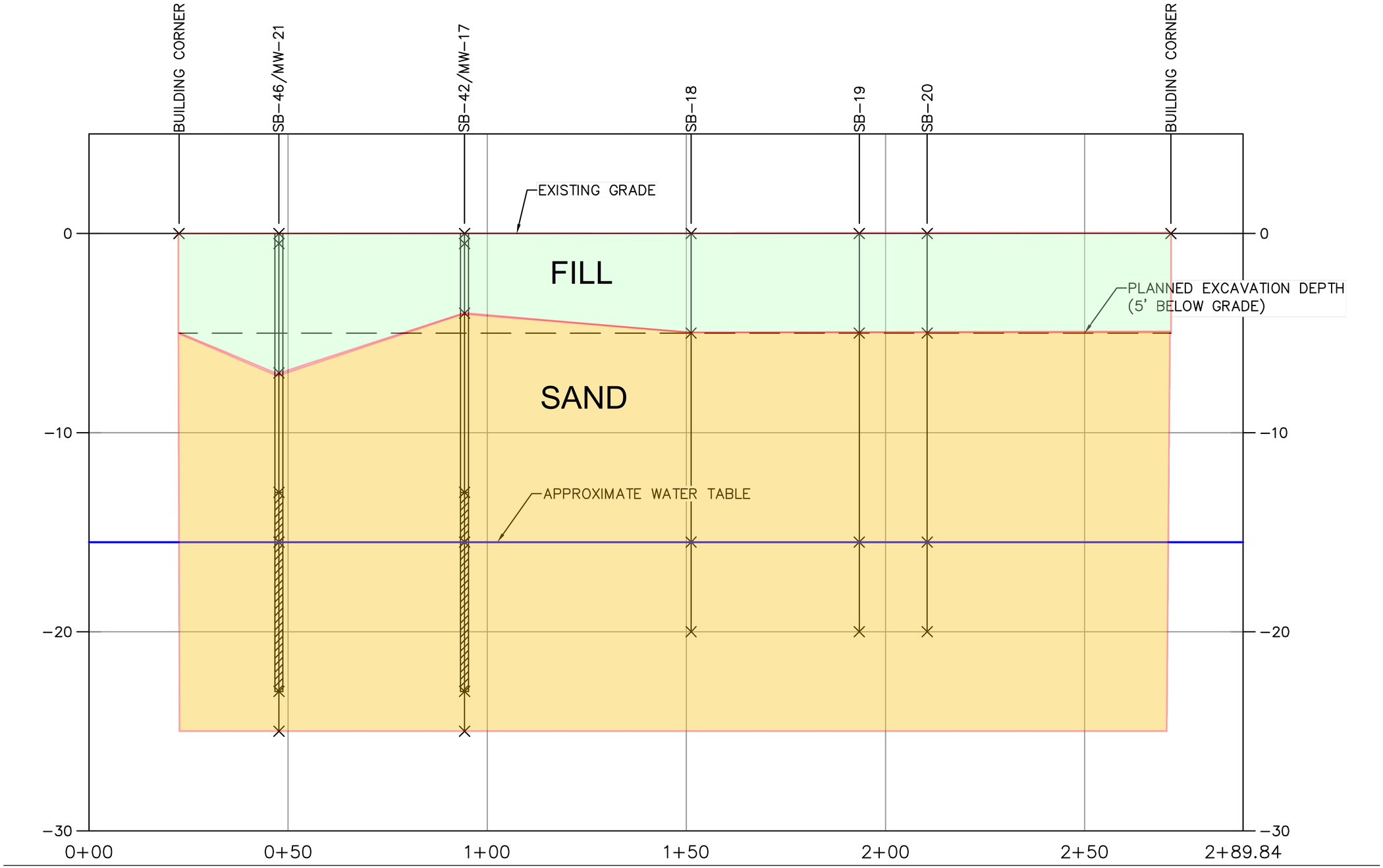
PROJECT/CLIENT
FINAL ENGINEERING REPORT
EBENEZER PLAZA 2

DRAWING TITLE
CROSS SECTION A-A'

ISSUED FOR: FINAL
DATE: MARCH, 2024
DESIGNED BY: DRP
DRAWN BY:
REVIEWED BY:

PROJECT/DRAWING NUMBER
20918.07

FIGURE 3A



NO.	REVISION	BY	DATE

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PROJECT/CLIENT
FINAL ENGINEERING REPORT
EBENEZER PLAZA 2

DRAWING TITLE
CROSS SECTION B-B'

ISSUED FOR: FINAL
DATE: MARCH, 2024

DESIGNED BY: AB
DRAWN BY: DRP
REVIEWED BY: AB

PROJECT/DRAWING NUMBER
20918.07

FIGURE 3B

NOTES:
1. Property boundaries obtained from Kings County GIS and are considered approximate.
2. Aerial Image obtained from Microsoft Bing Imagery and may not represent current conditions.
3. Ground Water elevation data collected on January 24, 2024.
4. Groundwater contours were created based on groundwater elevations from the deep monitoring wells. Groundwater elevation at MW-27D was excluded due to an anomalous reading.

MW-26 Deep
MW-26 Shallow
5.54 ft
5.4 ft
5.4 ft
5.2 ft
5.25 ft
MW-18R Deep
MW-18R Shallow
MW-25
5.27 ft
5.0 ft
5.2ft
5.29 ft
MW-28 Shallow
MW-28 Deep
4.8 ft
5.0 ft
Approximately Groundwater Flow Direction
MW-24R
4.78 ft
4.8 ft
MW-27 Shallow
MW-27 Deep
New York State, Maxar, Microsoft

Path: B:\GLOBAL\Legacy\Chazen\Projects\20900-20999\20918.07 EP-2\ENV\Remedial Design Modification Memo\ISCO Submittal\Rev1\FIGURE 5\Figure X. Post ISCO Groundwater Results\Figure 8.aprx

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Powered by partnership.

EBENEZER PLAZA II
BCP SITE NO. 224241

589 CHRISTOPHER AVE
BROOKLYN, NY

N

0 35 Feet

1:420

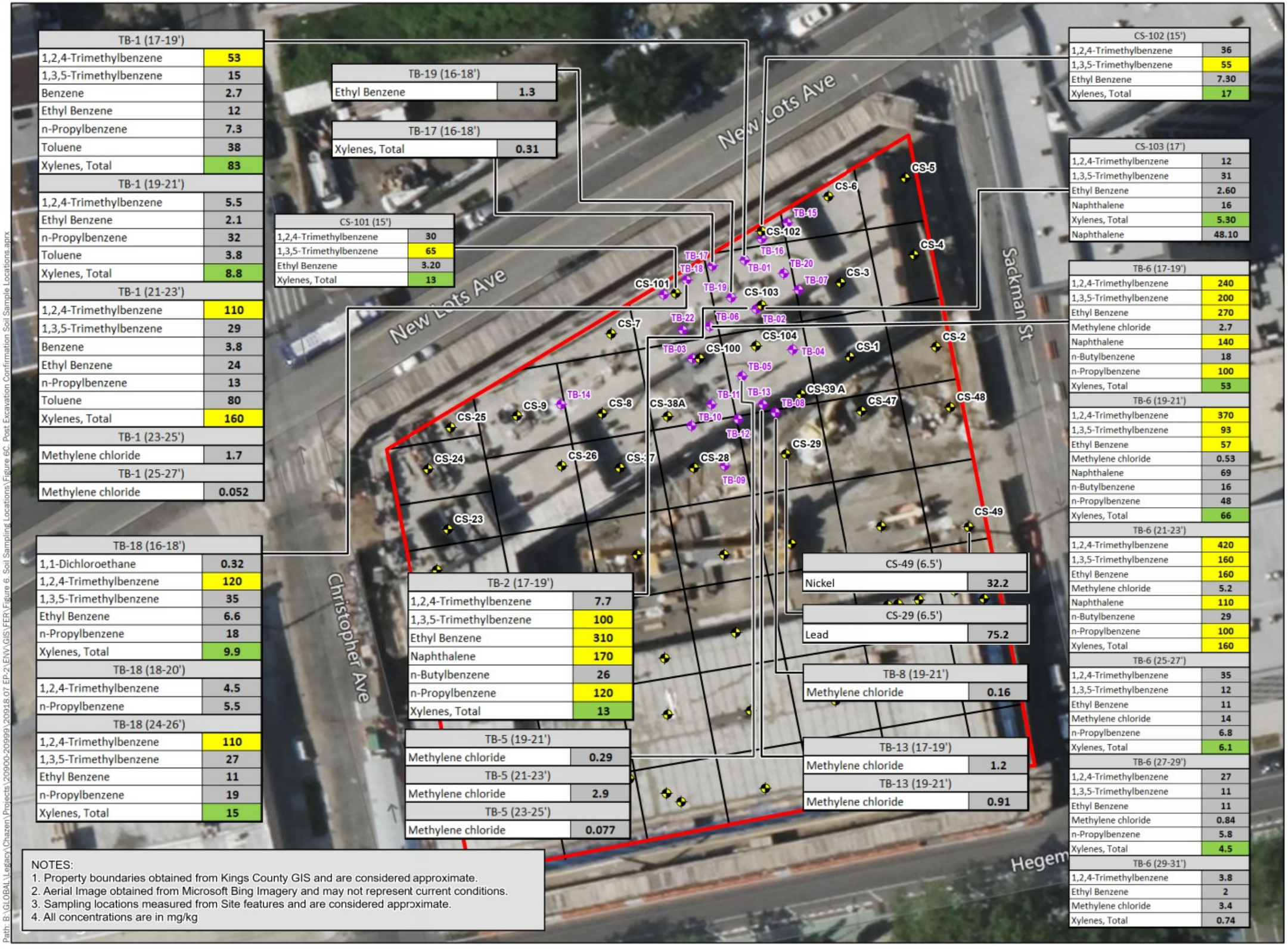
- Monitoring Wells
- Inferred Groundwater Contours
- Groundwater Contours
- Site Boundary

Groundwater Contour Map

FIGURE 4

LaBella Project No:20918.07

Date: March 2024



TB-1 (17-19')	
1,2,4-Trimethylbenzene	53
1,3,5-Trimethylbenzene	15
Benzene	2.7
Ethyl Benzene	12
n-Propylbenzene	7.3
Toluene	38
Xylenes, Total	83
TB-1 (19-21')	
1,2,4-Trimethylbenzene	5.5
Ethyl Benzene	2.1
n-Propylbenzene	32
Toluene	3.8
Xylenes, Total	8.8
TB-1 (21-23')	
1,2,4-Trimethylbenzene	110
1,3,5-Trimethylbenzene	29
Benzene	3.8
Ethyl Benzene	24
n-Propylbenzene	13
Toluene	80
Xylenes, Total	160
TB-1 (23-25')	
Methylene chloride	1.7
TB-1 (25-27')	
Methylene chloride	0.052

TB-19 (16-18')	
Ethyl Benzene	1.3

TB-17 (16-18')	
Xylenes, Total	0.31

CS-101 (15')	
1,2,4-Trimethylbenzene	30
1,3,5-Trimethylbenzene	65
Ethyl Benzene	3.20
Xylenes, Total	13

CS-102 (15')	
1,2,4-Trimethylbenzene	36
1,3,5-Trimethylbenzene	55
Ethyl Benzene	7.30
Xylenes, Total	17

CS-103 (17')	
1,2,4-Trimethylbenzene	12
1,3,5-Trimethylbenzene	31
Ethyl Benzene	2.60
Naphthalene	16
Xylenes, Total	5.30
Naphthalene	48.10

TB-6 (17-19')	
1,2,4-Trimethylbenzene	240
1,3,5-Trimethylbenzene	200
Ethyl Benzene	270
Methylene chloride	2.7
Naphthalene	140
n-Butylbenzene	18
n-Propylbenzene	100
Xylenes, Total	53
TB-6 (19-21')	
1,2,4-Trimethylbenzene	370
1,3,5-Trimethylbenzene	93
Ethyl Benzene	57
Methylene chloride	0.53
Naphthalene	69
n-Butylbenzene	16
n-Propylbenzene	48
Xylenes, Total	66
TB-6 (21-23')	
1,2,4-Trimethylbenzene	420
1,3,5-Trimethylbenzene	160
Ethyl Benzene	160
Methylene chloride	5.2
Naphthalene	110
n-Butylbenzene	29
n-Propylbenzene	100
Xylenes, Total	160
TB-6 (25-27')	
1,2,4-Trimethylbenzene	35
1,3,5-Trimethylbenzene	12
Ethyl Benzene	11
Methylene chloride	14
n-Propylbenzene	6.8
Xylenes, Total	6.1
TB-6 (27-29')	
1,2,4-Trimethylbenzene	27
1,3,5-Trimethylbenzene	11
Ethyl Benzene	11
Methylene chloride	0.84
n-Propylbenzene	5.8
Xylenes, Total	4.5
TB-6 (29-31')	
1,2,4-Trimethylbenzene	3.8
Ethyl Benzene	2
Methylene chloride	3.4
Xylenes, Total	0.74

TB-18 (16-18')	
1,1-Dichloroethane	0.32
1,2,4-Trimethylbenzene	120
1,3,5-Trimethylbenzene	35
Ethyl Benzene	6.6
n-Propylbenzene	18
Xylenes, Total	9.9
TB-18 (18-20')	
1,2,4-Trimethylbenzene	4.5
n-Propylbenzene	5.5
TB-18 (24-26')	
1,2,4-Trimethylbenzene	110
1,3,5-Trimethylbenzene	27
Ethyl Benzene	11
n-Propylbenzene	19
Xylenes, Total	15

TB-2 (17-19')	
1,2,4-Trimethylbenzene	7.7
1,3,5-Trimethylbenzene	100
Ethyl Benzene	310
Naphthalene	170
n-Butylbenzene	26
n-Propylbenzene	120
Xylenes, Total	13

TB-5 (19-21')	
Methylene chloride	0.29
TB-5 (21-23')	
Methylene chloride	2.9
TB-5 (23-25')	
Methylene chloride	0.077

CS-49 (6.5')	
Nickel	32.2

CS-29 (6.5')	
Lead	75.2

TB-8 (19-21')	
Methylene chloride	0.16

TB-13 (17-19')	
Methylene chloride	1.2
TB-13 (19-21')	
Methylene chloride	0.91

NOTES:
1. Property boundaries obtained from Kings County GIS and are considered approximate.
2. Aerial Image obtained from Microsoft Bing Imagery and may not represent current conditions.
3. Sampling locations measured from Site features and are considered approximate.
4. All concentrations are in mg/kg

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EBENEZER PLAZA II
BCP SITE NO. 224241

589 CHRISTOPHER AVE
BROOKLYN, NY

N

0 — 35 Feet

1 inch =32 ft

- Approximate Site Boundary
- Confirmation Soil Samples Achieving UUSCOs
- Tank Borings

Sample ID (Depth)	
Analyte	mg/kg

Exceedance Color Coding:

- Part 375 Restricted Residential Use SCOs (mg/kg)
- Part 375 Protection of Groundwater SCOs (mg/kg)
- Part 375 Unrestricted Use SCOs (mg/kg)

Remaining Soil Contamination After Remedial Action

FIGURE 5

LaBella Project No:20918.07

Date: March 2024

Path: B:\GLOBAL\Legacy\Chazen\Projects\20900-20999\20918.07 EP-2\ENV\GIS\FER\Figure 6. Soil Sampling Locations\Figure 6C. Post Excavation Confirmation Soil Sample Locations.aprx

NOTES:
1. Property boundaries obtained from Kings County GIS and are considered approximate.
2. Aerial Image obtained from New York State GIS Clearinghouse and may not represent current conditions.
3. Sampling locations measured from site features and are considered approximate.
4. Results displayed are exceedances of Ambient Water Quality Standards (AWQS).
5. All Concentrations are in µg/L.

MW-18R-S	
1,2,4,5-Tetramethylbenzene	86
1,2,4-Trimethylbenzene	14
Ethyl Benzene	7.40
Naphthalene	7.30
p/m-Xylene	18

MW-18R-D	
1,2,4-Trimethylbenzene	9.70

MW-26 Shallow
MW-26 Deep
MW-18R Deep
MW-18R Shallow
MW-25
MW-28 Shallow
MW-28 Deep
MW-24R
MW-27 Shallow
MW-27 Deep
Approximate Groundwater Flow Direction
New York State, Maxar, Microsoft

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EBENEZER PLAZA II
BCP SITE NO. 224241

589 CHRISTOPHER AVE
BROOKLYN, NY

N

0 35 Feet

1:420

1 inch = 35 feet

Approximate Site Boundary

Monitoring Well

Remaining Groundwater Contamination After the Remedial Action

FIGURE 6

LaBella Project No:20918.07

Date: March 2024

Path: R:\GLOBAL\Legacy\Chazen\Projects\20900-20999\20918.07_EP-2\ENV\GIS\EFR\Figure 8_Groundwater Treatment and Monitoring Well Locations\Figure 8.aprx

Path: R:\GLOBAL\Legacy\Chazen\Projects\20900-20999\20918.07 EP-2\ENV\GIS\EFR\Figure 8_Groundwater Treatment and Monitoring Well Locations\Figure 8.aprx

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EBENEZER PLAZA II
BCP SITE NO. 224241

589 CHRISTOPHER AVE
BROOKLYN, NY

N

0 35 Feet

1:420

1 inch = 35 feet

- Approximate Site Boundary
- Institutional Control Boundary
- Monitoring Well
- ISCO Injection Well 17-23 ft and 23-32 ft
- ISCO Injection Well 17-20 ft
- Zone 1: 15-17 (ft)
- Zone 2: 13-22 (ft)
- Zone 3: 7-23 (ft)
- Zone 4: 13-32 (ft)

Groundwater Treatment As Built and Monitoring Well Locations

FIGURE 7

LaBella Project No:20918.07

Date: March 2024

Path: R:\GLOBAL\Legacy\Chazen\Projects\20900-20999\20918.07 EP-2\ENV\GIS\EFR\Figure 8_Groundwater Treatment and Monitoring Well Locations\Figure 8_Groundwater Treatment and Monitoring Well Locations.aprx

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EBENEZER PLAZA II
BCP SITE NO. 224241

589 CHRISTOPHER AVE
BROOKLYN, NY

N

0 35 Feet

1:420

Legend

- Approximate Site Boundary
- Institutional Control Boundary

FIGURE 8

Institutional Control Boundaries

LaBella Project No:20918.07

Date: March 2024

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EBENEZER PLAZA II
BCP SITE NO. 224241

589 CHRISTOPHER AVE
BROOKLYN, NEW YORK

N

0 25 50 Feet

1 inch = 33 feet

Legend
- Courtyard Area
- Building Areas
- Approximate Site Boundary

FIGURE 9

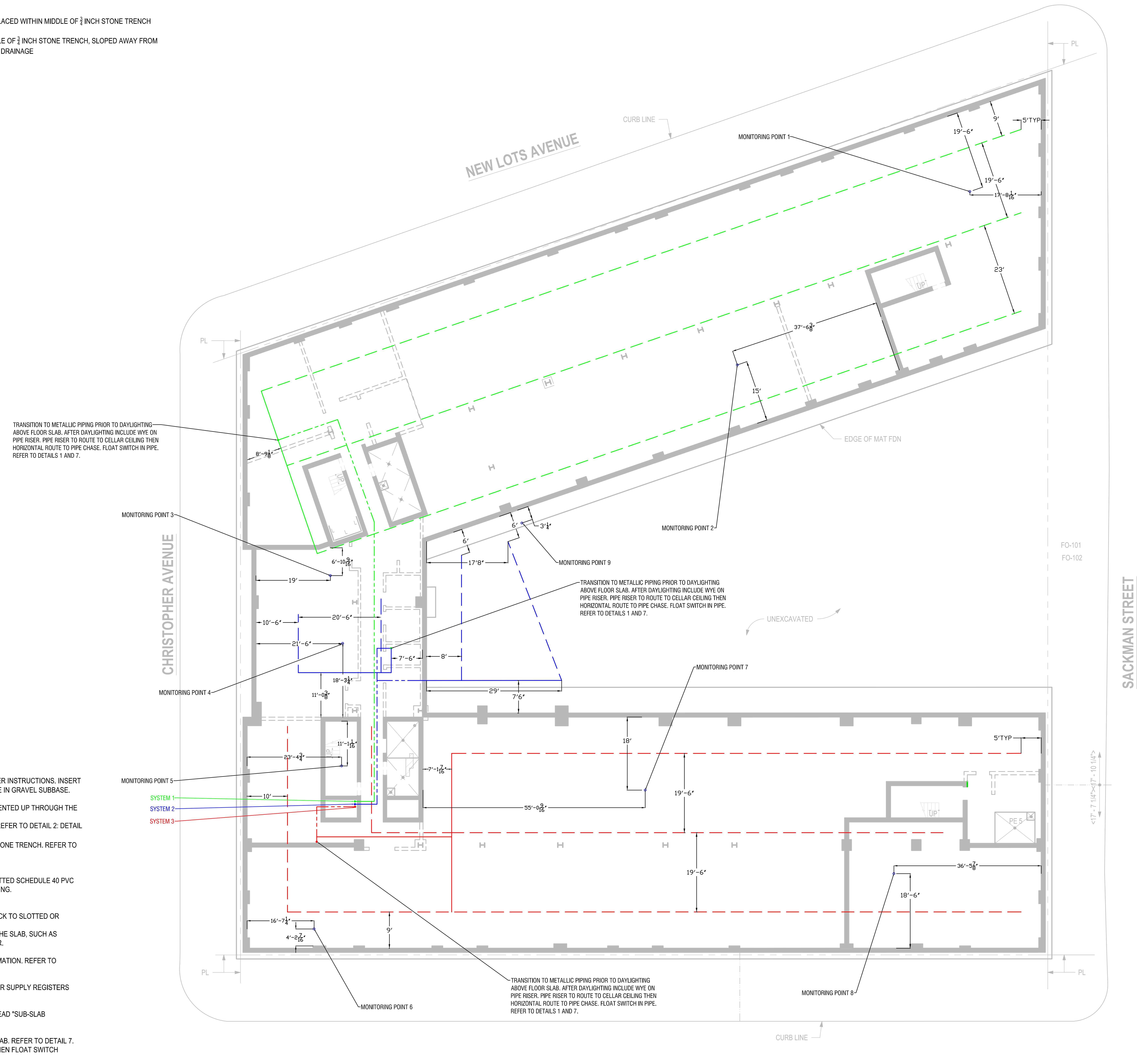
Backfill Locations

LaBella Project No: 20918.07
Date: March 2024

Path: B:\GLOBAL\Legacy\Chazen\Projects\20900-20999\20918.07 EP-2\ENV\GIS\DIG\Maps\APRX\2024_03\Figure10_BackfillLocations.aprx
Creator: IV Reviewer: WC

LEGEND

- — — — FABRIC WRAPPED 4 INCH HDPE PERFORATED PIPE PLACED WITHIN MIDDLE OF $\frac{3}{4}$ INCH STONE TRENCH
- ——— 4 INCH SOLID SCH 40 PVC PIPE PLACED WITHIN MIDDLE OF $\frac{3}{4}$ INCH STONE TRENCH, SLOPED AWAY FROM VERTICAL RISER AT $\frac{1}{8}$ INCH PER FOOT TO ALLOW FOR DRAINAGE
- – – —– – – 4 INCH CAST IRON ABOVE GROUND PIPE
- ○ PRESSURE FIELD EXTENSION MONITORING POINT



NOTES

1. VAPOR PIN® INSERT MONITORING POINTS WITH CAP INSTALLED PER MANUFACTURER INSTRUCTIONS. INSERT TO EXTEND FROM SURFACE OF CONCRETE THROUGH VAPOR BARRIER AND TERMINATE IN GRAVEL SUBBASE. REFER TO DETAIL 3: PROFILE AT GAUGE POINT
2. 4 INCH CAST IRON OR METALLIC PIPING RISER TO BE LOCATED IN PIPE CHASE AND VENTED UP THROUGH THE ROOF. REFER TO DETAIL 1: REAR END WALL.
3. 4 INCH SCHEDULE 40 PVC TO 4 INCH SLOTTED OR PERFORATED PIPE CONNECTION. REFER TO DETAIL 2: DETAIL AT HEADER
4. 4 INCH SLOTTED OR PERFORATED PIPE WRAPPED IN FABRIC AND PLACED IN $\frac{3}{4}$ inch STONE TRENCH. REFER TO DETAIL 6: MATERIAL PROFILE
5. MOVE PIPING IN FIELD TO AVOID PLUMBING.
6. INSTALL 4 INCH CAP AT EACH VAPOR COLLECTION PIPE TERMINATION
7. ALL SUB-SLAB VAPOR COLLECTION PIPING TO BE GEOTEXTILE-WRAPPED 4 INCH SLOTTED SCHEDULE 40 PVC OR PERFORATED DUAL WALLED CORRUGATED EXTERIOR SMOOTH INTERIOR HDPE PIPING.
8. HEADER PIPING TO BE SOLID 4 INCH SCHEDULE 40 PVC.
9. 3/4-INCH GRAVEL SHALL CONSIST OF #57 BLUE STONE
10. HORIZONTAL RUNS OF SOLID PIPING SHALL BE SLOPED TO PROMOTE DRAINAGE BACK TO SLOTTED OR PERFORATED PIPING.
11. TO PROTECT THE VAPOR BARRIER, ALL PENETRATIONS MADE AFTER POURING OF THE SLAB, SUCH AS JOINTS, ETC, SHALL BE CUT IN A MANNER TO AVOID PENETRATION THE VAPOR BARRIER.
12. SEAL ALL PENETRATIONS AND GAPS WITH AN ELASTOMERIC JOINT SEALANT.
13. THIS DRAWING IS NOT INTENDED TO PROVIDE STRUCTURAL OR ELECTRICAL INFORMATION. REFER TO STRUCTURAL AND ELECTRICAL DRAWINGS.
14. CONTRACTOR TO CONFIRM NO AIR INTAKE IS WITHIN 10 FEET OF VENT STACK.
15. CONTRACTOR TO CONFIRM NO ADJOINING OR ADJACENT BUILDINGS, AIR INTAKES OR SUPPLY REGISTERS ARE WITHIN 10 FEET OF VENT STACK.
16. VENT/EXHAUST STACK TO EXTEND AT LEAST 1 FOOT ABOVE ROOF LEVEL.
17. SYSTEM DESCRIPTION LABELS SHALL BE PLACED ON PIPING ABOVE THE SLAB TO READ "SUB-SLAB DEPRESSURIZATION SYSTEM."
18. INSTALL ALARM FOR EACH SYSTEM. REFER TO DETAIL 4.
19. FLOAT SWITCH FOR FAN CONTROL TO BE INSTALLED FOR EACH RISER THROUGH SLAB. REFER TO DETAIL 7.
20. ALARM, FAN AND SWITCH ELECTRICAL INSTALLED TO SHUT OFF FAN AND ALARM WHEN FLOAT SWITCH INDICATES HIGH GROUNDWATER LEVEL. REFER TO DETAIL 8.

NO.	REVISION	BY	DATE
1			
2			

LaBella
Powered by partnership.

PROJECT/CLIENT

EBENEZER PLAZA OWNER PHASE II LLC

EBENEZER PLAZA II
589 CHRISTOPHER STREET
BROOKLYN, NY

DRAWING TITLE

SUB-SLAB DEPRESSURIZATION SYSTEM DETAILS

ISSUED FOR: ----

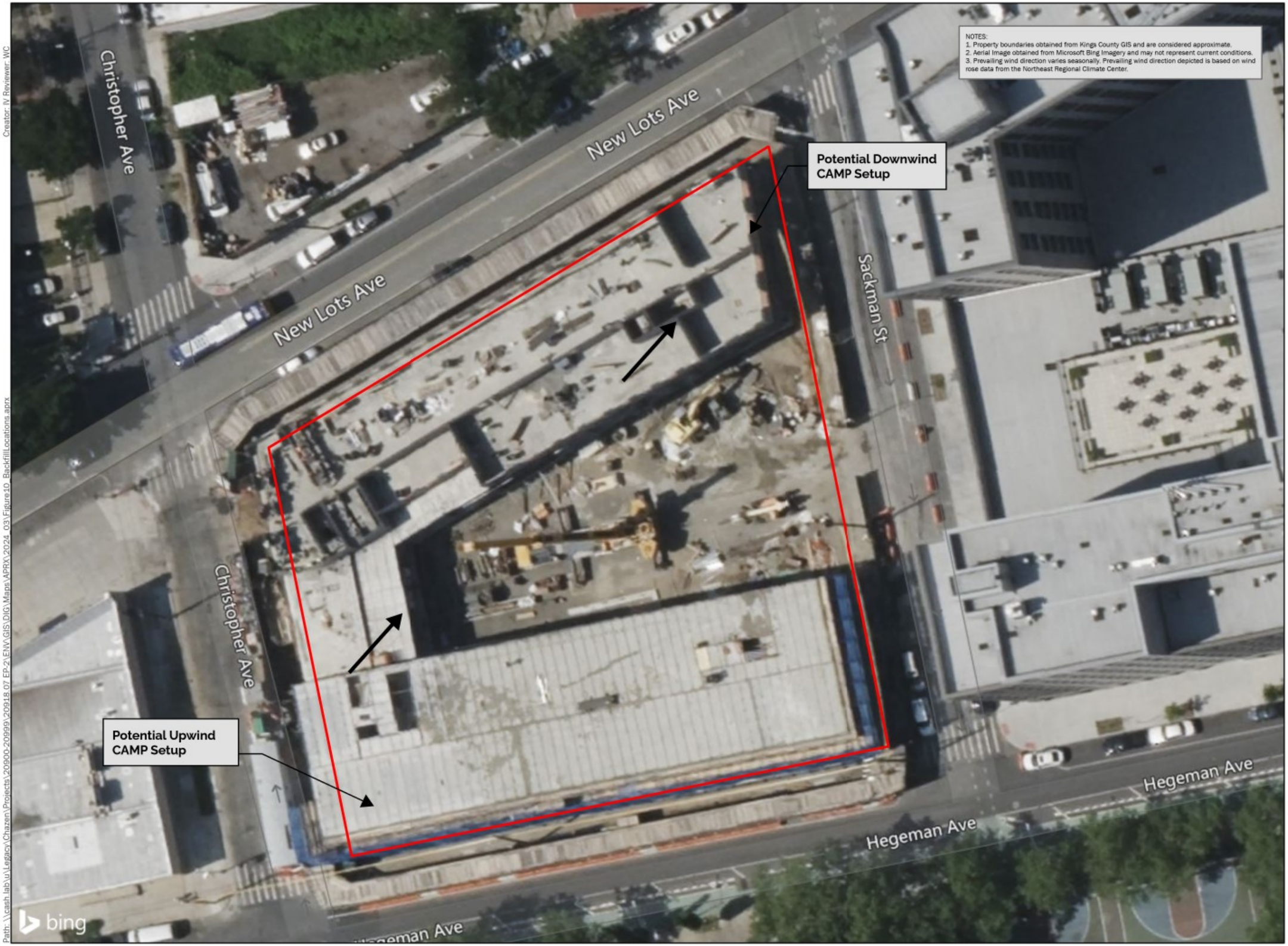
DESIGNED BY: AB
DRAWN BY: DP
REVIEWED BY: AB
SCALE: 3/32" = 1'-0"
DATE: AUGUST, 2022

\\cash.lab\u\Legacy\Chazen\Projects\20900-20999\20918.07 EP-2\ENV\SSDS\SSDS PLAN LAYOUT EDITS AB1_Rev 2.dwg

PROJECT/DRAWING NUMBER

20918.07

FIGURE 10



NOTES:
1. Property boundaries obtained from Kings County GIS and are considered approximate.
2. Aerial Image obtained from Microsoft Bing Imagery and may not represent current conditions.
3. Prevailing wind direction varies seasonally. Prevailing wind direction depicted is based on wind rose data from the Northeast Regional Climate Center.

LaBella
Powered by partnership.

EBENEZER PLAZA II
BCP SITE NO. 224241

589 CHRISTOPHER AVE
BROOKLYN, NEW YORK

N

0 25 50 Feet

Legend

- Approximate Site Boundary
- General Prevailing Wind Direction

FIGURE 11

Air Monitoring Stations Based on Generally Prevailing Wind Conditions

LaBella Project No: 20918.07
Date: March 2024

Creator: IV Reviewer: WC

Path: \\cash.lab\uv\Legacy\Chazen\Projects\20900-20999\20918.07 EP-2\ENV\GIS\DIG\Maps\APRX\2024_03\Figure10_BackfillLocations.aprx

APPENDIX A

Environmental Easement

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

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

2024071700311001001E8DD5

RECORDING AND ENDORSEMENT COVER PAGE **PAGE 1 OF 12**

Document ID: 2024071700311001 Document Date: 06-12-2024 Preparation Date: 07-17-2024
Document Type: EASEMENT
Document Page Count: 10

PRESENTER:
NATIONAL STANDARD ABSTRACT LLC
31 STEWART STREET
SWNSA-5246
FLORAL PARK, NY 11001
516-302-8451
RECORDINGS@NATIONALSTANDARDABS.COM

RETURN TO:
OFFICE OF GENERAL COUNSEL
625 BROADWAY, 14TH FLOOR
ALBANY, NY 12233

PROPERTY DATA

Borough	Block	Lot	Unit	Address
BROOKLYN	3861	1	Entire Lot	589 CHRISTOPHER AVENUE

Property Type: APARTMENT BUILDING

CROSS REFERENCE DATA

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

PARTIES

GRANTOR/SELLER:
HP EBENEZER 2 HOUSING DEVELOPMENT FUND COMPANY, IN
C/O: HOUSING PARTNERSHIP DEVELOMENT CORPORATION, 253 WEST 35TH STREET, 3RD FLOOR

☒ Additional Parties Listed on Continuation Page

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

FEES AND TAXES

Mortgage :

Mortgage Amount:	$	0.00
Taxable Mortgage Amount:	$	0.00
Exemption:		
TAXES: County (Basic):	$	0.00
City (Additional):	$	0.00
Spec (Additional):	$	0.00
TASF:	$	0.00
MTA:	$	0.00
NYCTA:	$	0.00
Additional MRT:	$	0.00
TOTAL:	$	0.00
Recording Fee:	$	87.00
Affidavit Fee:	$	0.00

Filing Fee: $ 100.00
NYC Real Property Transfer Tax: $ 0.00
NYS Real Estate Transfer Tax: $ 0.00

RECORDED OR FILED IN THE OFFICE OF THE CITY REGISTER OF THE CITY OF NEW YORK
Recorded/Filed 07-19-2024 11:50
City Register File No.(CRFN): **2024000185220**

City Register Official Signature

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

2024071700311001001C8F55

RECORDING AND ENDORSEMENT COVER PAGE (CONTINUATION) **PAGE 2 OF 12**

Document ID: 2024071700311001 Document Date: 06-12-2024 Preparation Date: 07-17-2024
Document Type: EASEMENT

PARTIES

GRANTOR/SELLER:
EBENEZER PLAZA OWNER PHASE II LLC
C/O: PROCIDA DEVELOPMENT GROUP LLC, 456
EAST 173RD STREET
BRONX, NY 10457

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

THIS INDENTURE made this 12th day of June, 2024 between Owner(s), HP Ebenezer 2 Housing Development Fund Company, Inc. (the "Grantor Fee Owner") having an office at c/o Housing Partnership Development Corporation 253 West 35th Street, 3rd Floor, New York, and Ebenezer Plaza Owner Phase II LLC (the "Grantor Beneficial Owner") having an office at c/o Procida Development Group LLC 456 East 173rd Street, Bronx, State of New York (together with Grantor Fee Owner, collectively, the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

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

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

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

WHEREAS, Grantor, is the owner of real property located at the address of 589 Christopher Avenue a/k/a 257 Hegeman Avenue in the City of New York, County of Kings and State of New York, known and designated on the tax map of the New York City Department of Finance as tax map parcel number: Block 3861 Lot 1, being the same as that property conveyed to Grantor by deed dated June 22, 2018 and recorded in the City Register of the City of New York as City Register File No. 2018000246675. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.845 +/- acres, and is hereinafter more fully described in the Land Title Survey dated August 4, 2015, and last revised July 7, 2023 prepared by Neville V. Ramsay, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

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

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

WHEREAS, Grantor Beneficial Owner, is the owner of the beneficial interest in the Controlled Property being the same as a portion of that beneficial interest conveyed to Grantor Beneficial Owner by means of a Declaration of Interest and Nominee Agreement between Grantor Fee Owner and Grantor Beneficial Owner dated as of June 29, 2022 and recorded in City Register of the City of New York on July 18, 2022, as CRFN # 2022000284237;

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: C224241-10-16, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

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

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

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

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

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

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

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

Department;

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

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

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

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

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

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

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

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

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

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

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property

shall state in at least fifteen-point bold-faced type:

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

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

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

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

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

(i) are in-place;

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

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

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

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

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

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

(7) the information presented is accurate and complete.

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

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

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

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

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

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

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

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

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

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

Parties shall address correspondence to:

Site Number: C224241
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC

625 Broadway
Albany, NY 12233

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

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

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

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

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

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

Remainder of Page Intentionally Left Blank

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

HP Ebenezer 2 Housing Development Fund Company, Inc.:

By: Jamie Amarr

Print Name: Jamie A. Smarr

Title: President Date: _____

Grantor's Acknowledgment

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

On the 4th day of June, in the year 2024, before me, the undersigned, personally appeared Jamie A. Smarr, 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
Registration No. 01BE6220876
Qualified in kings County
Commission Expires April 19, 2026

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

Ebenezer Plaza Owner Phase II LLC:

By: Ericka Keller

Print Name: Ericka Keller

Title: Managing Member Date: 6/4/2024

Grantor's Acknowledgment

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

On the 4 day of June, in the year 2024, before me, the undersigned, personally appeared Ericka Keller 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.

Kimberly Langona
Notary Public - State of New York

Kimberly Langona
NOTARY PUBLIC, STATE OF NEW YORK
Registration No. 01LA5134986
Qualified in Queens County
Commission Expires October 11, 2025

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

By: _____
Janet Brown, Asst. Division Director of
Environmental Remediation

Grantee's Acknowledgment

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

On the 12th day of June, in the year 2024 before me, the undersigned, personally appeared Janet Brown, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

Cheryl A. Salem
Notary Public State of New York
Registration No. 01SA0002177
Qualified in Albany County
My Commission Expires March 3, 2027

SCHEDULE "A" PROPERTY DESCRIPTION

ALL that certain plot, piece or parcel of land situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

BEGINNING at the corner formed by the intersection of the northerly side of Hegeman Avenue with the easterly side of Christopher Avenue;

RUNNING THENCE easterly along the northerly side of Hegeman Avenue, 200.00 feet to the westerly side of Sackman Street;

THENCE northerly at right angles along the westerly side of Sackman Street, 219.21 feet to the corner formed by the intersection of the westerly side of Sackman Street with southerly side of New Lots Avenue;

THENCE westerly on a line forming an interior angle of 70 degrees 40 minutes 02 seconds with the last described course and along the southerly side of New Lots Avenue, 211.95 feet to the corner formed by the southerly side of New Lots Avenue with the easterly side of Christopher Avenue;

THENCE southerly on a line forming an interior angle of 109 degrees 19 minutes 58 seconds with the last described course and along the easterly side of Christopher Avenue, 149.04 feet to the northerly side of Hegeman Avenue, at the point or place of BEGINNING.

FOR INFORMATION ONLY: Premises known as 589 Christopher Avenue, Brooklyn, NY.
Block 3861 Lot 1

APPENDIX B

List of Site Contacts

APPENDIX B – LIST OF SITE CONTACTS

Name	Phone/Email Address
Site Owner and Remedial Party: Peter Procida (Ebenezer Plaza Owner, LLC)	718-299-7000x211 pprocida@procidacompanies.com
Professional Engineer: Dan Noll, PE (LaBella Associates, DPC)	585-295-6611 dnoll@labellapc.com
Qualified Environmental Professional: Richard Kampf, PG (LaBella Associates, DPC)	917-280-6364 rkampf@labellapc.com
NYSDEC Project Manager and Site Control: Aaron Fischer	518-402-9805 Aaron.fischer@dec.ny.gov
NYSDEC Section Chief: Heidi Dudek	518-402-9813 Heidi.dudek@dec.ny.gov
NYSDEC Section Chief: Gerard Burke	518-402-9814 Gerard.burke@dec.ny.gov
NYSDOH Project Manager: Michele Dolan	518-402-7860 Michele.dolan@health.ny.gov
Remedial Party Attorney: Dean Sommer (Young/Sommer LLC Attorneys at Law)	518-438-9907 x 236 dsommer@youngsommer.com

APPENDIX C

Boring Logs

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Linden Plaza Phase II ESA
LOCATION: Hegeman and New Lots Aves, Brooklyn, NY
CLIENT: Church of God of East Flatbush
PROJECT NO.: 20918.00 Task 0200

Test Boring No.: **SB-12**
Total Depth: 20 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe®
Driller: Andrea Babel
Inspector: Dan Michaud

Start Date: 12/21/2009
Finish Date: 12/21/2009
El. Datum:
G.S. Elevation:

Northing:
Easting:
Longitude:
Latitude:

Borehole Dia.: 2.125 in.
Depth to Water: NA ft.
Depth to Rock: NA ft.
Depth of Well: NA ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Groundwater	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
1	-1				30	0.1		6" Concrete 24" Brown fine SAND, dry; NOSOC
2	-2							
3	-3							
4	-4							
5	-5							
6	-6				36	0.1		15" SAA; NOSOC 21" Dark brown fine SAND w. some clay
7	-7							
8	-8							
9	-9							
10	-10							
11	-11				48	0		48" Fine-medium SAND, moist at tip; NOSOC
12	-12							
13	-13							
14	-14							
15	-15							
16	-16			▼	60	0.7		60" Fine-medium SAND, wet; NOSOC
17	-17							
18	-18							
19	-19							
20	-20							EOB at 20'. Refusal not encountered

Well Diagram

1" diameter; 0.010-slot PVC Screen (10 -- 20 feet bgs)

Field Notes, Well Notes, Comments:

Well Type:
Temporary Monitoring

Finish Type: PVC

STANDARD NOTES:
1. Refer to the "Interpretation of Subsurface Logs" for additional symbology and abbreviation definitions.
2. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
3. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

DRILLING INFORMATION
Method: Direct Push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

ADDITIONAL NOTES:
1) SAA = Same As Above
2) NOSOC = No Obvious Signs of Contamination
3) EOB = End of Boring
4) PID #2 used, calibrated with Isobutylene gas prior to use.

TEST BORING AND WELL LOG

THE Chazen COMPANIES **21 Fox Street** **Poughkeepsie, NY** **12601**	**PROJECT:** Linden Plaza Phase II ESA **LOCATION:** Hegeman and New Lots Aves, Brooklyn, NY **CLIENT:** Church of God of East Flatbush **PROJECT NO.:** 20918.00 Task 0200		**Test Boring No.:** **SB-13** **Total Depth:** 20 ft.
Contractor: Aquifer Drilling and Testing **Drill Rig:** Geoprobe® **Driller:** Andrea Babel **Inspector:** Dan Michaud	**Start Date:** 12/23/2009 **Finish Date:** 12/23/2009 **El. Datum:** **G.S. Elevation:**	**Northing:** **Easting:** **Longitude:** **Latitude:**	**Borehole Dia.:** 2.125 in. **Depth to Water:** NA ft. **Depth to Rock:** NA ft. **Depth of Well:** NA ft.

Depth *(Feet)*	Elevation *(Feet)*	Casing Data	Sample No.	Groundwater	Recovery *(Inches)*	PID *(ppm)*	Group Symbol	Stratum and Field Descriptions:	Well Diagram	Field Notes, Well Notes, Comments:
					36	8.3		36" Orange silty SAND, dry; NOSOC.		Well Type: Temporary Monitoring
1	-1									Finish Type: PVC
2	-2									* space had a very strong paint odor
3	-3									
4	-4									
5	-5									
					36	18.1		36" Orange silty SAND, dry; NOSOC.		
6	-6									
7	-7									
8	-8									
9	-9									
10	-10									
					36	10.3		36" Orange medium SAND, dry, NOSOC.		
11	-11									
12	-12									
13	-13									
14	-14									
15	-15									
				▼	60	4.5		60" Orange medium SAND, wet; NOSOC.		1" diameter; 0.010-slot PVC Screen (10 -- 20 feet bgs)
16	-16									
17	-17									
18	-18									
19	-19									
20	-20							EOB at 20'. Refusal not encountered		

STANDARD NOTES: 1. Refer to the "Interpretation of Subsurface Logs" for additional symbology and abbreviation definitions.
2. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
3. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

DRILLING INFORMATION
Method: Direct Push

ADDITIONAL NOTES:
1) SAA = Same As Above
2) NOSOC = No Obvious Signs of Contamination
3) EOB = End of Boring
4) PID #2 used, calibrated with Isobutylene gas prior to use.

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

TEST BORING AND WELL LOG

THE Chazen COMPANIES **21 Fox Street** **Poughkeepsie, NY** **12601**	**PROJECT:** Linden Plaza Phase II ESA **LOCATION:** Hegeman and New Lots Aves, Brooklyn, NY **CLIENT:** Church of God of East Flatbush **PROJECT NO.:** 20918.00 Task 0200		**Test Boring No.:** **SB-14** **Total Depth:** 20 ft.
Contractor: Aquifer Drilling and Testing **Drill Rig:** Geoprobe® **Driller:** Andrea Babel **Inspector:** Dan Michaud	**Start Date:** 12/23/2009 **Finish Date:** 12/23/2009 **El. Datum:** **G.S. Elevation:**	**Northing:** **Easting:** **Longitude:** **Latitude:**	**Borehole Dia.:** 2.125 in. **Depth to Water:** NA ft. **Depth to Rock:** NA ft. **Depth of Well:** NA ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Groundwater	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
					48	11		48" Orange silty SAND, dry; NOSOC
1	-1							
2	-2							
3	-3							
4	-4							
5	-5							
					36	112		36" Dark brown medium SAND, dry. Petroleum odor
6	-6							
7	-7							
8	-8							
9	-9							
10	-10							
					60	270		60" Light brown medium SAND, dry; chemical odor
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
				▼	60	1923		60" Light brown medium SAND, wet. Strong chemical odor
16	-16							
17	-17							
18	-18							
19	-19							
20	-20							EOB at 20'. Refusal not encountered

Well Diagram: 1" diameter; 0.010-slot PVC Screen (10 -- 20 feet bgs)

Field Notes, Well Notes, Comments:

Well Type:
Temporary Monitoiring

Finish Type: PVC

STANDARD NOTES:
1. Refer to the "Interpretation of Subsurface Logs" for additional symbology and abbreviation definitions.
2. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
3. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

ADDITIONAL NOTES:
1) SAA = Same As Above
2) NOSOC = No Obvious Signs of Contamination
3) EOB = End of Boring
4) PID #2 used, calibrated with Isobutylene gas prior to use.

DRILLING INFORMATION
Method: Direct Push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Linden Plaza Phase II ESA
LOCATION: Hegeman and New Lots Aves, Brooklyn, NY
CLIENT: Church of God of East Flatbush
PROJECT NO.: 20918.00 Task 0200

Test Boring No.: **SB-16**
Total Depth: 20 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe®
Driller: Andrea Babel
Inspector: Dan Michaud

Start Date: 12/22/2009
Finish Date: 12/22/2009
El. Datum:
G.S. Elevation:

Northing:
Easting:
Longitude:
Latitude:

Borehole Dia.: 2.125 in.
Depth to Water: NA ft.
Depth to Rock: NA ft.
Depth of Well: NA ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Groundwater	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
					36	1.1		6" Concrete
1	-1							30" Orange/light brown silty SAND, dry; NOSOC
2	-2							
3	-3							
4	-4							
5	-5							
					36	1.6		18" SAA
6	-6							
								18" Light brown medium SAND, dry; NOSOC
7	-7							
8	-8							
9	-9							
10	-10							
					60	2.6		60" SAA; NOSOC
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
				▼	60	1.8		60" SAA; NOSOC
16	-16							
17	-17							
18	-18							
19	-19							
20	-20							EOB at 20'. Refusal not encountered

Well Diagram

Field Notes, Well Notes, Comments:

Well Type:
Temporary Monitoring

Finish Type: PVC

1" diameter; 0.010-slot PVC Screen (10 -- 20 feet bgs)

STANDARD NOTES:
1. Refer to the "Interpretation of Subsurface Logs" for additional symbology and abbreviation definitions.
2. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
3. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

DRILLING INFORMATION
Method: Direct Push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

ADDITIONAL NOTES:
1) SAA = Same As Above
2) NOSOC = No Obvious Signs of Contamination
3) EOB = End of Boring
4) PID #2 used, calibrated with Isobutylene gas prior to use.

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Linden Plaza Phase II ESA
LOCATION: Hegeman and New Lots Aves, Brooklyn, NY
CLIENT: Church of God of East Flatbush
PROJECT NO.: 20918.00 Task 0200

Test Boring No.: **SB-17**
Total Depth: 20 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe®
Driller: Andrea Babel
Inspector: Dan Michaud

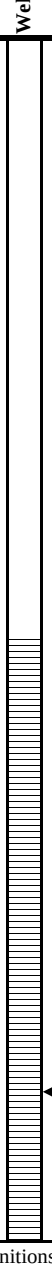
Start Date: 12/24/2009
Finish Date: 12/24/2009
El. Datum:
G.S. Elevation:

Northing:
Easting:
Longitude:
Latitude:

Borehole Dia.: 2.125 in.
Depth to Water: NA ft.
Depth to Rock: NA ft.
Depth of Well: NA ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Groundwater	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
					36	5.4		4" Asphalt and stone
1	-1							32" Black stained silty fill soils
2	-2							
3	-3							
4	-4							
5	-5							
					12	0.7		12" Orange silty SAND, dry; NOSOC
6	-6							
7	-7							
8	-8							
9	-9							
10	-10							
					48	0.7		48" Medium SAND, dry; NOSOC.
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
				▼	60	0.5		60" Fine-medium SAND, wet; NOSOC.
16	-16							
17	-17							
18	-18							
19	-19							
20	-20							EOB at 20'. Refusal not encountered

Well Diagram



Field Notes, Well Notes, Comments:

Well Type:
Temporary Monitoring

Finish Type: PVC

1" diameter; 0.010-slot PVC Screen (10 -- 20 feet bgs)

STANDARD NOTES:
1. Refer to the "Interpretation of Subsurface Logs" for additional symbology and abbreviation definitions.
2. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
3. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

DRILLING INFORMATION
Method: Direct Push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

ADDITIONAL NOTES:
1) SAA = Same As Above
2) NOSOC = No Obvious Signs of Contamination
3) EOB = End of Boring
4) PID #2 used, calibrated with Isobutylene gas prior to use.

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Linden Plaza Phase II ESA
LOCATION: Hegeman and New Lots Aves, Brooklyn, NY
CLIENT: Church of God of East Flatbush
PROJECT NO.: 20918.00 Task 0200

Test Boring No.: **SB-18**
Total Depth: 20 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe®
Driller: Andrea Babel
Inspector: Dan Michaud

Start Date: 12/24/2009
Finish Date: 12/24/2009
El. Datum:
G.S. Elevation:

Northing:
Easting:
Longitude:
Latitude:

Borehole Dia.: 2.125 in.
Depth to Water: NA ft.
Depth to Rock: NA ft.
Depth of Well: NA ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Groundwater	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
					48	63.3		12" Black stained fill soils
1	-1							20" Orange black silty SAND, dry
2	-2							
3	-3							
4	-4							
5	-5							
					36	1.8		36" Orange silty SAND, dry; NOSOC.
6	-6							
7	-7							
8	-8							
9	-9							
10	-10							
					36	9.7		36" Light brown medium SAND, dry; NOSOC
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
				▼	60	4.1		60" Orange medium SAND, wet; NOSOC.
16	-16							
17	-17							
18	-18							
19	-19							
20	-20							EOB at 20'. Refusal not encountered

Well Diagram

Field Notes, Well Notes, Comments:

Well Type:
Temporary Monitoring

Finish Type: PVC

1" diameter; 0.010-slot PVC Screen (10 -- 20 feet bgs)

STANDARD NOTES:
1. Refer to the "Interpretation of Subsurface Logs" for additional symbology and abbreviation definitions.
2. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
3. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

DRILLING INFORMATION
Method: Direct Push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

ADDITIONAL NOTES:
1) SAA = Same As Above
2) NOSOC = No Obvious Signs of Contamination
3) EOB = End of Boring
4) PID #2 used, calibrated with Isobutylene gas prior to use.

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Linden Plaza Phase II ESA
LOCATION: Hegeman and New Lots Aves, Brooklyn, NY
CLIENT: Church of God of East Flatbush
PROJECT NO.: 20918.00 Task 0200

Test Boring No.: **SB-19**
Total Depth: 20 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe®
Driller: Andrea Babel
Inspector: Dan Michaud

Start Date: 12/21/2009
Finish Date: 12/21/2009
El. Datum:
G.S. Elevation:
Northing:
Easting:
Longitude:
Latitude:

Borehole Dia.: 2.125 in.
Depth to Water: NA ft.
Depth to Rock: NA ft.
Depth of Well: NA ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Groundwater	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
1	-1				12	0		12" Broken concrete and brick fill
2	-2							
3	-3							
4	-4							
5	-5							
6	-6				30	0		30" Brown medium SAND, dry; NOSOC
7	-7							
8	-8							
9	-9							
10	-10							
11	-11				48	0		48" Brown medium SAND, moist at tip; NOSOC.
12	-12							
13	-13							
14	-14							
15	-15							
16	-16			▼	48	0		48" Medium SAND, wet; NOSOC
17	-17							
18	-18							
19	-19							
20	-20							EOB at 20'. Refusal not encountered

Well Diagram

Field Notes, Well Notes, Comments:

Well Type:
Temporary Monitoring

Finish Type: PVC

1" diameter; 0.010-slot PVC Screen (10 -- 20 feet bgs)

STANDARD NOTES:
1. Refer to the "Interpretation of Subsurface Logs" for additional symbology and abbreviation definitions.
2. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
3. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

DRILLING INFORMATION
Method: Direct Push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

ADDITIONAL NOTES:
1) SAA = Same As Above
2) NOSOC = No Obvious Signs of Contamination
3) EOB = End of Boring
4) PID #2 used, calibrated with Isobutylene gas prior to use.

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Linden Plaza Phase II ESA
LOCATION: Hegeman and New Lots Aves, Brooklyn, NY
CLIENT: Church of God of East Flatbush
PROJECT NO.: 20918.00 Task 0200

Test Boring No.: **SB-20**
Total Depth: 20 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe®
Driller: Andrea Babel
Inspector: Dan Michaud

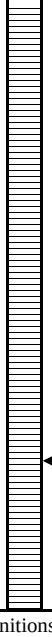
Start Date: 12/21/2009
Finish Date: 12/21/2009
El. Datum:
G.S. Elevation:

Northing:
Easting:
Longitude:
Latitude:

Borehole Dia.: 2.125 in.
Depth to Water: NA ft.
Depth to Rock: NA ft.
Depth of Well: NA ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Groundwater	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
					30	0		6" Concrete
1	-1							24" Broken brick with brown medium SAND, dry; NOSOC
2	-2							
3	-3							
4	-4							
5	-5							
					36	0		36" Brown SILT and fine SAND, dry; NOSOC.
6	-6							
7	-7							
8	-8							
9	-9							
10	-10							
					48	0		48" Orange brown medium SAND, wet at tip; NOSOC.
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
				▼	60	0		60" Brown fine-medium SAND, moist; NOSOC
16	-16							
17	-17							
18	-18							
19	-19							
20	-20							EOB at 20'. Refusal not encountered

Well Diagram



Field Notes, Well Notes, Comments:

Well Type:
Temporary Monitoring

Finish Type: PVC

1" diameter; 0.010-slot PVC Screen (10 -- 20 feet bgs)

STANDARD NOTES:
1. Refer to the "Interpretation of Subsurface Logs" for additional symbology and abbreviation definitions.
2. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
3. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

ADDITIONAL NOTES:
1) SAA = Same As Above
2) NOSOC = No Obvious Signs of Contamination
3) EOB = End of Boring
4) PID #2 used, calibrated with Isobutylene gas prior to use.

DRILLING INFORMATION
Method: Direct Push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Linden Plaza Phase II ESA
LOCATION: Hegeman and New Lots Aves, Brooklyn, NY
CLIENT: Church of God of East Flatbush
PROJECT NO.: 20918.00 Task 0200

Test Boring No.: **SB-22**
Total Depth: 20 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe®
Driller: Andrea Babel
Inspector: Dan Michaud

Start Date: 12/22/2009
Finish Date: 12/22/2009
El. Datum:
G.S. Elevation:

Northing:
Easting:
Longitude:
Latitude:

Borehole Dia.: 2.125 in.
Depth to Water: NA ft.
Depth to Rock: NA ft.
Depth of Well: NA ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Groundwater	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
					36	0.5		36" Orange silty SAND, dry; NOSOC
1	-1							
2	-2							
3	-3							
4	-4							
5	-5							
					0	9.1		0" Some scrap sands as above.
6	-6							
7	-7							
8	-8							
9	-9							
10	-10							
					36	1		36" Brown medium SAND, dry; NOSOC.
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
				▼	60	10.2		48" SAA, wet
16	-16							
17	-17							12" SAA, gray, slight odor.
18	-18							
19	-19							
20	-20							EOB at 20'. Refusal not encountered

Well Diagram

1" diameter; 0.010-slot PVC Screen (10 -- 20 feet bgs)

Field Notes, Well Notes, Comments:

Well Type:
Temporary Monitoring

Finish Type: PVC

STANDARD NOTES:
1. Refer to the "Interpretation of Subsurface Logs" for additional symbology and abbreviation definitions.
2. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
3. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

ADDITIONAL NOTES:
1) SAA = Same As Above
2) NOSOC = No Obvious Signs of Contamination
3) EOB = End of Boring
4) PID #2 used, calibrated with Isobutylene gas prior to use.

DRILLING INFORMATION
Method: Direct Push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

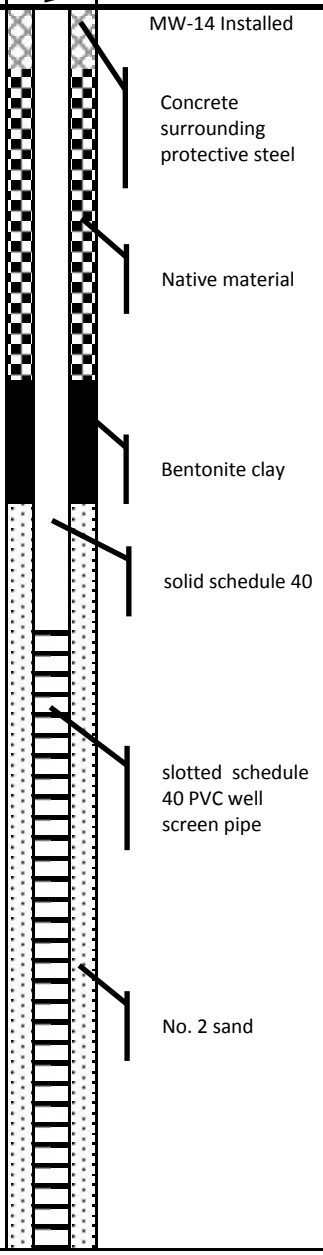
Test Boring No.: **SB-39**
Total Depth: 20 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe 6610 DT
Driller: Andrea Larkin
Inspector: Scott Dietzel

Start Date: 11/18/2011
Finish Date: 11/18/2011
El. Datum: N/A
G.S. Elevation: 0.00
Northing: ---
Easting: ---
Longitude: ---
Latitude: ---

Borehole Dia.: 2.25 in.
Depth to Water: 15 ft.
Depth to Rock: N/A ft.
Depth of Well: 20 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
								Vac-tron utility cleanance to 5 feet below ground surface (bgs)
5	-5		1		36	14.5	SP	Brown silty fine SAND
8	-8							Brown fine to medium SAND, slight odor
10	-10		2		40	2.2	SP	Brown SAND, mostly medium sand, some fine sand, trace coarse sand, slight odor
15	-15		3		40	2799	SP	SAA, grades to gray stained, strong odor
18	-18							orange-brown medium SAND (not obviously stained)
								Exploration terminated at 20 ft. bgs



STANDARD NOTES: 1. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
2. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

DRILLING INFORMATION
Method: Direct push

ADDITIONAL NOTES:
Monitoring well replaced by Injection well IW-1

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

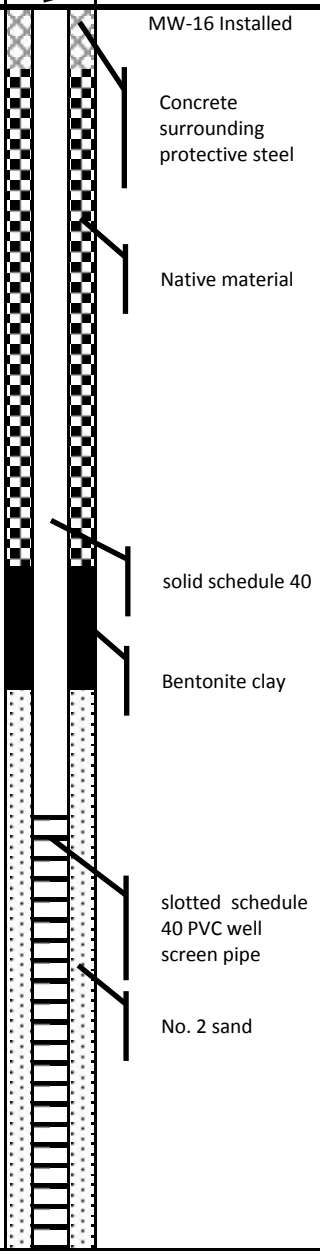
Test Boring No.: **SB-41**
Total Depth: 25 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe 6610 DT
Driller: Andrea Larkin
Inspector: Scott Dietzel

Start Date: 11/21/2011
Finish Date: 11/21/2011
El. Datum: N/A
G.S. Elevation: 0.00
Northing: ---
Easting: ---
Longitude: ---
Latitude: ---

Borehole Dia.: 2.25 in.
Depth to Water: 16 ft.
Depth to Rock: N/A ft.
Depth of Well: 23 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
			1		36	0		(FILL) Concrete
1	-1						SP	Orange-brown silty fine SAND, some gravel
2	-2							
3	-3							
4	-4							
5	-5		2		28	0	SP	Same as above (SAA)
6	-6							
7	-7							Orange-brown SAND, mostly medium sand, some fine sand, trace coarse sand, loose
8	-8							
9	-9							
10	-10		3		36	0.7	SP	Light brown SAND, mostly medium sand, some fine sand, trace coarse sand
11	-11							
12	-12							
13	-13							
14	-14							grades to light brown
15	-15		4		32	5	SP	SAA, wet
16	-16							gray stained 16-17 ft, strong odor
17	-17							orange brown medium sand 17-20 ft.
18	-18							
19	-19							



Field Notes, Well Notes, Comments:

STANDARD NOTES: 1. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
2. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

ADDITIONAL NOTES:

DRILLING INFORMATION
Method: Direct push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **SB-41**
Total Depth: 25 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:	Well Diagram	Field Notes, Well Notes, Comments:
			5		36	0	SP	SAA		
21	-21									
22	-22									
23	-23									
24	-24									
25	-25							Exploration terminated at 25 ft. bgs		
26	-26									
27	-27									
28	-28									
29	-29									
30	-30									
31	-31									
32	-32									
33	-33									
34	-34									
35	-35									
36	-36									
37	-37									
38	-38									
39	-39									
40	-40									
41	-41									
42	-42									
43	-43									
44	-44									

ADDITIONAL NOTES:

TEST BORING AND WELL LOG

THE Chazen COMPANIES
21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **SB-42**
Total Depth: 25 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe 6610 DT
Driller: Andrea Larkin
Inspector: Scott Dietzel

Start Date:	11/21/2011	**Northing:**	---
Finish Date:	11/21/2011	**Easting:**	---
El. Datum:	N/A	**Longitude:**	---
G.S. Elevation:	0.00	**Latitude:**	---

Borehole Dia.:	2.25	in.
Depth to Water:	16	ft.
Depth to Rock:	N/A	ft.
Depth of Well:	23	ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
			1		30	0		(FILL) Concrete
1	-1						SP	2.5 ft FILL, orange-brown fine sand, little medium sand, piece of rubber at 3 feet.
2	-2							
3	-3							
4	-4							
5	-5		2		30	0	SP	Brown silty fine SAND
6	-6							
7	-7							
8	-8							
9	-9							
10	-10		3		48	0	SP	Light brown SAND, mostly medium sand, some fine sand, trace coarse sand
11	-11							
12	-12							
13	-13							
14	-14							
15	-15		4		36	0	SP	SAA, wet
16	-16							
17	-17							
18	-18							
19	-19							

Field Notes, Well Notes, Comments:

STANDARD NOTES: 1. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
2. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

ADDITIONAL NOTES:

DRILLING INFORMATION
Method: Direct push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **SB-42**
Total Depth: 25 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:	Well Diagram	Field Notes, Well Notes, Comments:
			5		48	0	SP	SAA		
21	-21									
22	-22									
23	-23									
24	-24									
25	-25							Exploration terminated at 25 ft. bgs		
26	-26									
27	-27									
28	-28									
29	-29									
30	-30									
31	-31									
32	-32									
33	-33									
34	-34									
35	-35									
36	-36									
37	-37									
38	-38									
39	-39									
40	-40									
41	-41									
42	-42									
43	-43									
44	-44									

ADDITIONAL NOTES:

TEST BORING AND WELL LOG

THE Chazen COMPANIES
21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **SB-43**
Total Depth: 25 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe 6610 DT
Driller: Andrea Larkin
Inspector: Scott Dietzel

Start Date:	11/22/2011	**Northing:**	---
Finish Date:	11/22/2011	**Easting:**	---
El. Datum:	N/A	**Longitude:**	---
G.S. Elevation:	0.00	**Latitude:**	---

Borehole Dia.:	2.25	in.
Depth to Water:	16	ft.
Depth to Rock:	N/A	ft.
Depth of Well:	23	ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
			1		36	23.7		(FILL) Concrete
1	-1						SP	Brown silty fine sand (FILL), little medium sand
2	-2							
3	-3							
4	-4							
5	-5		2		48	237	SP	Gray stained, silty fine SAND, little medium sand, slight odor
6	-6							
7	-7							Light brown SAND, mostly medium sand, some fine sand
8	-8							
9	-9							
10	-10		3		48	73.9	SP	Same as above (SAA)
11	-11							
12	-12							
13	-13							
14	-14							
15	-15		4		60	2629	SP	SAA, wet
16	-16							
17	-17							Stained gray at 17 ft bgs
18	-18							
19	-19							

Well Diagram

Field Notes, Well Notes, Comments:

MW-18 Installed
Concrete surrounding protective steel
Native material
solid schedule 40
Bentonite clay
slotted schedule 40 PVC well screen pipe
No. 2 sand

STANDARD NOTES: 1. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
2. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

DRILLING INFORMATION
Method: Direct push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

ADDITIONAL NOTES:

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **SB-43**
Total Depth: 25 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:	Well Diagram	Field Notes, Well Notes, Comments:
			5		48	2008	SP	SAA		
21	-21									
22	-22									
23	-23									
24	-24									
25	-25							Exploration terminated at 25 ft. bgs		
26	-26									
27	-27									
28	-28									
29	-29									
30	-30									
31	-31									
32	-32									
33	-33									
34	-34									
35	-35									
36	-36									
37	-37									
38	-38									
39	-39									
40	-40									
41	-41									
42	-42									
43	-43									
44	-44									

ADDITIONAL NOTES:

TEST BORING AND WELL LOG

THE Chazen COMPANIES
21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **SB-44**
Total Depth: 25 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe 6610 DT
Driller: Andrea Larkin
Inspector: Scott Dietzel

Start Date: 11/22/2011
Finish Date: 11/22/2011
El. Datum: N/A
G.S. Elevation: 0.00
Northing: ---
Easting: ---
Longitude: ---
Latitude: ---

Borehole Dia.: 2.25 in.
Depth to Water: 16 ft.
Depth to Rock: N/A ft.
Depth of Well: 23 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
			1		48	19.5		(FILL) Concrete
1	-1						SP	Brown silty fine sand (FILL), little medium sand, some silt
2	-2							
3	-3							
4	-4							
5	-5		2		48	1.3	SP	Same as above (SAA)
6	-6							
7	-7							Stained gray at 6-7 ft.
8	-8							
9	-9							Light brown SAND, mostly medium sand, some fine sand, trace, coarse sand
10	-10		3		50	0	SP	SAA
11	-11							
12	-12							
13	-13							
14	-14							
15	-15		4		36	2175	SP	SAA
16	-16							stained gray, strong gasoline-like odor
17	-17							
18	-18							
19	-19							

Well Diagram

Field Notes, Well Notes, Comments:

MW-19 Installed
Concrete surrounding protective steel
Native material
solid schedule 40
Bentonite clay
slotted schedule 40 PVC well screen pipe
No. 2 sand

STANDARD NOTES: 1. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
2. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

ADDITIONAL NOTES:

DRILLING INFORMATION
Method: Direct push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **SB-44**
Total Depth: 25 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:	Well Diagram	Field Notes, Well Notes, Comments:
			5		49	1373	SP	SAA		
21	-21									
22	-22							grades to orange-brown SAND		
23	-23									
24	-24									
25	-25							Exploration terminated at 25 ft. bgs		
26	-26									
27	-27									
28	-28									
29	-29									
30	-30									
31	-31									
32	-32									
33	-33									
34	-34									
35	-35									
36	-36									
37	-37									
38	-38									
39	-39									
40	-40									
41	-41									
42	-42									
43	-43									
44	-44									

ADDITIONAL NOTES:

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **SB-45**
Total Depth: 25 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe 6610 DT
Driller: Andrea Larkin
Inspector: Scott Dietzel

Start Date: 11/22/2011
Finish Date: 11/22/2011
El. Datum: N/A
G.S. Elevation: 0.00
Northing: ---
Easting: ---
Longitude: ---
Latitude: ---

Borehole Dia.: 2.25 in.
Depth to Water: 16 ft.
Depth to Rock: N/A ft.
Depth of Well: 23 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
			1		42	1.3		(FILL) Concrete
1	-1						SP	Brown silty fine sand (FILL), little gravel
2	-2							
3	-3							
4	-4							
5	-5		2		45	6.9	SP	Same as above (SAA)
6	-6							
7	-7							Stained gray at 6-7 ft.
8	-8							
9	-9							Light brown SAND, mostly medium sand, some fine sand, trace, coarse sand
10	-10		3		60	5.5	SP	SAA
11	-11							
12	-12							
13	-13							
14	-14							Brown, silty fine SAND, some medium sand
15	-15		4		48	2049	SP	SAA
16	-16							stained gray, strong gasoline-like odor 16-20 ft.
17	-17							
18	-18							
19	-19							

Well Diagram

Field Notes, Well Notes, Comments:

MW-20 Installed
Concrete surrounding protective steel
Native material
solid schedule 40
Bentonite clay
slotted schedule 40 PVC well screen pipe
No. 2 sand

STANDARD NOTES: 1. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
2. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

ADDITIONAL NOTES:

DRILLING INFORMATION
Method: Direct push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: SB-45
Total Depth: 25 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:	Well Diagram	Field Notes, Well Notes, Comments:
			5		60	1184	SP	SAA		
21	-21									
22	-22							grades to orange-brown SAND		
23	-23									
24	-24					75.1				
25	-25							Exploration terminated at 25 ft. bgs		
26	-26									
27	-27									
28	-28									
29	-29									
30	-30									
31	-31									
32	-32									
33	-33									
34	-34									
35	-35									
36	-36									
37	-37									
38	-38									
39	-39									
40	-40									
41	-41									
42	-42									
43	-43									
44	-44									

ADDITIONAL NOTES:

TEST BORING AND WELL LOG

THE Chazen COMPANIES
21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **SB-46**
Total Depth: 25 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe 6610 DT
Driller: Andrea Larkin
Inspector: Scott Dietzel

Start Date: 11/23/2011
Finish Date: 11/23/2011
El. Datum: N/A
G.S. Elevation: 0.00
Northing: ---
Easting: ---
Longitude: ---
Latitude: ---

Borehole Dia.: 2.25 in.
Depth to Water: 16 ft.
Depth to Rock: N/A ft.
Depth of Well: 23 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
			1		30	0		(FILL) Concrete
1	-1						SP	Orange-brown silty fine sand, little crushed rock (FILL)
2	-2							
3	-3							
4	-4							
5	-5		2		42	0	SP	Same as above (SAA)
6	-6							Orange-brown SAND, mostly medium sand, some fine sand, trace coarse sand
7	-7							
8	-8							grades to light brown
9	-9							
10	-10		3		48	0	SP	SAA
11	-11							
12	-12							
13	-13							
14	-14							
15	-15		4		60	0	SP	SAA, wet
16	-16							
17	-17							
18	-18							
19	-19							

Well Diagram

Field Notes, Well Notes, Comments:

MW-21 Installed
Concrete surrounding protective steel
Native material
solid schedule 40
Bentonite clay
slotted schedule 40 PVC well screen pipe
No. 2 sand

STANDARD NOTES: 1. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
2. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

ADDITIONAL NOTES:

DRILLING INFORMATION
Method: Direct push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **SB-46**
Total Depth: 25 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:	Well Diagram	Field Notes, Well Notes, Comments:
			5		60	0	SP	SAA		
21	-21									
22	-22									
23	-23									
24	-24									
25	-25							Exploration terminated at 25 ft. bgs		
26	-26									
27	-27									
28	-28									
29	-29									
30	-30									
31	-31									
32	-32									
33	-33									
34	-34									
35	-35									
36	-36									
37	-37									
38	-38									
39	-39									
40	-40									
41	-41									
42	-42									
43	-43									
44	-44									

ADDITIONAL NOTES:

TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **IW-1**
Total Depth: 23 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe 6610 DT
Driller: Andrea Larkin
Inspector: Scott Dietzel

Start Date:	11/23/2011	**Northing:**	---
Finish Date:	11/23/2011	**Easting:**	---
El. Datum:	N/A	**Longitude:**	---
G.S. Elevation:	0.00	**Latitude:**	---

Borehole Dia.:	3.25	in.
Depth to Water:	15	ft.
Depth to Rock:	N/A	ft.
Depth of Well:	23	ft.

Depth *(Feet)*	Elevation *(Feet)*	Casing Data	Sample No.	Sample Data	Recovery *(Inches)*	PID *(ppm)*	Group Symbol
1	-1						
2	-2						
3	-3						
4	-4						
5	-5						
6	-6						
7	-7						
8	-8						
9	-9						
10	-10						
11	-11						
12	-12						
13	-13						
14	-14						
15	-15						
16	-16						
17	-17						
18	-18						
19	-19						

Stratum and Field Descriptions:

Replaced Monitoring well MW-14 with Injection well IW-1
No samples collected (See MW-14 log)

Well Diagram

Field Notes, Well Notes, Comments:

STANDARD NOTES: 1. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
2. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

DRILLING INFORMATION
Method: Direct push

ADDITIONAL NOTES:

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

TEST BORING AND WELL LOG

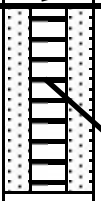
THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **IW-1**
Total Depth: 23 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:	Well Diagram	Field Notes, Well Notes, Comments:
								SAA		
21	-21									
22	-22									
23	-23									
24	-24									
25	-25									
								Exploration terminated at 25 ft. bgs		
26	-26									
27	-27									
28	-28									
29	-29									
30	-30									
31	-31									
32	-32									
33	-33									
34	-34									
35	-35									
36	-36									
37	-37									
38	-38									
39	-39									
40	-40									
41	-41									
42	-42									
43	-43									
44	-44									



0.020-inch slotted schedule 40 PVC well

ADDITIONAL NOTES:

TEST BORING AND WELL LOG

THE Chazen COMPANIES
21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **IW-2**
Total Depth: 23 ft.

Contractor: Aquifer Drilling and Testing
Drill Rig: Geoprobe 6610 DT
Driller: Andrea Larkin
Inspector: Scott Dietzel

Start Date:	11/23/2011	**Northing:**	---
Finish Date:	11/23/2011	**Easting:**	---
El. Datum:	N/A	**Longitude:**	---
G.S. Elevation:	0.00	**Latitude:**	---

Borehole Dia.:	3.25	in.
Depth to Water:	15	ft.
Depth to Rock:	N/A	ft.
Depth of Well:	23	ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:
1	-1							No samples collected
2	-2							
3	-3							
4	-4							
5	-5							
6	-6							
7	-7							
8	-8							
9	-9							
10	-10							
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
16	-16							
17	-17							
18	-18							
19	-19							

Well Diagram

Field Notes, Well Notes, Comments:

STANDARD NOTES: 1. Samples classified in accordance with ASTM D-2488 unless otherwise noted.
2. Test Boring Log Page 1: 0 - 20 feet Each subsequent page: Additional 25 feet.

ADDITIONAL NOTES:

DRILLING INFORMATION
Method: Direct push

	Casing	Sample	Core
Type:			
Diam.:			
Weight:			
Fall:			

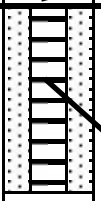
TEST BORING AND WELL LOG

THE Chazen COMPANIES

21 Fox Street
Poughkeepsie, NY
12601

PROJECT: Church of God - Linden Plaza
LOCATION: Hegeman and New Lots Avenues, Brooklyn, NY
CLIENT: The Church of God of East Flatbush
PROJECT NO.: 20918.01

Test Boring No.: **IW-2**
Total Depth: 23 ft.

Depth (Feet)	Elevation (Feet)	Casing Data	Sample No.	Sample Data	Recovery (Inches)	PID (ppm)	Group Symbol	Stratum and Field Descriptions:	Well Diagram	Field Notes, Well Notes, Comments:
								SAA		0.020-inch slotted schedule 40 PVC well
21	-21									
22	-22									
23	-23									
24	-24									
25	-25							Exploration terminated at 25 ft. bgs		
26	-26									
27	-27									
28	-28									
29	-29									
30	-30									
31	-31									
32	-32									
33	-33									
34	-34									
35	-35									
36	-36									
37	-37									
38	-38									
39	-39									
40	-40									
41	-41									
42	-42									
43	-43									
44	-44									

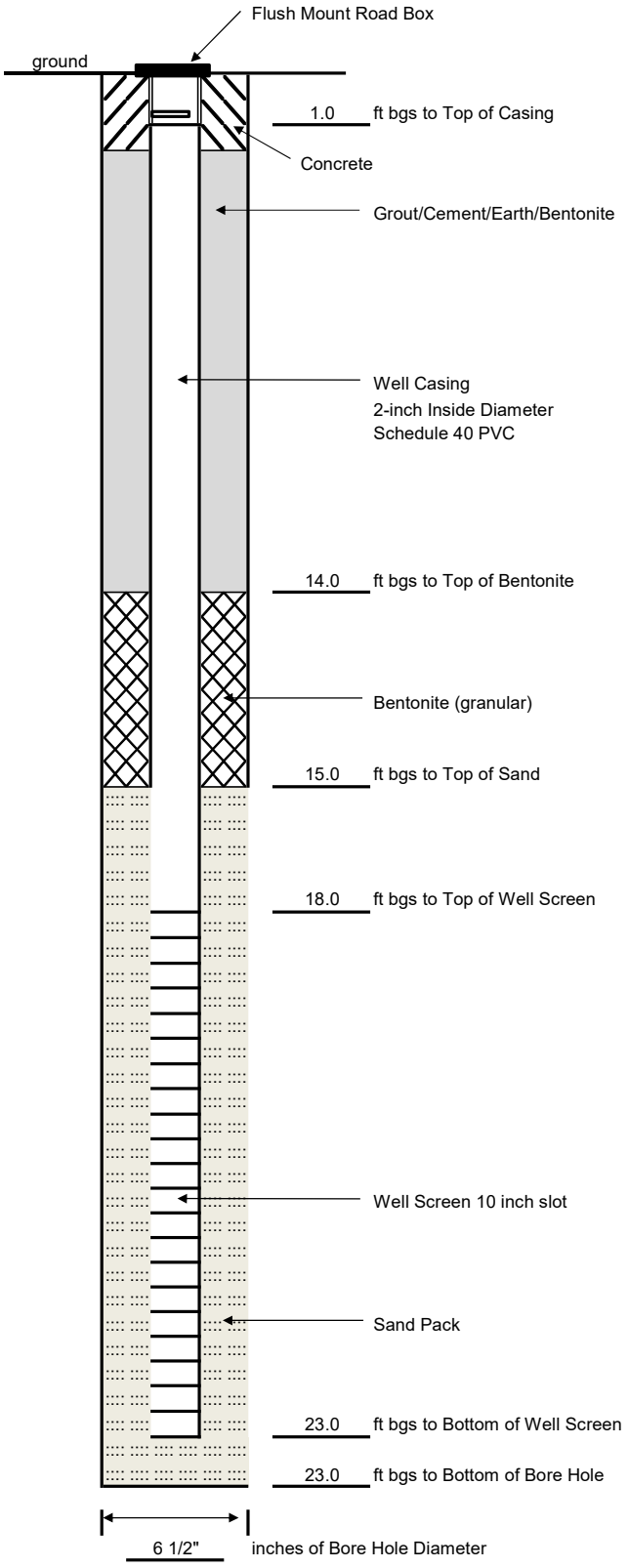
ADDITIONAL NOTES:

APPENDIX D

Well Construction Logs

WELL CONSTRUCTION LOG

Well No.: MW-26 Shallow



Project: Ebenezer Plaza 2

Address: 96 New Lots Ave

Town/City: Brooklyn **State:** NY

Project No. 20918.07 **County:** Kings

Installation Date(s): 12/22/2022

Drilling Method: Direct Push

Drilling Contractor: Ephase 2 **Driller:** Luke Reiss

Drill Rig: Geoprobe Model 6712DT

Drilling Fluid: None

Datum: _____ **Elevation:** _____ ft

Well Development Information

finished with protective flush mount well cover, j-plug

Static Water Level: _____ **feet from top of casing/ground/other**

Fluid Lost During Drilling: 0 **gallons**

Water Removed During Development: _____ **gallons**

Date(s) of Development: _____

Purging Method: Peristaltic pump **Sampling Method:** N/A

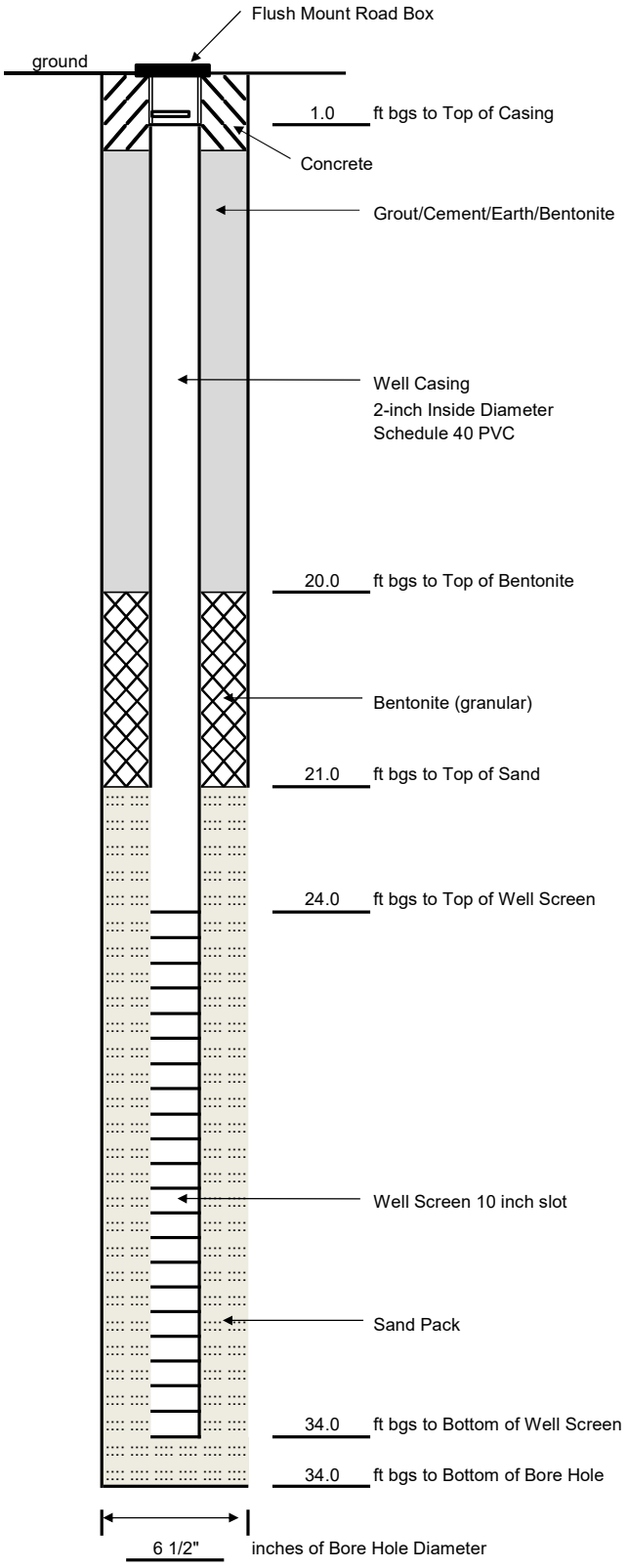
Well Cover Size/Tools Needed to Open: 1/2" socket

Notes: ft = feet, bgs = below the ground surface

Prepared By: Owen Hennigan

WELL CONSTRUCTION LOG

Well No.: MW-26 Deep



Project: Ebenezer Plaza 2

Address: 96 New Lots Ave

Town/City: Brooklyn **State:** NY

Project No. 20918.07 **County:** Kings

Installation Date(s): 12/22/2022

Drilling Method: Direct Push

Drilling Contractor: Ephase 2 **Driller:** Luke Reiss

Drill Rig: Geoprobe Model 6712DT

Drilling Fluid: None

Datum: _____ **Elevation:** _____ ft

Well Development Information

finished with protective flush mount well cover, j-plug

Static Water Level: _____ **feet from top of casing/ground/other**

Fluid Lost During Drilling: 0 **gallons**

Water Removed During Development: _____ **gallons**

Date(s) of Development: _____

Purging Method: Peristaltic pump **Sampling Method:** N/A

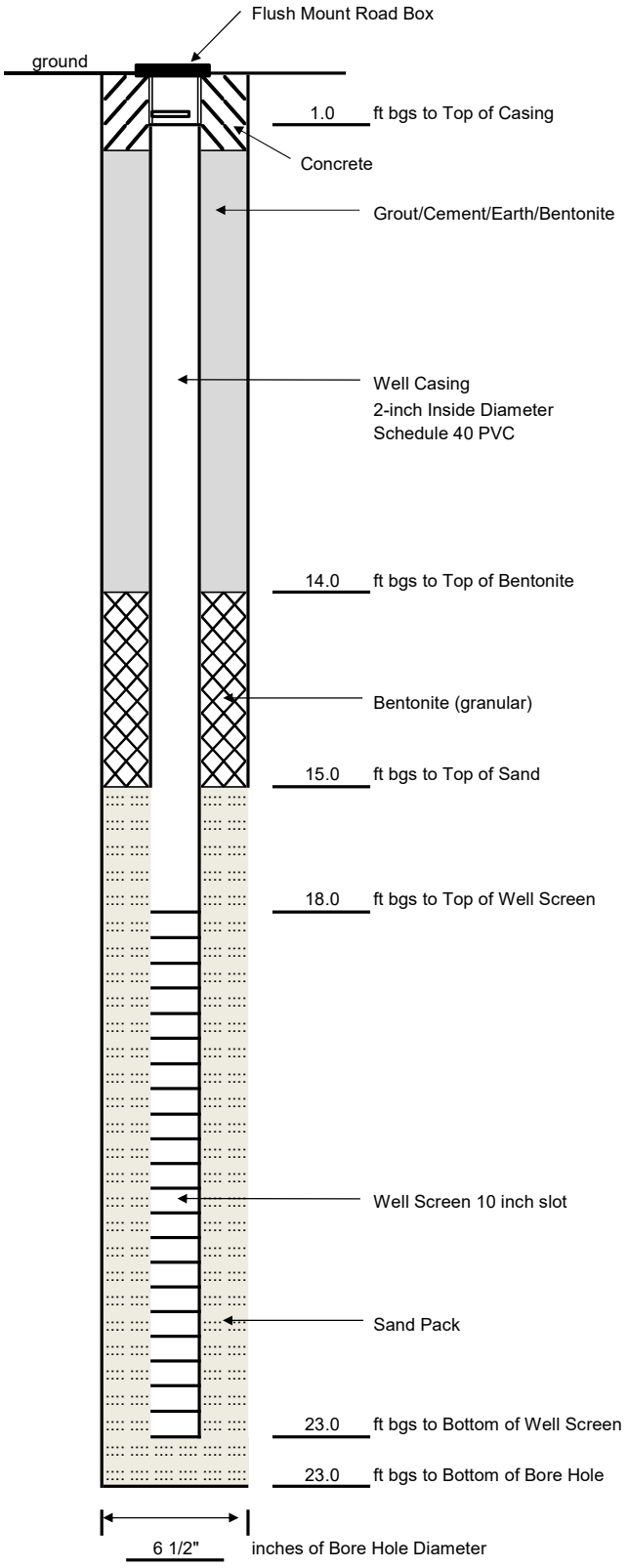
Well Cover Size/Tools Needed to Open: 1/2" socket

Notes: ft = feet, bgs = below the ground surface

Prepared By: Owen Hennigan

WELL CONSTRUCTION LOG

Well No.: MW-28 Shallow



Project: Ebenezer Plaza 2

Address: 591 Christopher Ave

Town/City: Brooklyn **State:** NY

Project No. 20918.07 **County:** Kings

Installation Date(s): 5/31/2023

Drilling Method: Direct Push

Drilling Contractor: Ephase 2 **Driller:** Luke Reiss

Drill Rig: Geoprobe Model 6712DT

Drilling Fluid: None

Datum: _____ **Elevation:** _____ ft

Well Development Information

finished with protective flush mount well cover, j-plug

Static Water Level: 9.5 **feet from top of casing/ground/other**

Fluid Lost During Drilling: 0 **gallons**

Water Removed During Development: 10 **gallons**

Date(s) of Development: 6/1/2023

Purging Method: Peristaltic pump **Sampling Method:** N/A

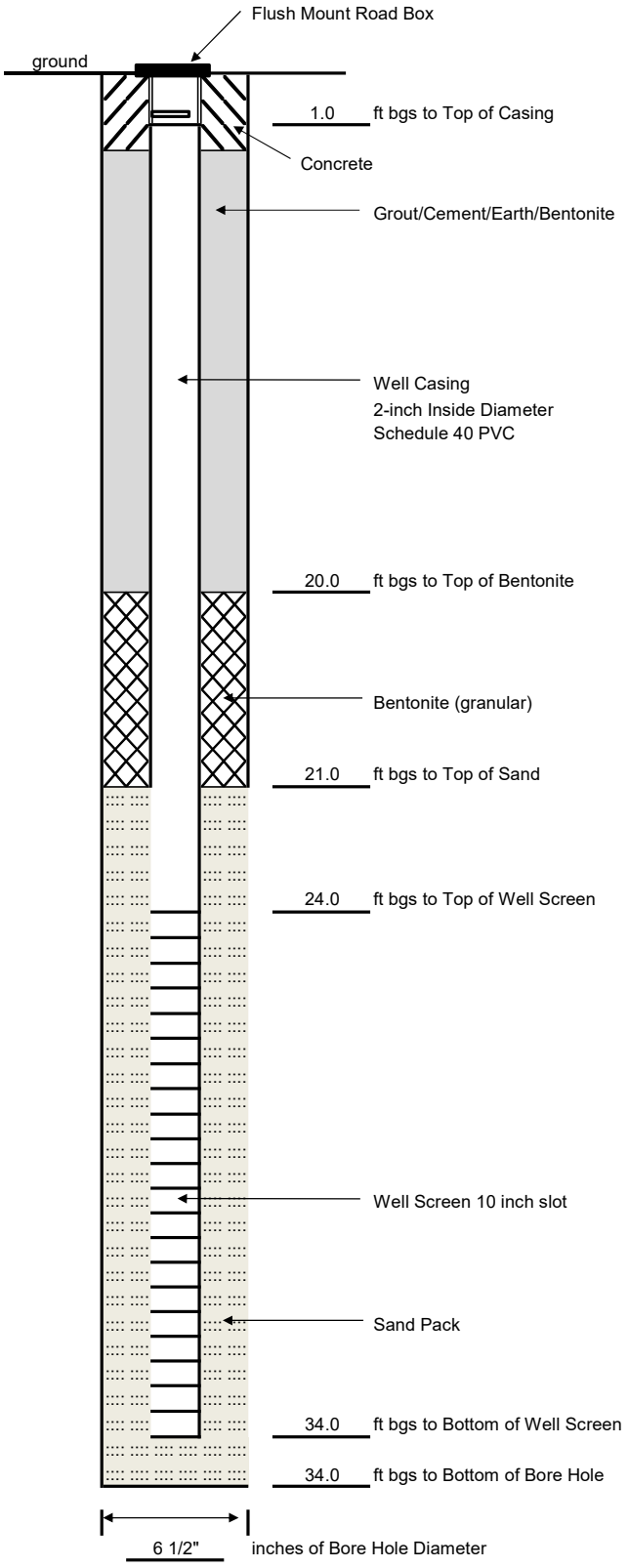
Well Cover Size/Tools Needed to Open: 1/2" socket

Notes: ft = feet, bgs = below the ground surface

Prepared By: Owen Hennigan

WELL CONSTRUCTION LOG

Well No.: MW-28 Deep



Project: Ebenezer Plaza 2

Address: 591 Christopher ave

Town/City: Brooklyn **State:** NY

Project No. 20918.07 **County:** Kings

Installation Date(s): 5/31/2023

Drilling Method: Direct Push

Drilling Contractor: Ephase 2 **Driller:** Luke Reiss

Drill Rig: Geoprobe Model 6712DT

Drilling Fluid: None

Datum: _____ **Elevation:** _____ ft

Well Development Information

finished with protective flush mount well cover, j-plug

Static Water Level: 9.5 **feet from top of casing/ground/other**

Fluid Lost During Drilling: 0 **gallons**

Water Removed During Development: 20 **gallons**

Date(s) of Development: 6/1/2023

Purging Method: Peristaltic pump **Sampling Method:** N/A

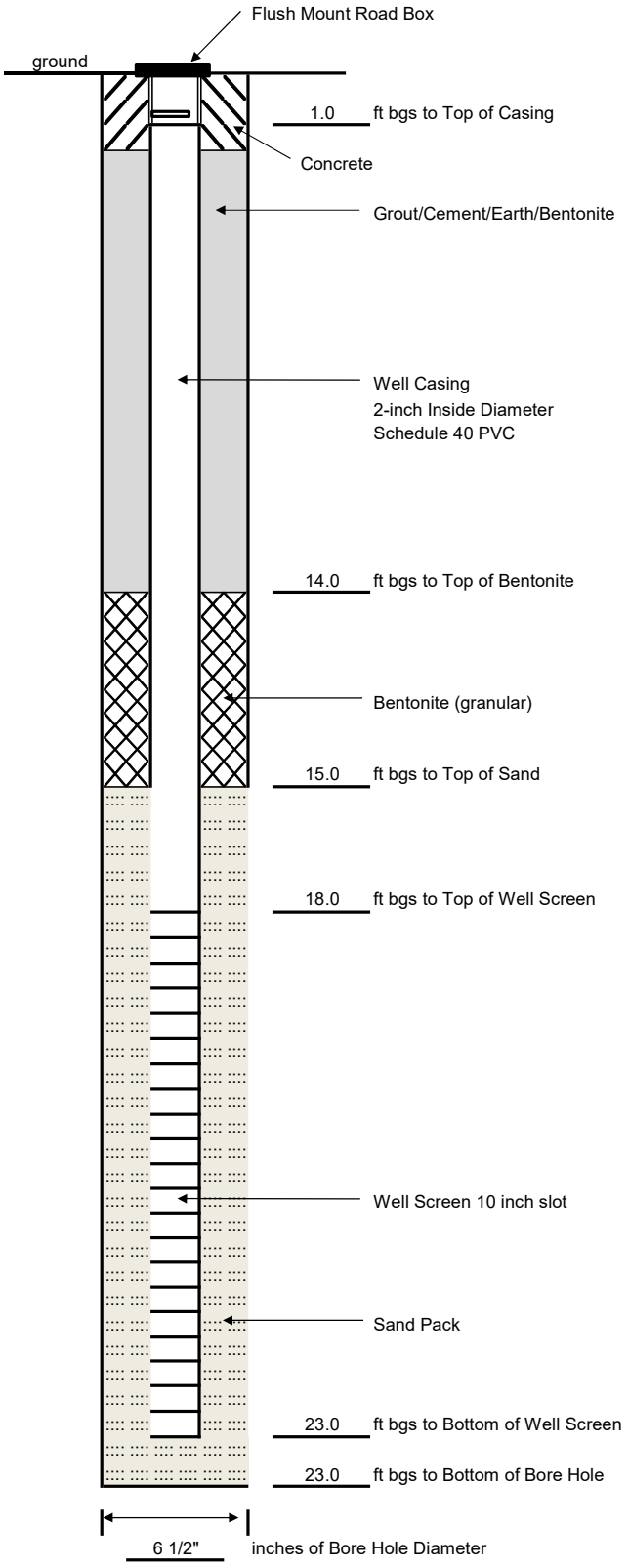
Well Cover Size/Tools Needed to Open: 1/2" socket

Notes: ft = feet, bgs = below the ground surface

Prepared By: Owen Hennigan

WELL CONSTRUCTION LOG

Well No.: MW-27 Shallow



Project: Ebenezer Plaza 2

Address: Intersection of Sackman st and Hegeman ave

Town/City: Brooklyn **State:** NY

Project No. 20918.07 **County:** Kings

Installation Date(s): 12/7/2022

Drilling Method: Direct Push

Drilling Contractor: Ephase 2 **Driller:** Luke Reiss

Drill Rig: Geoprobe Model 6712DT

Drilling Fluid: None

Datum: _____ **Elevation:** _____ ft

Well Development Information

finished with protective flush mount well cover, j-plug

Static Water Level: _____ **feet from top of casing/ground/other**

Fluid Lost During Drilling: 0 **gallons**

Water Removed During Development: 10 **gallons**

Date(s) of Development: _____

Purging Method: Peristaltic pump **Sampling Method:** N/A

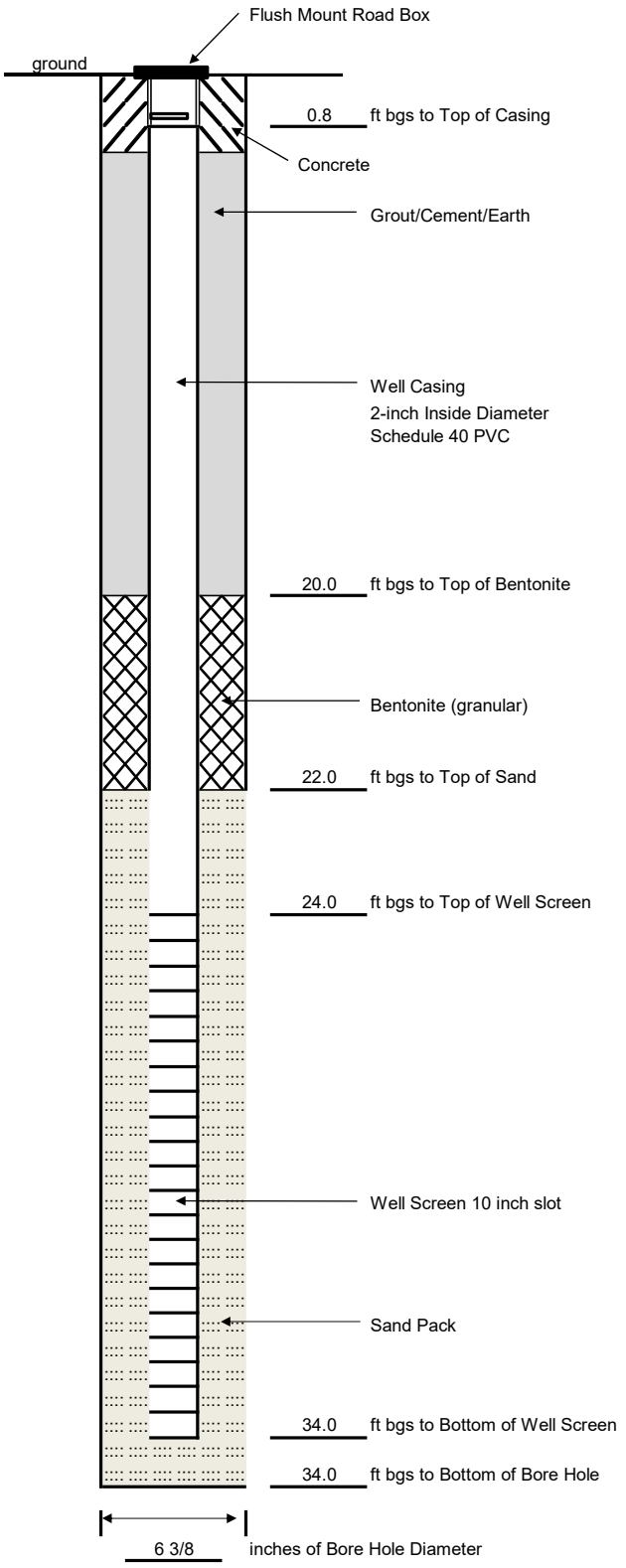
Well Cover Size/Tools Needed to Open: 1/2" socket

Notes: ft = feet, bgs = below the ground surface

Prepared By: Owen Hennigan

WELL CONSTRUCTION LOG

Well No.: MW-27 Deep



Project: Ebenezer Plaza II

Address: 589 Christopher Avenue

Town/City: Brooklyn **State:** NY

Project No. 20918.07 **County:** Kings

Installation Date(s): 12/6/2022

Drilling Method: 4.25" Hollow Stem Augers

Drilling Contractor: Ephase 2 **Driller:** Luke Reiss

Drill Rig: Geoprobe 6712 DT

Drilling Fluid: N/A

Datum: N/A **Elevation:** N/A ft

Well Development Information

finished with protective flush mount well cover, j-plug

Static Water Level: _____ **feet from top of casing/ground/other**

Fluid Lost During Drilling: N/A **gallons**

Water Removed During Development: _____ **gallons**

Date(s) of Development: _____

Purging Method: peristaltic pump **Sampling Method:** _____

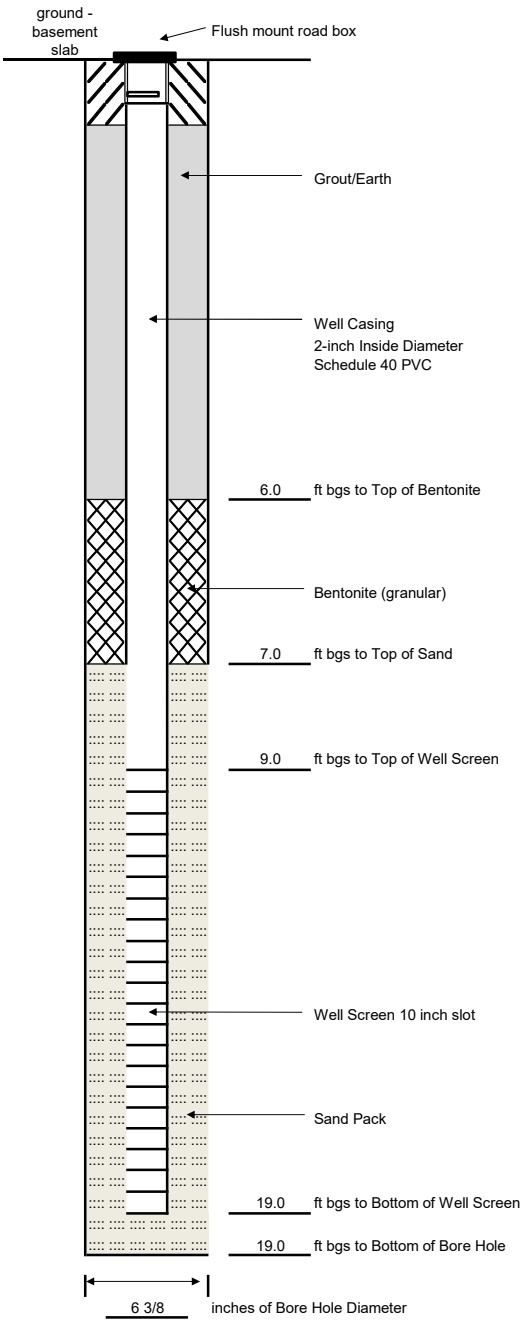
Well Cover Size/Tools Needed to Open: _____

Notes: ft = feet, bgs = below the ground surface

Prepared By: _____

WELL CONSTRUCTION LOG

Well No.: **MW-18R Deep**



Project: Ebenezer Plaza II

Address: 589 Christopher Avenue

Town/City: Brooklyn **State:** NY

Project No. 20918.07 **County:** Kings

Installation Date(s): 8/8/2022

Drilling Method: 4.25" Hollow Stem Augers

Drilling Contractor: Lakewood **Driller:**

Drill Rig: Geoprobe 6712DT

Drilling Fluid: N/A

Datum: N/A **Elevation:** N/A ft

Well Development Information

finished with protective stick-up well cover, j-plug

Static Water Level: _____ **feet from top of casing/ground/other**

Fluid Lost During Drilling: N/A **gallons**

Water Removed During Development: _____ **gallons**

Date(s) of Development:

Purging Method: Pump **Sampling Method:**

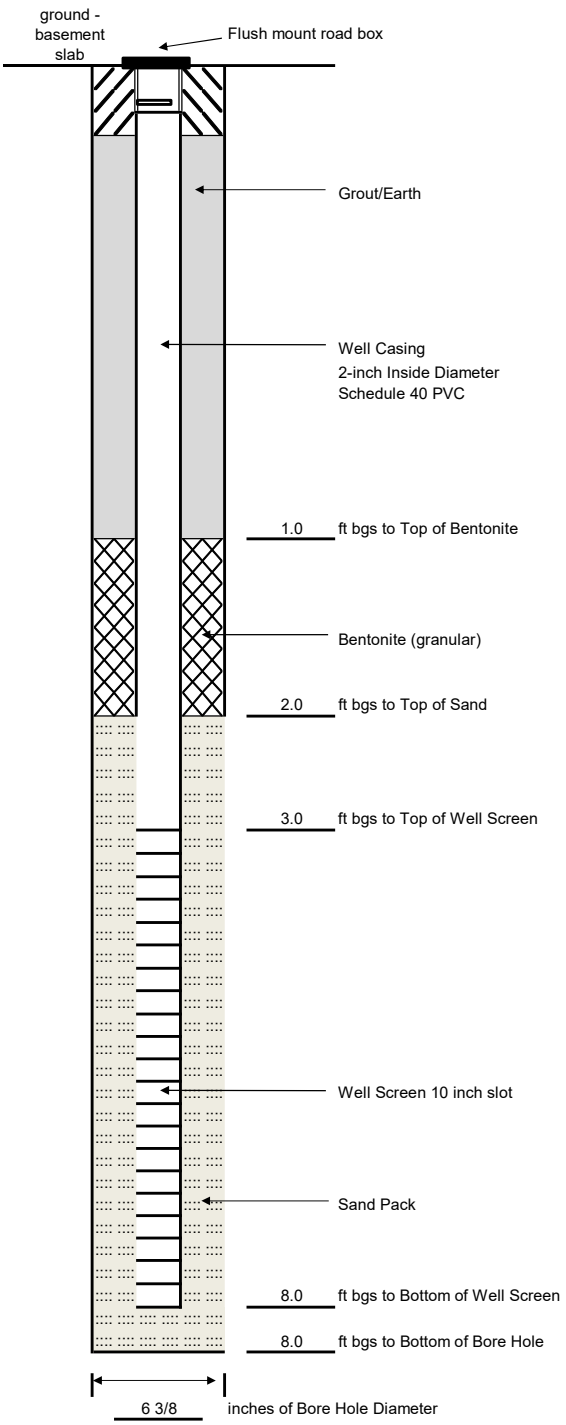
Well Cover Size/Tools Needed to Open: N/A

Notes: ft = feet, bgs = below the ground surface

Prepared By: Evan Ward

WELL CONSTRUCTION LOG

Well No.: 18R Shallow



Project: Ebenezer Plaza II

Address: 589 Christopher Avenue

Town/City: Brooklyn **State:** NY

Project No. 20918.07 **County:** Kings

Installation Date(s): 8/8/2022

Drilling Method: 4.25" Hollow Stem Augers

Drilling Contractor: Lakewood **Driller:**

Drill Rig: Geoprobe 6712DT

Drilling Fluid: N/A

Datum: N/A **Elevation:** N/A ft

Well Development Information

finished with protective stick-up well cover, j-plug

Static Water Level: _____ **feet from top of casing/ground/other**

Fluid Lost During Drilling: N/A **gallons**

Water Removed During Development: _____ **gallons**

Date(s) of Development:

Purging Method: Pump **Sampling Method:**

Well Cover Size/Tools Needed to Open: N/A

Notes: ft = feet, bgs = below the ground surface

Prepared By: Evan Ward

APPENDIX E

Excavation Work Plan

APPENDIX E – EXCAVATION WORK PLAN (EWP)

E-1 NOTIFICATION

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

Table A: Notifications*

Name	Contact Information
Aaron Fischer (NYSDEC Project Manager)	Phone: 518-402-9805 Email: Aaron.fischer@dec.ny.gov
Heidi Dudek (NYSDEC Section Chief)	Phone: 518-402-9813 Email: Heidi.dudek@dec.ny.gov
Gerard Burke (NYSDEC Director, Remedial Bureau B)	Phone: 518-402-9814 Email: Gerard.burke@dec.ny.gov
Scarlett McLaughlin (NYSDOH Project Manager)	Phone: 518-402-7860 Email: Scarlett.mclaughlin@health.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 and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;

- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;

- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix F of this SMP;

- Identification of disposal facilities for potential waste streams; and

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

E-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all excavations into known or potentially contaminated material (remaining contamination). 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 Section E-6 and E-7 of this Appendix.

E-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.

E-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional or person under their supervision 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.

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).

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.

E-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 tight-fitting covers. 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 will be specified in the Change of Use or 15-day notification. 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; (g) community input.

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.

E-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 in accordance with all local, State (including 6NYCRR Part 360) 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. Unregulated off-site management of materials from this site will not occur without formal NYSDEC 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, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: 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, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

E-7 MATERIALS REUSE ON-SITE

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material 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 a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

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.

E-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 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.

E-9 COVER SYSTEM RESTORATION

The Site has attained a Track 2 cleanup and thus the top 15-ft of soil was remediated to Restricted Residential Soil Cleanup Objectives (RRSCOs) and as such, the Site does not have a formal cover system. However, to manage remaining contamination that is left in-place (Section 2.5 of the SMP), the SMP must be implemented when excavations extend beyond the backfill materials that were placed at the Site. In general, the surface material types are broken down into two distinct areas:

1. Building Areas – The building areas were excavated to 15-ft. bgs and quarry stone was placed prior to construction of the SSDS and building basement slab. Remaining contamination is not accessible since it is located beneath the building slab.
2. Courtyard Area – The courtyard area was excavated between 6 ft. and 15 ft. depending on the location. This area was backfilled to grade such that the top 15-ft. of material meets RRSCOs. As such, remaining contamination in this area is below 15-ft bgs.

After the completion of soil removal and any other invasive activities, the backfill material will be restored in a manner as defined in the SMP. If the type of backfill material changes from that which exists prior to the excavation, as shown on Figure 9, this will constitute a modification of the backfill materials as-built 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.

E-10 BACKFILL FROM OFF-SITE SOURCES

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

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

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

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

E-11 STORMWATER POLLUTION PREVENTION

Future development plans and activities will be based on actual planned projects, and any legally required Stormwater Pollution Prevention Plan (SWPPP) will be implemented. The SWPPP will conform to the requirements of NYSDEC Division of Water Guidelines and NYS regulations.

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.

E-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.

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, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone 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.

E-13 COMMUNITY AIR MONITORING PLAN

A figure showing the location of air sampling stations based on generally prevailing wind conditions is shown in Figure 11. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

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

E-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site, for residents or tenants on the property. Specific odor control methods to be used on a routine basis will include limiting exposed soil area, covering exposed soil, the application of odor control foam or other products applies directly to the exposed soil, or odor neutralizing. 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.

E-15 DUST CONTROL PLAN

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

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

- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

APPENDIX F

HASP and CAMP

Health and Safety Plan
NYSDEC BCP Site No. C224241

Location:

Ebenezer Plaza 2
583 Christopher Ave
Brooklyn, New York

LaBella Project No. 20918.07

March 2024

Table of Contents

TABLE OF CONTENT
Continued

Appendices

1.0 INTRODUCTION

The purpose of this Health and Safety Plan (HASP) is to provide guidelines for responding to potential health and safety issues that may be encountered during work associated with construction and remedial activities located at the Ebenezer Plaza II site located at 583 Christopher Ave, Brooklyn, Kings County, New York. This HASP only reflects the policies of LaBella Associates D.P.C. The requirements of this HASP are applicable to all approved LaBella personnel at the work site. This document's project specifications are to be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP were developed in general accordance with 29 CFR 1910 and 29 CFR 1926 and do not replace or supersede any regulatory requirements of the USEPA, NYSDEC, OSHA or and other regulatory body.

This HASP presents guidelines to minimize the risk of injury to project personnel, and to provide rapid response in the event of injury. The HASP is applicable only to activities of approved LaBella personnel and their authorized visitors. The Project Manager shall implement the provisions of this HASP for the duration of the project. It is the responsibility of LaBella employees to follow the requirements of this HASP, and all applicable company safety procedures.

It should be noted that lead, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, ethyl benzene, and naphthalene are the primary remaining contaminants at the Site. As such, these VOCs should be taken into consideration during implementation of the HASP.

The HASP was developed utilizing previous environmental information that has been generated at the Site that are summarized in environmental reports. These environmental reports and documents are listed in Section 14.0.

1.1 Site Location and Description

The site is located in the Borough of Brooklyn, Kings County, New York and is identified as Block 3861, Lot 1 on the Kings County Tax Map. The site is an approximately 0.83-acre area and is bounded by New Lots Avenue to the north, Hegeman Avenue to the south, Sackman Street to the east, and Christopher Avenue to the west. Past commercial site uses include auto-wrecking, repair, and maintenance operations.

The Site is undergoing construction into residential apartment units that will be occupied by tenants upon completion.

2.0 ACTIVITIES COVERED

This HASP addresses all general activities listed below:

- Mobilization/Demobilization
  - Mobilization/demobilization of equipment and supplies
  - Establishment of work zone

- Site Monitoring Activities
  - Subsurface soil boring installation
  - Soil sample collection

- Groundwater sampling
- Soil vapor sampling
- Site inspections

- Construction Activities
  - Subsurface excavations or any other activities that disturb the site surface

3.0 PROJECT ORGANIZATION

This section includes the project organization and structures and establishes specific chain of command responsibilities and communications. The organizational structure shall be reviewed and updated as necessary to reflect the status of project operations.

The LaBella Site Safety Officer will provide general health and safety oversight of the work and conduct work area air monitoring during the soil boring and sampling activities. The health and safety roles for this project include:

- Project Manager
- Site Safety Officer
- Environmental Safety Manager

LaBella's health and safety roles and responsibilities are presented below in Section 3.1.

3.1 Roles and Responsibilities

LaBella is responsible for all work detailed in the project work plan and is also responsible for the health and safety of LaBella employees and will conduct work zone monitoring. Sub-contractors are not anticipated to be utilized for this project. However, specific health and safety roles include:

Project Manager (PM) – responsibilities include the following:

- Ensures implementation of this program
- Conducts periodic inspections
- Participates in incident investigations
- Ensures the HASP has all of the required approvals before any site work is conducted
- Ensures that the Site Safety Officer (SSO) is informed of project changes which require modifications of the site health and safety plan
- Has overall project responsibility for Project Health and Safety.

Site Safety Officer (SSO) - responsibilities include the following:

- Ensures that the HASP is implemented and that all health-and-safety activities identified in site safety plans are conducted and/or implemented
- Ensures that field work is conducted safely and enforces site health and safety rules
- Ensures that adequate communication between field crews and emergency response personnel is maintained
- Ensures that field site personnel have and use proper personal protective equipment
- Investigate and report all accidents/incidents to the PM and to the Environmental Safety Manager (ESM)
- Conducts and documents daily safety briefings

- Stops work if necessary
- Identifies operational changes which require modifications to health-and safety procedures and site safety plans, and ensures that the procedure modifications are implemented and documented through changes to the HASP, with ESM approval.
- Directs and coordinates health-and-safety monitoring activities
- Evaluates air monitoring data relative to site and activity-specific action levels
- Ensures that monitoring instruments are calibrated
- Reports to the ESM to provide summaries of field operations and progress
- Conducts routine safety inspections of the work areas
- Maintains files on all personal monitoring results, laboratory reports, calculations, and air sampling data sheets
- Ensure that all necessary information including emergency phone numbers, hospital directions, and warning signs are kept posted in an area accessible to all site employees
- Maintain a daily list of LaBella workers present on the site

Environmental and Safety Manager (ESM) - responsibilities include the following:

- Provides for the development and approval of the HASP
- Serves as the primary contact to review health and safety matters that may arise
- Approves revised or new safety protocols for field operations
- Coordinates revisions of this HASP with field personnel
- Coordinates upgrading or downgrading of personal protective equipment with the SSO
- Assists in the investigation of all accidents/incidents.

Site Personnel - responsibilities include the following:

- Reports any unsafe or potentially hazardous conditions to the SSO
- Maintains knowledge of the information, instructions and emergency response actions contained in the HASP
- Complies with rules, regulations and procedures as set forth in the HASP and any revisions
- Prevents admittance to work sites by unauthorized personnel
- Inspect all tools and equipment, including personal protective equipment (PPE), prior to use.

A copy of the Site Contact List and Emergency Contacts is provided in Appendix 1.

4.0 PROJECT DESCRIPTION

Site monitoring activities are a requirement of the remedial action performed on the Site. A summary of the monitoring will include the following tasks:

- Site Mobilization/Demobilization
- Groundwater sampling collection and decontamination of equipment
- Soil vapor sampling
- Potential future subsurface excavation and/or subsurface soil boring installation

5.0 POTENTIAL HAZARDS

This section presents an assessment of potential chemical, physical, and biological hazards that may be encountered during the project work tasks.

Nitrile line gloves (or equivalent) and safety glasses should be worn by workers at all times when they are expected to come into contact with subsurface soil.

5.1 Chemical Hazards

The characteristics of compounds that may be encountered at the Site are discussed below in the following subsections for informational purposes. Adherence to the safety and health guidelines in this HASP should reduce the potential for exposure to the compounds discussed below.

5.1.1 Volatile Organic Compounds

** It should be noted that lead, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, ethyl benzene, and naphthalene are the primary remaining contaminants at the Site. As such, these VOCs should be taken into consideration during implementation of the HASP.

These include aromatic compounds such as benzene, toluene, ethylbenzene, and xylenes, which are found in petroleum products, and chlorinated VOCs such as trichloroethene and tetrachloroethene, which are common ingredients in solvents and commercial cleaners. Naturally produced VOCs may also be present including methane and hydrogen sulfide, which are breakdown products of organic materials. Inhaling toxic VOC vapors can be a health hazard, and some VOCs can be flammable if the circumstances are suitable for combustion. In contrast to contaminants such as metals, PAHs, and PCBs, VOCs generate soil gas vapors that may be a source of exposure even if the source (e.g., VOC-impacted soil or groundwater) is not directly exposed. During construction, soil disturbance, or disturbance of VOC containing materials may release VOCs into the air and produce toxic or oxygen-deficient atmospheres.

5.1.2 Heavy Metals

These are used in metal works, and can be present in paint, ink, petroleum products, coal ash, waste water, and mechanical waste fluids. Certain heavy metals can be toxic to humans at elevated concentrations and are often found in historic urban fill material (e.g. cinders and ash).

5.2 Physical Hazards

5.2.1 Heavy Equipment Operation

Heavy/drilling equipment operation will be operated under the following conditions:

- The operation of heavy equipment will be limited to authorized personnel specifically trained in its operation.
- Equipment shall be inspected daily to ensure that there are no exposed belts, fans, etc.
- When not in use, hydraulic and pneumatic components shall be left in down or “dead” position.
- Maintain all emergency shut-offs in sound working condition.
- The operator will use the safety devices provided with the equipment, including seat belts. Backup warning indicators and horns will be operable at all times.
- While in operation, all personnel not directly required in the area will keep a safe distance from the equipment.

- Personnel directly involved in activity will avoid moving in the path of operating equipment or any portion thereof. Areas blinded from the operator's vision will be avoided. Spotters will be used when personnel may be in areas where the operator's view is obstructed.
- Additional riders will not be allowed on equipment unless it is specifically designed for that purpose.
- Construction tape or fence should be placed around the equipment/work area during operation.

5.2.2 *Excavation and Trenching*

This program outlines procedures and guidelines for the protection of LaBella employees working in and around excavations and trenches. One of the reasons LaBella requires a competent person on-site during excavation and trenching are the numerous potential hazardous that may be encountered or created. Hazards include:

- Electrocution
- Gas Explosion
- Entrapment
- Struck by equipment
- Suffocation

Before any work is performed and before any employees enter the excavation, a number of items must be checked and insured:

1. Before any excavation, underground installations must be determined. This can be accomplished by either contacting the local utility companies or the local "one-call' center for the area. All underground utility locations must be documented on the proper forms. All overhead hazards (surface encumbrances) that create a hazard to employees must be removed or supported to eliminate the hazard.
2. If the excavation is to be over 20 feet deep, it must be designed by a registered professional engineer who is registered in the state where work will be performed.
3. Adequate protective systems will be utilized to protect employees. This can be accomplished through sloping, shoring, or shielding.
4. The worksite must be analyzed in order to design adequate protection systems and prevent cave-ins.
5. Workers must be supplied with and wear any personal protective equipment deemed necessary to assure their protection.
6. All spoil piles will be stored a minimum of four (4) feet from the sides of the excavation. The spoil pile must not block the safe means of egress.
7. If a trench or excavation is 4 feet or deeper, stairways, ramps, or ladders will be used as a safe means of access and egress. For trenches, the employee must not have to travel any more than 25 feet of lateral travel to reach the stairway, ramp, or ladder.
8. No employee will work in an excavation where water is accumulating unless adequate measures are used to protect the employees.
9. A competent person will inspect all excavations and trenches daily, prior to employee exposure or entry, and after any rainfall, soil change, or any other time needed during the shift. The competent person must take prompt measures to eliminate any and all hazards.
10. Excavations and trenches 4 feet or deeper that have the potential for toxic substances or hazardous atmospheres will be tested at least daily. If the atmosphere is inadequate, protective systems will be utilized.

11. If work is in or around traffic, employees must be supplied with and wear orange reflective vests. Signs and barricades must be utilized to ensure the safety of employees, vehicular traffic, and pedestrians.

Competent Person Responsibilities

The OSHA Standards require that the competent person must be capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and have authorization to take prompt corrective measures to eliminate them and, if necessary, to stop the work.

A competent person is required to:

- Have a complete understanding of the applicable safety standards and any other data provided.
- Assure the proper locations of underground installations or utilities, and that the proper utility companies have been contacted.
- Conduct soil classification tests and reclassify soil after any condition changes.
- Determine adequate protective systems (sloping, shoring, or shielding systems) for employee protection.
- Conduct all air monitoring for potential hazardous atmospheres.
- Conduct daily and periodic inspections of excavations and trenches.

Approve design of structural ramps, if used.

Excavation Safety Plan Factors

- Utilization of the local one-call system
- Determination of locations of all underground utilities
- Consideration of confined space atmosphere potential
- Proper soil protection systems and personal protective equipment and clothing
- Determination of soil composition and classification
- Determination of surface and subsurface water
- Depth of excavation and length of time it will remain open
- Proper adherence to all OSHA Standards, this excavation and trenching safety program, and any other coinciding safety programs.

Excavation Protection Systems

- The three basic protective systems for excavations and trenches are sloping and benching systems, shoring, and shields.
- The protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied to or transmitted to the system. Every employee in an excavation shall be protected from cave-ins by an adequate protective system.
- Exceptions to using protective system:
- Excavations are made entirely in stable rock
- Excavations are less than 5 feet deep and declared safe by a competent person

Sloping and Benching Systems

- Slope to the angle required by the Standard for Type C, which is the most unstable soil type.
- The table provided in Appendix B of the Standard may be used to determine the maximum allowable angle (after determining the soil type).
- Tabulated data prepared by a registered professional engineer can be utilized.
- A registered professional engineer can design a sloping plan for a specific job.

- Sloping and benching systems for excavations five (5) to twenty (20) feet in depth must be constructed under the instruction of a designated competent person.
- Sloping and benching systems for excavations greater than twenty (20) feet must be designed and stamped by a registered professional engineer.
- Sloping and benching specifications can be found in Appendix B of the OSHA Standard (Subpart P).

Shield Systems (Trench Boxes)

- Shielding is the third method of providing a safe workplace.
- Unlike sloping and shoring, shielding does not prevent a cave-in.
- Shields are designed to withstand the soil forces caused by a cave-in and protect the employees inside the structure.
- Most shields consist of two flat, parallel metal walls that are held apart by metal cross braces.
- Shielding design and construction is not covered in the OSHA Standards.
- Shields must be certified in design by a registered professional engineer and must have either a registration plate on the shield or registration papers from the manufacturer on file at the jobsite office.
- Repairs & modifications must be approved by manufacturer.

Safety Precautions for Shield Systems

- Shields must not have any lateral movement when installed.
- Employees will be protected from cave-ins when entering and exiting the shield (examples - ladder within the shield or a properly sloped ramp at the end).
- Employees are not allowed in the shield during installation, removal, or during any vertical movement.
- Shields can be 2 ft. above the bottom of an excavation if they are designed to resist loads at the full depth and if there are no indications of caving under or behind the shield.
- The shield must extend at least 18 inches above the point where proper sloping begins (the height of the shield must be greater than the depth of the excavation).
- The open end of the shield must be protected from the exposed excavation wall. The wall must be sloped, shored, or shielded. Engineer designed end plates can be mounted on the ends of the shield to prevent cave-ins.

Inspections

- Daily inspection of excavations, the adjacent areas and protective systems shall be made by the competent person for evidence of a situation that could result in a cave-in, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions.
- All inspections shall be conducted by the competent person prior to the start of work and as needed throughout the shift.
- Inspections will be made after every rainstorm or any other increasing hazard.
- All documented inspections will be kept on file in the jobsite safety files and forwarded to the Manager weekly.
- A copy of the Daily Trenching Inspection Form, refer to Appendix 3 of this HASP, can be used for this purpose.

5.2.3 *Extreme Hot or Cold Weather Conditions*

Extreme weather conditions can cause hypothermia or hyperthermia. To reduce these risks, precautionary measures shall be taken such as dressing appropriately, drinking plenty of fluid, and

taking time to warm up or cool down as needed. Personnel are trained to recognize and report symptoms of either condition. Should symptoms persist or worsen, victim(s) shall be transported to a medical facility.

5.2.4 *Underground Utilities*

Various forms of underground utility lines or pipes may be encountered during site activities. Prior to the start of intrusive operations, utility clearance is mandated, as well as obtaining authorization from all concerned public utility department offices. If sufficient data is unavailable to accurately determine the location of the utility lines, LaBella will hand clear or use soft dig techniques to a depth of at least 1 foot below the proposed limit of the excavation. Should intrusive operations cause equipment to come into contact with utility lines, the SSO will be notified immediately. Work will be suspended until the applicable utility agency is contacted and the appropriate actions for the particular situations can be taken.

The excavation equipment operators, truck drivers, etc. and signal person should be aware of overhead power lines when working around overhead power lines. Overhead power and utility lines are not anticipated to be present on, or adjacent to, the site work area. If any overhead utilities are present, a spotter will assist equipment operators to maintain a minimum of 10 feet between overhead power lines and drill rig mast.

5.2.5 *Loading of Soil and Truck Traffic Control*

During certain work tasks, the establishment of traffic control to adequately protect workers and the public may be required on-site. Site specific requirements will be determined by the site supervisor/SSO on a case-by-case basis. When using cones or other devices to modify traffic flow, ensure use of the proper taper length and device spacing to provide adequate warning distance to other vehicles. In addition, proper PPE is to be worn during traffic operations, to include hardhat and high-visibility vests.

Loading of soil shall not be done over the heads of workers. If deemed necessary, a SSO shall utilize a spotter when loading soil to prevent personnel from entering the loading area. Truck drivers will remain in the truck during loading or a safe distance away from the loading area. Truck drivers should don high visibility vests, hard hats, and safety boots when on-site and outside of their vehicle.

5.2.6 *Noise*

Noise is a potential hazard associated with the operation of heavy equipment, power tools, pumps and generators. Site workers who will perform suspected high noise tasks shall wear hearing protection. If deemed necessary by the SSO, the ESM will be consulted on the need for additional hearing protection and the need to monitor sound levels for site activities. Other workers who do not need to be in proximity of the noise should distance themselves from the equipment generating the noise.

5.2.7 *Hand and Power Tools*

In order to complete the various tasks for the project, personnel may utilize hand and power tools. The use of hand and power tools can present a variety of hazards, including physical harm from being struck by flying objects, being cut or struck by the tool, fire, and electrocution. Work gloves, safety glasses, and hard hats will be worn by the operating personnel at all times when utilizing hand and power tools and Ground Fault Circuit Interrupter GFCI-equipped circuits will be used for all power tools.

5.2.8 *Slips, Trips, and Falls*

Working in and around the Site will pose slip, trip, and fall hazards due to rain, snow, oil or ice. Excavations (if present) at the Site will cause uneven footing in the trenches and around the spoil piles. Workers shall employ good work practice and housekeeping procedures to reduce risk.

5.2.9 *Manual Lifting*

Manual lifting of heavy objects such as drilling rods or other equipment may be required. Failure to follow proper lifting technique can result in back injuries and strains. Site workers should evaluate loads before trying to lift them (i.e., they should be able to easily tip the load and then return it to its original position). Carrying heavy loads with a buddy and proper lifting techniques include: 1) make sure footing is solid, 2) make back straight with no curving or slouching, 3) center body over feet, 4) grasp the object firmly and as close to your body as possible, 5) lift with legs, and 6) turn with your feet, don't twist. In addition, hand digging may present lifting/ergonomic hazards.

5.2.10 *Confined Space Entry Program*

Confined space entries are managed and implemented only by LaBella employees trained as such, and therefore shall be completed in accordance with OSHA standards for Confined Space Entry CFR 1910.146. **This Confined Space Entry Program only applies to entering and cleaning Frac tanks**.

Pre-Entry Hazard Assessment
A pre-entry hazard assessment will determine whether the entry will be a confined space entry or a permit required confined space entry.

The hazard assessment should include:

1. The scope of work to be performed in the confined space;
2. Air testing (4 gas meter)
3. Hazards created as a result of the scope of work
4. The control measures to be implemented to eliminate or reduce each of the hazards to an acceptable level for entry

In addition, an entry permit included in Appendix 4 should be completed as part of safe practices for each entry regardless if the space is not considered a Permit Confined Space.

No entry shall be permitted until the hazard assessment has been reviewed and discussed by all workers engaged in the activity.

All entries shall be performed by workers trained in accordance with OSHA standards CFR 1910.146

If applicable, all Permit Confined Space entry should adhere to the following procedures as outlined below.

PERMIT SPACE ALTERNATE ENTRY PROCEDURES

General
Unlike a space that contains only physical hazards, a space containing an atmospheric hazard cannot be reclassified as a non-permit space. However, if the atmospheric hazard in a permit space can be controlled by forced air ventilation, less stringent procedures instead of full permit space procedures when workers enter the space. The alternate procedures may be used if:

- All physical hazards are eliminated or isolated

- The only hazard is an actual or potential hazardous atmosphere that can be and is made safe for entry using continuous forced air ventilation
- In the event the ventilation system stops working, entrants can exit the space safely.

Alternate procedures must document the reasons, and the supporting data, for concluding that these criteria are met. The documentation must be made available to each worker who enters the space or to that worker's authorized representative.

Procedure

Alternate entry procedures may be used to enter a permit required confined space if specific criteria are met as outlined under OSHA 1926.1203(e). Your manager must be informed of the intent to enter a permit space under alternate procedures. Alternate entry relieves the employer of performing a permit entry.

1. Before an alternate entry can be performed the complete requirements listed in OSHA 1926.1203(e) must be reviewed.
2. Your manager must be informed of the intent to enter a permit space under alternate procedures.
3. Alternate entry must be documented on the Alternate Entry Form, see Appendix 4 of this manual. The form must be available to employees entering the space and be located at the space for the duration of entry.
4. Alternate Entry must be documented and updated on the confined space evaluation & inventory form, see Appendix 4 of this manual. Documentation must be available to employees entering the space and be located at the space for the duration of entry.

PERMIT SPACE RECLASSIFICATION PROCEDURES

General

A permit space that contains only physical hazards may be reclassified as a non-permit space if (1) the physical hazards are eliminated or isolated without entering the space; or (2) the physical hazards are eliminated or isolated by entering the space using permit space procedures. Physical hazards include all hazards that are not atmospheric hazards, including: explosives (other than explosive atmospheres); mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; inwardly converging surfaces; and chemicals that can cause death or serious physical harm through skin or eye contact (rather than through inhalation).

Procedure

A permit required confined space may be reclassified to a non-permit confined space if specific criteria are met as outlined under OSHA 1926.1203(g). Your Manager must be informed of the intent to reclassify a space. Reclassification relieves the employer of performing a permit entry.

1. Before a reclassification can be performed the complete requirements listed in OSHA 1926.1203(g) must be reviewed.
2. Your Manager must be informed of the intent to reclassify a space.
3. Reclassification must be documented on the Permit Space Reclassification form confined space evaluation & inventory form, see Appendix 4 of this manual. Documentation must be available to employees entering the space and be located at the space for the duration of entry.

Permit Space Entry Process

The following procedures will be followed when entry into a Permit Required Confined Space is required:

Issuing an Entry Permit

1. No employee or other authorized entity will be allowed to enter a permit required confined space without first obtaining and completing an entry permit.
2. The entry permit must be completed in its entirety before entry is authorized.
3. The entry permit may be issued only for the duration of the work involved.
4. The permit must be completed in its entirety.
5. The permit must be reviewed with all entrants, attendants, and other affected employees.
6. The entry supervisor must authorize (sign) the permit to authorize entry. No entry is to occur before authorization.
7. Additional permits and/or SDS should be attached to the permit as necessary.

Canceling an Entry Permit

1. The entry supervisor must cancel the entry permit when an assignment is completed or when new condition arises. The permit should not be canceled until the space is once again secure and entry has completely ceased.
2. Once a permit is cancelled, entry under the permit is no longer permitted.
3. New conditions must be noted on the canceled permit and used in revising the permit space program.

Suspending an Entry Permit

1. An entry supervisor may suspend an entry permit instead of cancelling it if a temporary condition has occurred in or near the space that, once corrected, is not expected to reoccur.
2. The permit may be reinstated and entry may occur under the permit if the entry supervisor has determined that the conditions in the space match the allowable conditions listed on the permit.

Retaining Canceled Entry Permits

1. Completed permits must be sent to your Manager for review and file at the termination of the entry.
2. Permits will be reviewed annually by the safety committee to determine if program changes are required.
3. Canceled entry permits must be kept of file for a minimum of 1 year per OSHA recordkeeping requirements.

Permit Space Entry Preparation

Preparing to enter a permit space involves meeting all the conditions and requirements of the Entry Permit. The following are general procedures and may be performed in another order or multiple times before entry to meet the requirements of a specific permit entry.

1. Collect information: Collect all of the information you need to enter the space from the Host, Controlling, and other contractors. Determine if the work in the space is going to create additional hazards. Arrange coordination meetings. Collect materials.

2. Isolate the confined space: Isolate the space to eliminate hazards. When applicable:
   a. ***Identify all energy sources*** and hazards. Determine isolation controls related to the hazards.
   b. ***Isolate energy sources*** - Pipelines and other accessories must be either disconnected, misaligned or removed, blanked, or by double block and bleed the
   c. system (closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves);
   d. ***Utilize lockout/tagout*** procedures to isolate all potentially hazardous energy sources;
   e. ***Block or disconnect*** all mechanical linkages;
   f. ***Establish early warning systems*** and controls to monitor engulfment hazards;
   g. Placement of barriers to eliminate the potential for employees contact with a physical hazard.
3. Clean the space: If the confined space contained a hazardous liquid or solid, it must be thoroughly purged, cleaned, flushed and/or rinsed. Make sure all sludge's and residue have been effectively removed. This is especially important if "hot work" is to be done.
4. Eliminate: any conditions that could make it unsafe to remove an entrance cover.
5. Test the atmosphere: See air monitoring section of this program.
6. Purge, inert, flush or ventilate: If the confined space contains a hazardous atmosphere, it must be properly purged, inerted, flushed and/or ventilated. Inerting may result in an Immediately Dangerous to Life and Health (IDLH) oxygen-deficient atmosphere.

   WARNING Purging or inerting a space may create an IDLH atmosphere.

7. Ventilate the Space: See ventilation section of this program.
8. Safe Access and Egress: A ladder or other suitable equipment must be used and remain in place or be readily available for entering and exiting the confined space. If a ladder or hoist system is provided, it must be inspected for defects and secured or anchored in place. If a ladder is a permanent part of the space, check for defects, especially in manholes and vaults. If vertical entry is necessary, entrant is to wear a full body harness with retrieval/life line to arrest a fall or perform non-entry rescue.
9. Barricading and Traffic Control: When the opening to a confined space is located in a floor, street or other location subject to vehicular or pedestrian traffic, adequate protective barricades and, if necessary, warning signs, lights or cones, must be provided. The opening is to be barricaded or guarded to protect against a fall into the confined space opening and to protect the entrant from external hazards.
10. Personal Protective Equipment (PPE): The PPE either required by the entry permit or appropriate for the hazard must be provided and used by all entrants. When entrants are required to use respiratory protection or escape respirators, they must receive respirator training including proper fit testing. All entrants are required to wear a full body or chest harness. Appropriate retrieval equipment must be provided which may include a tripod, hoist or equivalent, and/or a retrieval line.
11. Tools and Equipment: The tools and equipment brought into confined space should be kept to a minimum. Under no circumstances will compressed gas cylinders be taken into a confined space except as follows: self-contained breathing apparatus, 5 minute escape cylinder, air horn or small pressurized cans for testing purposes. Under no circumstances will gasoline powered equipment be brought into or used in a confined space. Explosion proof or other special equipment will be required if flammable/combustible gases, vapors or dusts are present. If "hot work" is involved, or flammable/combustible materials are present, have a fire extinguisher readily available. Obtain a "hot work" permit if "hot work" will be performed.

12. Communications: Positive communication between the entrants and the attendant must be maintained. Communication may be in the form of audible or visual. A portable radio, intercom or other suitable equipment must be used when entrants are out of voice range or line of sight. An entrant may be staged in the confined space to provide positive communication between other entrants and the attendant. A means of communication between attendant and rescue services must be available and maintained.
13. Complete Permit: Complete permit in entirety, review with attendants/entrants, entry supervisor authorizes permit, and then entry is authorized to begin.

Permit Space Entry – Pre-Entry Briefing

1. Before allowing any worker to enter a permit required confined space, a pre-entry briefing must be conducted by the entry supervisor issuing the permit. This briefing is a conference between affected employees, entrants, attendants, safety staff, and the entry supervisor.
2. The briefing will review the nature of the work, hazards of the space, hazard controls, safe work practices, non-entry rescue procedures and emergency rescue procedures, use of personal protective equipment, use of other safety equipment, and any other appropriate information.
3. The briefing will include a review of pre-entry air monitoring results.

Permit Space Entry – Attendant Duties

When an employee is assigned to enter a permit-required confined space, a trained attendant must be assigned to remain at the opening to the confined space for the entire entry operation. The attendant must have no other duties that would require him to leave his position. The attendant must be trained in the use of non-entry rescue procedures and equipment. The attendant must never enter the confined space to affect a rescue. If an emergency situation arises the entrant must be removed by non-entry means; that is, with the use of emergency retrieval systems. The attend duties are but not limited to:

1. Participate in the pre-entry briefing.
2. Is familiar with and understands the hazards that may be faced during entry into the confined space.
3. Is aware of possible behavioral changes and effects of hazard exposures to entrants.
4. Continuously maintains an accurate count of entrants.
5. Remains outside the space until relieved by another attendant or all entrants have exited the confined space.
6. Assists and communicates with entrants.
7. Assesses activities inside and outside the space to determine if it is safe for entrants to remain in the space.
8. Alerts entrants of the need to evacuate the space.
9. Summons rescue and other emergency services as soon as the attendant determines that the entrants may need assistants to escape the confined space.
10. Performs non-entry rescue when possible using the tripod and retrieval systems.
11. Prevents unauthorized entry into the confined space while entry is underway.
12. Performs no duties that might interfere with the attendant's primary duty to assess and protect the entrants.
13. Under no circumstances enter into a confined space to perform a rescue unless properly trained to perform confined space rescue and until properly relieved by another authorized attendant.
14. Performs non-entry rescue of entrants from the confined space using the confined space retrieval system.

Permit Space Entry – Entrant Duties

Only trained and authorized entrants are allowed to enter a permit required confined space. The entrant must be trained in entry techniques. Entrants perform the work in the space. The entrant duties are but not limited to:

1. Participate in the pre-entry briefing.
2. Be familiar with and understand the hazards they may face during entry into a confined space.
3. Know how to properly use the safety equipment provided for entry into the space.
4. Communicate with the attendant on a regular and as needed basis to allow the attendant to assess the entrant's status and to alert the entrant of the need to evacuate the space if needed.
5. Alert the attendant of any hazardous conditions or situations identified within the space.
6. Evacuate the space immediately when ordered by the attendant or entry supervisor, or if the entrant detects a prohibited condition.
7. Report any deficiencies or malfunctions of equipment to the attendant or entry supervisor.
8. Understand emergency procedures in case of an accident in a confined space.

9. Wear appropriate PPE and non-entry rescue retrieval equipment

Permit Space Entry – Entry Supervisor Duties

Only trained and authorized entry supervisors are allowed to supervise an entry. The entry supervisor's duties are but not limited to:

1. Lead the pre-entry briefing.
2. Identify and evaluate the hazards of permit spaces before employees enter them.
3. Classify confined spaces as "permit required", "alternate procedure", or "non-permit required."
4. Take the necessary measures to prevent unauthorized entry into confined spaces by posting danger signs, notifying other employers and employees onsite or their authorized representative of the existence, location, and hazards of the confined spaces.
5. Check that the permit has been completed properly and that gas monitoring and other tests have been conducted before permitting entry and signing the permit.
6. Identify personnel who are authorized to enter the confined space.
7. Identify the employees under their supervision who are required to wear respirators.
8. Implement isolation/lockout program procedures for the confined space hazards.
9. Verify all permit-required and alternative entry confined spaces are continuously monitoring utilizing a gas monitor.
10. Verify forced air ventilation is continuously used in all permit-required and alternative entry confined spaces.
11. Provide instructions and necessary additional training to employees who may enter confined spaces if conditions or hazards exist for which employees have not been trained.
12. Provide instruction to personnel on the proper use of equipment required for confined space entry.
13. Inform personnel about respiratory hazards in confined spaces.
14. Verify a rescue plan has been prepared and rescue services are available for all permit-required confined space(s).
15. Conduct a pre-entry briefing to inform attendants and entrants of possible hazards that may be encountered.
16. Maintain equipment that is used to enter confined spaces.
17. Maintain records of equipment maintenance and employee training.
18. Conduct work site inspections to verify compliance with confined space entry procedures.
19. Removes unauthorized individuals who enter or attempt to enter the confined space.
20. Issue and cancel entry permits.

AIR MONITORING

General

1 The air within the confined space and permit space should be tested from outside of the confined space before entry into the confined space. All confined space testing procedures must begin by inserting the instrument probe into the area through a vent hole or some other opening. Where no openings exist, the entrance cover should be pried open on the downwind side just enough to allow insertion of the probe.

3. The atmosphere in a confined space and permit space must be checked with a suitable detector before entry is permitted and continuously during the work.

4. The air must be checked at minimum for oxygen content, flammable or combustible gases explosive limits, and toxic gases. At minimum the two toxic gases that must always be monitored for are hydrogen sulfide and carbon monoxide.
5. Atmospheric testing should be conducted at all levels of the confined space and permit space. This is necessary because air contaminants may be at different concentrations at various levels in the tank.
6. The results of all testing must be recorded on the entry permit or if used alternate entry form(s).

Order of Testing

1. A test for oxygen is performed first because most combustible gas meters are oxygen dependent and will not provide reliable readings in an oxygen deficient atmosphere. Combustible gases are tested for next because the threat of fire or explosion is both more immediate and more life threatening, in most cases, than exposure to toxic gases and vapors. If tests for toxic gases and vapors are necessary, they are performed last.

Air Monitor Devices

1. The instrument used for air monitoring must be calibrated, designed for confined space air monitoring, and in good working order.
2. The instrument used for air monitoring must be calibrated per manufacture specifications.
3. The instrument used for air monitoring must be “bumped” before use to ensure proper operation.
4. The instrument used for air monitoring must be zeroed in fresh air prior to conducting tests in the confined space.
5. Persons using the air monitor must be trained in its use and interpretation of results.

Allowable Atmospheric Limits

1. Oxygen (O2) - Oxygen content must be at least 19.5% and no greater than 23.5% in the confined space to perform work. Measurements must be taken at all levels in the confined space. No entry may be allowed into a space containing less than 19.5% oxygen. No entry may be authorized into a space containing greater than 23.5% oxygen due to the serious risk of fire or explosion.
2. Lower Explosive Limit (LEL) – Lower Explosion Limit must be 10% or less in the confined space to permit work. Gas readings are measured in terms of the lower explosive limit, (LEL). This is the smallest concentration of a gas in air that will explode when it contacts a spark or open flame. Measurements must be taken at all level in the confined space. Entrants must stop all activities, immediately evacuate the space, and identify the source of the problem if the reading exceeds 10% of the LEL.
3. Carbon Monoxide (CO) – Carbon monoxide content must be 35 (STEL) or 25 PPM (ACGIH) or less in the confined space to perform work. Measurements must be taken at all level in the confined space. Entrants must stop all activities, immediately evacuate the space, and identify the source of the problem if the CO reading exceeds 25 PPM.
4. Hydrogen Sulfide (H2S) – Hydrogen sulfide content must be 10 PPM or less in the confined space to permit entry. Measurements must be taken at all levels in the confined space. Entrants must stop all activities, immediately evacuate the space, and identify the source of the problem if the H2S reading exceeds 10 PPM.
5. Other Toxics - The atmosphere also must be tested for toxic gases that are immediately dangerous to life and health (IDLH) before entry into a confined space may be authorized. If

the space previously contained a known toxic gas, (i.e., chlorine), the atmosphere must be tested for the specific gas involved. This testing will usually involve additional air monitors. Entry limits should be established through the use of SDS, OSHA PEL, and AGCIH TLV data.

Ventilation

1. Confined space ventilation blowers and ducting shall be used for space ventilation.
2. Alternate entry procedures require the use of constant ventilation.
3. Where applicable air ducting saddles will be used at manhole openings to maintain safe access and egress.
4. In general, ventilation should produce approximately 10 air exchanges per hour. The amount of time required for one exchange can be determined by dividing the volume of the space by the flow rate of the blower, (flow rate is stated on the blower's label). Note that turns in blower duct reduce CFM flow rates. These reduced rates must be used in the calculation for air exchange.
5. Mechanical ventilation may be required to maintain a safe working environment inside a permit required confined space. The requirements for maintaining proper ventilation are based on many factors involving theoretical air velocity parameters. Therefore, ventilation requirements will usually be determined by qualified industrial hygienists, engineers, or other highly trained individuals.

Basic Procedure

1. Select a blower with enough capacity to quickly replace the volume of air in the space.
2. Use only blowers in good working order.
3. Observe safety and warning labels on blower.
4. Position blower where it will take in clean, fresh air. Be very careful about automobile and generator exhaust fumes.
5. Use a flexible duct to deliver air into all areas of the space. (Generally, the duct must be at least 3 feet into the space.)
6. Ventilate for a minimum of 5 minutes before verifying, through air monitoring, acceptable entry conditions are present and entering.
7. Continue to ventilate throughout the entry operation.

SAFETY EQUIPMENT CONSIDERATIONS

General

1. Non-entry rescue equipment and air monitoring equipment (at minimum) are required for permit space entry. This equipment might include a full body harnesses, lifeline(s), ladders, retrieval equipment, tri-pods, ventilation equipment, and fall protection equipment.
2. Subcontractors are required to provide their own safety equipment.
3. Our safety equipment should not be used by the subcontractor.

Equipment Inspection
All entry equipment must be inspected per manufactures requirements before use and must be in good working order.

Lighting Considerations

1. When natural lighting in the work area is insufficient for safe operations, auxiliary lighting must be provided. This lighting must be intrinsically safe (non-sparking) if a potential for flammable gases or vapors or combustible dusts in the atmosphere exists.
2. If auxiliary lighting is used workers should be provided with approved flash lights or other approved portable lighting so they can safely exit the confined space in an emergency or lighting outage

Special Tools and Equipment Considerations

1. Only approved, low-voltage electric tools, air tools, and hand tools that are intrinsically safe (non-sparking) may be used if the atmosphere in the confined space contain or have the potential for containing flammable gases or vapors or combustible dusts. In these situations all electric circuits must be provided with ground fault circuit protection.
2. All tools and power cords must be visually inspected before use to assure that cords with frayed or damaged insulation, broken wires, or other defects are not used. In spaces confirmed as containing flammable gases or vapors or combustible dusts non-sparking hand tools should be used.
3. GFCI protection must be used for all electrical tools.

RESCUE AND EMERGENCY CONSIDERATIONS

General
Whenever an entrant is in a permit space, the attendant must remain outside the space and must maintain communication with all entrants and keep track of their condition. If one or more entrants suffers an injury or illness and is unable to exit the space without help, the attendant must initiate a non-entry rescue.

Non Entry Rescue

1. The entrant(s) entering a permit-required confined space must (at minimum) be equipped with and use non entry rescue equipment. Emergency assistance (rescue team) availability must be confirmed in the event that non-entry rescue fails.
2. Each entrant must wear a chest or full body harness, with a retrieval line attached at the D-ring in the center of the back or another point which positions the entrant so that he or she is small enough to be pulled out of the space. The other end of the retrieval line must be attached to a mechanical device or a fixed point outside the permit space. In cases were the use of a harness is infeasible or more hazardous wristlets or anklets may be used in lieu of a harness.
3. In those cases where an employee must enter a confined space through a top opening 5 feet or more in depth, the entrants harness must be attached to a mechanical retrieval system designed and rated for entrant rescue.
4. If mechanical retrieval equipment cannot be used, as in the case of a side entry to a confined space, an adequate number of additional employees must be on hand to assist the attendant in the removal of the worker without entering the space.

5. When the use of non-entry rescue equipment becomes infeasible due to specific hazards then alternate entry rescue provisions must be made. This may include the use of a rescue service located onsite.

Entry Rescue

OSHA requires that the entry employer must make sure that the rescue service is able to respond in time to enable the injured worker to receive needed medical attention in light of the hazards present in the permit space.

- The permit space hazards, the work being performed, and whether non entry rescue is employed will be used to determine the level of entry rescue assigned to the permit entry.
- In some cases, entry may require an on-site standby rescue team, such as when the entrant is working in an atmosphere that is immediately dangerous to life or health and is wearing an airline respirator or a self-contained breathing apparatus. Another example is when a rescue service could not respond in a timely manner. Consult the LABELLA Safety Manager for rescue team information.
- For entry rescue, pre-planning will be required to determine who and how of the entry rescue. Provided rescue services must meet specific OSHA training requirements outlined in OSHA 1926.1211(a).

Options for entry rescue teams include:

- LaBella employees specifically trained and equipped to perform rescue. Our company does not currently maintain an entry rescue team and this option currently is not available.
- A host employers team (facility team) who has agreed to perform the service, is available during the entry, and can respond timely
- A qualified contracted trained stand by rescue service located on site. This team is pre-arranged to be on site.
- An emergency service agency (fire department) that provides confined space rescue and can respond timely. The department must be able to respond timely and be trained in permit required confined space rescue.

If the entry employer designates an off-site rescue service, it must determine that the service has the ability and equipment to carry out a rescue in the particular permit space or type of permit space in which the entrant is working. It must contact the rescue service and make sure that it will be able to respond in a timely manner whenever an entrant is in the permit space.

Specific Rescue Procedure

- Procedures for summoning rescue services will be developed for each permit space entry, reviewed with authorized entrants and attendants, and posted at the permit entry site.

Basic Procedure

1. Attendant notifies rescue services
2. Under no circumstances is the attendant to enter the confined space
3. If appropriate, emergency service back-up is notified
4. Attendant takes the following actions:

5. Use rescue equipment for non-entry rescue
6. Activate ventilation system to help clear confined space atmosphere
7. Do not allow anyone except rescue team in confined space
8. Advise rescue team of all information known
9. Barricade off area around confined space for staging rescue
10. Assist rescue team
11. Rescue team tests atmosphere before and during rescue.

Responsibilities

Safety Representatives along with Safety Committee

1. Prepare and maintain the LaBella Confined Space Program.
2. Coordinate training programs for initial and refresher training.
3. Perform an annual review of the program using cancelled entry permits and other information.
4. Maintain cancelled permits for a period of 3 years.

Mangers

1. Be knowledgeable about the requirements of the Confined Space in Construction Program.
2. Perform and/or coordinate the identification and inventory of confined spaces and permit spaces on a project as outlined in the information & evaluation coordination section of this program.
3. Debrief entry employers and communication hazard information to host employers as outlined in the information & evaluation coordination section of this program.
4. Ensure that employees in their area(s) of concern participate in training programs related to the Confined Space Program.
5. Ensure that appropriate Confined Space Program related work practices are followed.

Employees

1. Be knowledgeable about the requirements of the Confined Space in Construction Program.
2. Assist in the identification and inventory of confined spaces and permit spaces on a project as outlined in the information & evaluation coordination section of this program.
3. Understand your responsibility on the team.

Training

1. Confined Space Awareness Training will be provided for LaBella affected employees.
2. Confined Space Evaluation Training will be provided for all employees required to evaluate and inventory confined spaces.
3. Confined Space Entrant, Attendant, and Entry Supervisor training meeting OSHA requirements is required for all employees who perform permit entries.
4. Confined Space Rescue training is required for all persons who make up a confined space rescue team. Annual retraining and drills are required for rescue personnel.

Annual Review

The safety committee will review the program and permits annually. Revisions shall be made on determination of annual review

5.3 Biological Hazards

During the course of the project, there is a potential for workers to come into contact with biological hazards such as insects, plants, and sewage. Workers should be aware of these potential hazards that are discussed below.

5.3.1 Insects

Insects, including bees, wasps, hornets, mosquitoes, ticks, and spiders, may be present at the Site making the chance of a bite possible. Some individuals may have a severe allergic reaction to an insect bite or sting that can result in a life threatening condition. Some insect bites can transmit diseases such as Lyme disease or a virus such as West Nile; any individuals who have been bitten or stung by an insect should notify the SSO. The following is a list of preventive measures:

- Apply insect repellent prior to performing any field work and as often as needed throughout the work shift
- Wear proper protective clothing (work boots, socks and light colored pants)
- When walking in wooded areas, avoid contact with bushes, tall grass, or brush as much as possible
- Field personnel who may have insect allergies shall have bee sting allergy medication on site and should provide this information to the SSO prior to commencing work.

<u>Lyme Disease</u>

Lyme disease is caused by infection from a deer tick that carries a spirochete. During the painless tick bite, the spirochete may be transmitted into the bloodstream often after feeding on the host for 2 to 24 hours. The ticks that cause the disease are often no bigger than a poppy seed or a comma in newsprint. The peak months for human infection are from May to September.

Symptoms appear in three stages. First symptoms usually appear from 2 days to a few weeks after a person is bitten by an infected tick. Symptoms usually consist of a ring-like red rash on the skin where the tick was attached. The rash is often bulls-eye like with red on the outside and clear in the center. The rash may be warm, itchy, tender, and/or "doughy." Unfortunately, this rash appears in only 60 to 80% of infected persons. An infected person also has flu-like symptoms of a stiff neck, chills, fever, sore throat, headache, fatigue and joint pain. These symptoms often disappear after a few weeks. The second stage symptoms, which occur weeks to months later include meningitis, severe headache, drooping of the muscles on the face, called Bell's Palsy, encephalitis, numbness, withdrawal and lethargy. These symptoms may last for several weeks to several months. Third stage symptoms, which occur months or years later include arthritis, heart problems, and loss of memory. The third stage symptoms may mimic multiple sclerosis and Alzheimer's disease.

It is recommended that personnel check themselves when in areas that could harbor deer ticks, wear light color clothing and visually check themselves and their buddy when coming from wooded or vegetated areas. If a tick is found biting an individual, the SSO should be contacted immediately. The tick can be removed by pulling gently at the head with tweezers. If tweezers are not available, cover your fingers (e.g., tissue paper) and use to grasp the tick. It is important to grasp the tick as close to the site of attachment and use a firm steady pull to remove it. Wash hands immediately after with soap and water. The affected area should then be disinfected with an antiseptic wipe. All mouth parts must be removed from the skin. If the tick is removed with breaking off the mouth parts, an irritation or infection may occur. Also, the organism that is causing the disease can still enter the body through the skin. The employee will be offered the option for medical treatment by a physician, which typically involves antibiotics.

If personnel feel sick or have signs similar to those above, they should notify the SSO immediately. Treatment with antibiotics is effective and recovery is usually complete. In the first stage antibiotics are usually given orally. Second and third stage treatment, however is prolonged and recovery may take longer. Antibiotic treatment is usually provided intravenously for second and third stage Lyme disease.

West Nile Virus

West Nile Virus (WNV) is a mosquito-borne infection transmitted through the bite of an infected mosquito. The symptoms of WNV can be asymptomatic (no symptoms) or in more serious cases can lead to West Nile fever. West Nile Fever can include fever, headache, tiredness, body ache, an occasional rash on the trunk of the body, and swollen lymph glands. In severe cases, people have developed West Nile encephalitis or meningitis which symptoms include fever, headache, neck stiffness, tremors, coma and in some cases death. The incubation period for the disease is usually 2 to 15 days. The symptoms can range from a few days to several weeks. Since the initial outbreak in 1999, the virus has spread rapidly throughout New York State. There are about 65 different species of mosquitoes in New York State, but only a small percentage has been associated with the WNV. Most mosquitoes are not infected and the chance of infection from a mosquito bite of an on-site worker is very small. All residents of areas where virus activity has been identified are at risk of getting WNV, but those of the highest risk for becoming seriously ill from WNV are people over 50 and individuals with some immunocompromised condition (transplant patients).

The following precautions will be used to help reduce the risk of mosquito bites:

- Reduce mosquito-breeding areas by making sure wheelbarrows, buckets, and other containers are turned upside down when not used so that they do not collect standing water.
- Wear shoes, long pants with bottoms tucked into boots or socks, and a long-sleeved shirt when outdoors for long periods of time, or when many mosquitoes are most active (between dawn and dusk).
- Use mosquito repellant according to the manufacturer's directions when outdoors for long periods of time and when mosquitoes are most active.

5.3.2 *Plants*

The potential for contact with poisonous plants exists when performing fieldwork in undeveloped and wooded areas. Poison ivy, sumac, and oak may be present on site. Poison ivy can be found as vines on tree trunks or as upright bushes. Poison ivy consists of three leaflets with notched edges. Two leaflets form a pair on opposite sides of the stalk, and the third leaflet stands by itself at the tip. Poison ivy is red in the early spring and turns shiny green later in the spring. Poison sumac can be present in the form of a flat-topped shrub or tree. It has fern-like leaves, which are velvet "down." Poison sumac has white, "hairy" berry clusters. Poison oak can be present as a sparingly branched shrub. Poison oak is similar to poison ivy in that it has the same leaflet configuration; however, the leaves have slightly deeper notches. Prophylactic application of Tecnu® may prevent the occurrence of exposure symptoms. Post exposure over the counter products are available and should be identified at the local pharmacist. Susceptible individuals should identify themselves to the SSO.

Contact with poison ivy, sumac, or oak may lead to a skin rash, characterized by reddened, itchy, blistering skin which needs first aid treatment. If you believe you have contacted one of these plants, immediately wash skin thoroughly with soap and water, taking care not to touch your face or other body parts.

5.4 Hazard Analysis

This section includes an active hazard analysis (AHA) to assess and control potential site hazards for each general project task.

WORK TASK	POTENTIAL HAZARDS	CONTROLS
Activity: Site Mobilization/Demobilization		
Site Mobilization/Demobilization	Biological hazards	Proper clothes, body inspection, repellant
	Slip, Trip, and Fall Hazards	Identify and repair potential tripping hazards. Maintain safe and orderly work area.
	Adverse Weather	Monitor weather daily. Discontinue work as necessary based on lightning, limited visibility, impaired mobility, etc.
	Noise	Distance from noise, hearing protection.
	Heat/Cold Stress	Acclimatization, work/rest regimes, drinking warm/cold fluids.
Activity: Excavation, Remediation, Disposal of Waste, and Sample Collection		
Excavation, Remediation, Disposal of Waste, and Sample Collection	Proximity to heavy/drilling equipment	Distancing, safe work practices, inspections, wear hearing protection.
	Trenching and Excavation	Place soil stockpiles away from edge of excavation. Identify depth of excavation and slope of excavation sidewalls to determine potential hazards.
	Slip, Trip, and Fall Hazards	Identify and repair potential tripping hazards. Maintain safe and orderly work area.
	Adverse Weather	Monitor weather daily. Discontinue work as necessary based on lightning, limited visibility, impaired mobility, etc.
	Noise	Distance from noise, hearing protection.
	Heat/Cold Stress	Acclimatization, work/rest regimes, drinking warm/cold fluids.
	Contaminant contact	Wear protective coveralls (e.g., Tyvek®) (only if deemed needed by SSO) with shoe covers, nitrile gloves, and safety glasses when handling samples. Dispose of gloves after sampling.
	Exposure to PCBs	Avoid direct contact by use of PPE. If dust generation is anticipated, specific controls will be in place to prevent dust generation. Dust control measures (water spray, soil covers, slower work pace, or change in work activities) will be deployed prior to resuming work.
	Underground Utilities	Call in *Dig Safely* utility mark-out, conduct private utility mark-out, review utility layout prior to digging, hand clear utilities, hand dig soil near electric, use GPS to mark out utilities.
	Loading of Soil and Truck Traffic Control	Use spotter to keep loading area clear, wear high visibility vest, place cones around loading area, direct traffic flow.
	Subsurface hazards	Call in Dig Safely Stakeout, review available utility plans.
	Contact with equipment, especially moving parts. Overhead hazard (rods).	Stay alert and maintain suitable clearance from moving and overhead equipment and power lines. Do not wear loose clothing, jewelry, or equipment, which could get caught by moving

WORK TASK	POTENTIAL HAZARDS	CONTROLS
		equipment. Inspect equipment daily. Train all personnel on use of emergency shutoff switches
	Manual lifting	Use proper lifting technique.
	Biological hazards	Proper clothes, body inspection, repellant
	Confined Space	Review potential hazards and complete entry permit included in Appendix 4.

6.0 TRAINING

Personnel who are not familiar with this site plan will receive training on its entire content and organization before working at the Site.

Individuals involved with the remedial investigation must be 40-hour OSHA HAZWOPER trained with current 8-hour refresher certification.

Prior to commencement of field activities, the SSO will ensure all field personnel assigned to the project will have completed training that will specifically address the activities, procedures, monitoring, and equipment used in the site operations. This training will also allow field workers to clarify anything they do not understand and to reinforce their responsibilities regarding safety and operations for their particular activity. LaBella personnel that have not received site-specific training will not be allowed on site.

Project personnel and visitors will be given health and safety briefings daily by the SSO to assist site personnel in safely conducting work activities. The briefings will include information on new operations to be conducted, changes in work practices or changes in the site's environmental conditions, as well as periodic reinforcement of previously discussed topics. The briefings will also provide a forum to facilitate conformance with safety requirements and to identify performance deficiencies related to safety during daily activities or as a result of safety inspections. The meetings will also be an opportunity to periodically update the crews on monitoring results.

7.0 PERSONAL PROTECTIVE EQUIPMENT

Generally, site conditions at this work site require protection Level D PPE, or modified Level D PPE. However, air monitoring will be conducted to determine if up-grading to Level C PPE is required (refer to Section 8.0). Descriptions of the personal protective equipment associated with Level D and Level C, are provided below:

Level D:
Hard hat, safety glasses, rubber nitrile sampling gloves, steel toe construction grade boots, etc.

Level C:
Includes Level D PPE and also full or ½-face respirator and Tyvek suit (if necessary). [*Note: Organic vapor and HEPA filter cartridges are to be changed after each 8-hours of use or more frequently.*]

8.0 AIR MONITORING

According to 29 CFR 1910.120(h), air monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection required for personnel working onsite. Air monitoring will consist at a minimum of the procedure listed below. Air monitoring instruments will be calibrated and maintained in accordance with the manufacturer's specifications.

The Air Monitor will utilize a photoionization detector (PID) to screen the ambient air in the work areas (drilling, excavation, soil staging, and soil grading areas) for total Volatile Organic Compounds (VOCs) and a DustTrak tm Model 8520 aerosol monitor or equivalent for measuring particulates. Work area ambient air will generally be monitored in the work area and downwind of the work area. Air monitoring of the work areas and downwind of the work areas will be performed at least every 60 minutes using a PID and the DustTrak meter.

If sustained PID readings of greater than 25 ppm are recorded in the breathing zone, either personnel are to leave the work area until satisfactory readings are obtained or approved personnel may re-enter the work areas wearing at a minimum a ½ face respirator with organic vapor cartridges for an 8-hour duration (i.e., upgrade to Level C PPE). Organic vapor cartridges are to be changed after each 8-hour use or more frequently, if necessary. If PID readings are sustained, in the work area, at levels above 50 ppm for a 5 minute average, work will be stopped immediately until safe levels of VOCs are encountered or additional PPE will be required (i.e., Level B).

If downwind PID measurements reach or exceed 25 ppm consistently for a 5 minute period downwind of the work area, PID readings will be taken within the buildings (if occupied) on Site to ensure that the vapors are not penetrating any occupied building and effecting the personnel working within. If the PID measurements reach or exceed 25 ppm within the nearby buildings, the personnel should be evacuated via a route in which they would not encounter the work area. The building should then be ventilated until the PID measurements within the building are at or below background levels. It should be noted that the site buildings are currently vacant.

In addition, a Special CAMP is included in Appendix E of the Site Management Plan. The Special CAMP must be implemented within 20 feet of potentially exposed individuals or structures. A copy of the Special CAMP is also included in Appendix 5 of this HASP.

9.0 EQUIPMENT DECONTAMINATION

PPE helps prevent the wearer from becoming contaminated or inhaling contaminants, and good work practices help reduce contamination on protective clothing, instruments, and equipment. Even with these safeguards, contamination may occur. Harmful materials can be transferred to clean areas, exposing unprotected personnel. To prevent such occurrences, the following contamination reduction and decontamination procedures have been developed.

9.1 Minimization of Contact with Contaminants

During completion of all site activities, personnel should attempt to minimize the degree of contact with contaminated materials. This involves a conscientious effort to keep "clean" during site activities. All personnel should minimize kneeling, splash generation, and other physical contact with contamination. This may ultimately minimize the degree of decontamination required and the generation of waste materials from site operations.

9.2 Personnel Decontamination

Personnel hygiene, coupled with diligent decontamination, will significantly reduce the potential for exposure. Consideration will be given to prevailing wind directions so that the decontamination line, the support zone, and contamination reduction zone exit is upwind from the exclusion zone and the first station of the decontamination line. Decontamination will be performed by removing all PPE used in EZ and placing in drums/trash cans at CRZ. Disinfecting hand wipes shall be available for wiping hands and face. For Level D Decontamination, personnel should wash and rinse gloves, and use anti-bacterial wipes/gel and wash and rinse hands and face with potable water. For Level C Decontamination, personnel should wash and rinse gloves and over boots, remove boot covers, remove outer gloves, remove Tyvek® splash-resistant suit or chemical resistant clothing, wash inner gloves, remove respirator, rinse inner gloves, remove inner gloves and wash and rinse hands and face.

If exposed to subsurface soils, wash with soap and water.

9.3 Hand Held Equipment Decontamination

Hand held equipment includes all monitoring instruments, samples, hand tools, and notebooks. The hand held equipment is dropped at the first decontamination station to be decontaminated by one of the decontamination team members. These items must be decontaminated or discarded as waste prior to removal from the exclusion zone.

To aid in decontamination, monitoring instruments can be sealed in plastic bags or wrapped in polyethylene. This will also protect the instruments against contaminants. The instruments will be wiped clean using antibacterial wipes and paper towels if contamination is visually evident.

Decontamination procedures for sampling equipment, hand tools, etc., shall include the use of steam cleaning or a detergent wash, as appropriate for the site conditions. All liquids generated in the decontamination will be stored at the Site in drums and then disposed of at an approved facility in accordance with federal, state and local regulations. Personnel performing this task will wear the proper PPE.

9.4 Heavy Equipment Decontamination

Decontamination of chemically contaminated heavy equipment will be accomplished using high - pressure steam or dry decontaminated with brushes and shovels. Decontamination shall take place on a decontamination pad and all liquids used in the decontamination procedure will be collected. Vehicles or equipment brought into an exclusion zone will be treated as contaminated, and will be decontaminated prior to removal. All liquids used in the decontamination procedure will be stored at the Site in drums and then disposed of at an approved facility in accordance with federal, state and local regulations. Personnel performing this task will wear the proper PPE.

10.0 EMERGENCY ACTION PLAN

In the event of an emergency, employees are to turn off and shut down all powered equipment and leave the work areas immediately. Employees are to walk or drive out of the Site as quickly as possible and wait at the assigned 'safe area'. Follow the instructions of the Site Safety Officer.

Employees are not authorized or trained to provide rescue and medical efforts. Rescue and medical efforts will be provided by local authorities.

11.0 MEDICAL SURVEILLANCE

Medical surveillance will be provided to all employees who are injured due to overexposure from an emergency incident involving hazardous substances at this site.

12.0 EMPLOYEE TRAINING

Personnel who are not familiar with this site plan will receive training on its entire content and organization before working at the Site.

Individuals involved with the remedial investigation must be 40-hour OSHA HAZWOPER trained with current 8-hour refresher certification.

13.0 COVID 19

Please refer to the attached COVID 19 protocols in Attachment 6.

14.0 REFERENCE DOCUMENTS FOR ENVIRONMENTAL INFORMATION

The following reports below may be referenced to understand site subsurface conditions. It is recommended when possible, to review the applicable documents below prior to subsurface work to understand potential site subsurface conditions that may be encountered.

- *Phase II Environmental Site Assessment*, Chazen Engineering, Land Surveying & Landscape Architecture Co. DPC, February 8, 2010.
- *Remedial Investigation Report*, Chazen Engineering, Land Surveying & Landscape Architecture Co. DPC, April 9, 2012.
- *Supplemental Remedial Investigation Report,* Chazen Engineering, Land Surveying & Landscape Architecture Co. DPC, February 2017.
- *Supplemental Remedial Investigation Report,* Chazen Engineering, Land Surveying & Landscape Architecture Co. DPC, March 26, 2019.
- *Remedial Design Modification Memorandum – ISCO, Revision 2,* LaBella Associates, DPC, September 2022.
- *Final Engineering Report,* LaBella Associates, DPC, March 2024.
- ISCO Performance Monitoring, LaBella Associates, DPC, March 2024.

APPENDIX 1

Site Contact List

SITE CONTACTS AND EMERGENCY CONTACTS LIST

LaBella Associates, DPC Personnel		
Environmental BCP Manager	Dan Noll, PE	Office: 585-295-6611
Project Manager	Richard Kampf, PG	Cell: 917-280-6364
Site Safety Officer	To Be Determined	Office: Cell:
Environmental Safety Manager	Tim Ruddy	Cell: 315-440-5125
Emergency Contacts		
Ambulance:	As Per Emergency Service	911
Hospital Emergency:	Brookdale University Hospital and Medical Center One Brookdale Plaza Brookdale, New York	718-240-500 (Non-Emergency) 911 (Emergency)
Poison Control Center:	Poison Control Center	800-222-1222
Police (local, state):	New York City Police Department	911
Fire Department:	City of Rochester Fire Department	911
Spills:	NYSDEC Spills Hotline	800-457-7362
NYSDEC and NYSDOH Contacts		
NYSDEC	NYSDEC Project Manager; Aaron Fischer	518-402-9805 Aaron.fischer@dec.ny.gov
NYSDEC	NYSDEC Project Manager's Supervisor; Heidi Dudek	518-402-9813 Heidi.dudek@dec.ny.gov
NYSDOH	NYSDOH Project Manager; Scarlett McLaughlin	518-402-7860 Scarlett.mclaughlin@health.ny.gov
Site Owner and Operator Contact Information		
Ebenezer Plaza Owner, LLC	Peter Procida	718-299-7000 x 211 pprocidda@procidacompanies.com

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

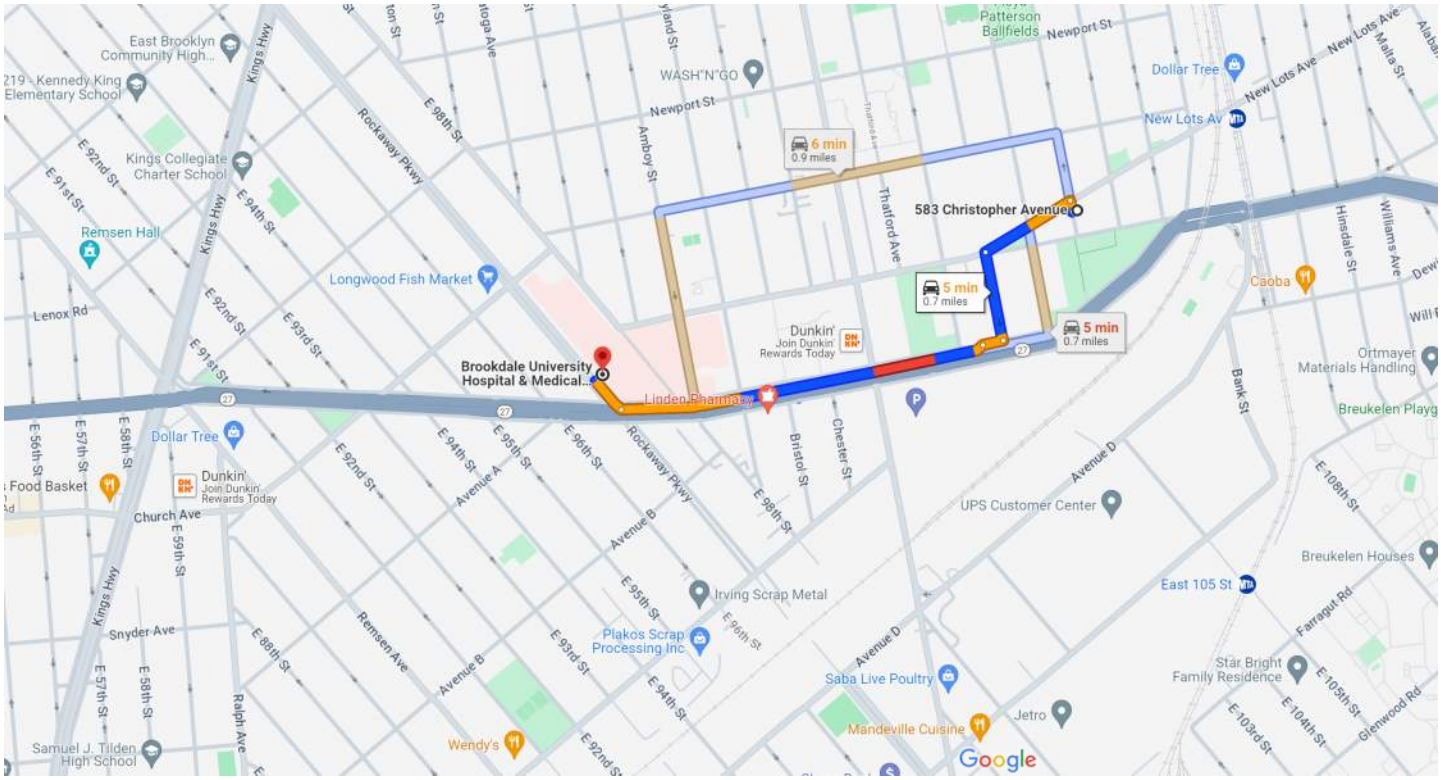
APPENDIX 2

Directions to Hospital

Google Maps

583 Christopher Ave, Brooklyn, NY 11212 to Brookdale University Hospital & Medical Center:The Department of Psychiatry, One Brookdale Plaza #1240-C, Brooklyn, NY 11212

Drive 0.7 mile, 5 min



Map data ©2024 Google 500 ft

583 Christopher Ave
Brooklyn, NY 11212

1. Head north on Christopher Ave toward New Lots Ave
   62 ft
2. Turn left at the 1st cross street onto New Lots Ave
   0.1 mi
3. Turn left onto Watkins St
   0.1 mi
4. Turn right onto Linden Blvd
   121 ft
5. Keep left to stay on Linden Blvd
   0.4 mi
6. Turn right onto Rockaway Pkwy
   Destination will be on the right
   223 ft

Brookdale University Hospital & Medical Center:The Department of Psychiatry
One Brookdale Plaza #1240-C, Brooklyn, NY 11212

APPENDIX 3

Daily Trench Inspection Form

DAILY TRENCHING INSPECTION FORM

LOCATION:	DATE:
TIME OF INSPECTION(S)	
WEATHER CONDITIONS:	APPROX. TEMP.:
SUPERVISOR/FOREMAN:	SUPERVISOR:

DIMENSIONS:	DEPTH =		
	TOP =	W	L
	BOTTOM =	W	L

SOIL TYPE:	TESTED:
❑ Solid rock (most stable)	❑ Yes
❑ Average soil	❑ No
❑ Fill material	
❑ Loose sand	

Yes	No	HAZARDOUS CONDITIONS
❑	❑	Saturated soil / standing or seeping water
❑	❑	Cracked or fissured wall(s)
❑	❑	Bulging wall(s)
❑	❑	Floor heaving
❑	❑	Frozen soil
❑	❑	Super-imposed loads
❑	❑	Vibration
❑	❑	Depth greater than 5'

PROTECTION METHODS:

(Walls MUST be vertical—NO voids)

SHORING

- ❑ Timber
- ❑ Pneumatic
- ❑ Hydraulic
- ❑ Screw Jacks
- ❑ Trench Shield

UNEVEN, IRREGULAR WALLS

- ❑ Trench Box
- Sloping: q 1:1 (45˚) q 1 ½:1 (34˚)

Yes	No	PLACEMENT OF SPOILS & EQUIPMENT
❑	❑	Spoils at least 2 feet from edge of trench
❑	❑	Equipment at least 2 feet from edge
❑	❑	Backhoe at end of trench
❑	❑	Compressor, etc. at remote location

LADDER LOCATION

❑	❑	Located in protected area
❑	❑	Within 25 feet of safe travel
❑	❑	Secured
❑	❑	Extends 36 inches above the landing
❑	❑	Leads to safe landing

Yes	No	ENVIRONMENTAL CONDITIONS:
❑	❑	Potential hazardous atmosphere?
❑	❑	Gas detector used?

Yes	No	OTHER:
❑	❑	Shoring equip.& materials inspected prior to use?
❑	❑	Is trench SAFE to enter?

COMMENTS:

NOTE All unsafe conditions must be corrected prior to trench entry. If any hazardous conditions are observed, the trench must be immediately evacuated and no one allowed to re-enter until corrective action has been taken.

To be completed prior to each shift and after each rain storm.

TO BE FILLED OUT BY SUPERVISOR/FOREMAN

Excavation Entry Authorized By:

_____

Supervisor/Foreman

APPENDIX 4

Confined Space Entry Permit

11.05 CONFINED SPACE ENTRY PERMIT

Project Name:			
Permit Confined Space Description:			
Location of Permit Required Confined Space:			
Purpose of Entry:			
Date of Entry:		Permit Expiration Time:	
Entry Time:		Exit Time:	

Permit Space Hazards
(Indicate specific hazards with checkmark)

_____Oxygen deficiency (less than 19.5 %)
_____Oxygen enrichment (greater than 23.5 %)
_____Flammable gases/vapors (greater than 10 % of LEL)
_____Carbon Monoxide greater or = to 25 ppm
_____Hydrogen Sulfide greater or = to 10ppm
_____Mechanical hazards
_____Electrical hazards
_____Engulfment hazards
_____Other hazards: _____

Equipment Required For Entry and Work
(Specify as required)

{ } Hardhat
{ } Safety Glasses
{ } Goggles
{ } Face Shield
{ } Gloves
{ } Other _____

Respiratory protection: _____
Atmospheric testing/monitoring: _____
Communication: _____
Non Entry/Rescue Equipment: _____

Preparation for Entry
(Check after steps have been taken)

_____Notification of affected departments of service interruption

_____Isolation methods

{ } Lockout/tagout
{ } Blank/blind
{ } Purge/clean
{ } Inert
{ } Barriers
{ } Ventilate
{ } Atmospheric Test
{ } Other _____

_____Personal awareness

{ } Pre-entry briefing on specific hazards & control methods
{ } Notify contractors of permit & hazard conditions
{ } Other Permits:_____
{ } Hot work
{ } Line breaking
{ } Other: _____

Communication/Alarm Procedures
(To be used by attendants and entrants)

Entry Supervisor
(List by name)

Authorized Entrants
(List by name or attach roster)

Rescue Services

Name of Service	Phone Number	Method of Contact

Authorized Attendants
(List by name)

Testing Record

PRE-ENTRY

	Acceptable Conditions	Result ___: ___ AM/PM	Result ___: ___ AM/PM	Result ___: ___ AM/PM	Result ___: ___ AM/PM	Result ___: ___ AM/PM	Result ___: ___ AM/PM
Oxygen-min.	> 19.5% - < 23.5%						
Flammability	<10% LEL/LFL						
CO	<25ppm						
H2S	<10ppm						
Other (list below)							
Tester Initials							

Monitor Make/Model:_____

Monitor Serial Number:_____ Monitor Calibration Date:_____

Additional Comments:_____

_____

_____

Authorization By Entry Supervisor: Authorization below indicates that the appropriate steps have been taken to minimize the risk associated with confined space entry and all persons related to this entry have been trained on the nature of the hazards and controls involved with this entry.

_____ _____ _____

Printed Name Signature Date/Time

Permit Terminated: Date/Time: _____

Note:

1. Permit must be completed before entry.
2. Permit must be posted at location of entry.
3. Permit valid for 8 hours only.
4. Return permit to project file and your manager when terminated.

APPENDIX 5

Special CAMP

CAMP Special Requirements

Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be pre-determined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.

- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m^3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m^3 or less at the monitoring point.

- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

Special Requirements for Indoor Work With Co-Located Residences or Facilities

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under "Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures" except that in this instance "nearby/occupied structures" would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g., weekends or evenings) when building occupancy is at a minimum.

APPENDIX 6

COVID 19 Protocols

1.10 COVID-19 HEALTH AND SAFETY PLAN

Name of Business:	**LaBella Associates**	
Industry:	**Professional Services and Construction**	
Chief Executive Officer:	**Steve Metzger**	**(585) 295-6223**
President:	**Jeff Roloson**	**(585) 295-6224**
Senior VP Operations:	**Sue Matzat**	**(585) 295-6617**
HR Director:	**Michele Ebenhoch**	**(585) 402-7085**
Safety Coordinator:	**Steven Szymanski**	**(585) 295-6633**
General Counsel:	**Bob Attardo**	**(585) 770-2555**

Background and Purpose

This safety plan details how LaBella Associates will minimize COVID-19 health risks for employees, contractors and visitors. It shall be made available to all employees, and also shall be used as a training guide. This document will be updated as necessary to reflect new developments and/or information related to COVID-19, and shall be conveyed to all affected employees upon update.

About COVID-19
The coronavirus disease 2019, commonly referred to as COVID-19, is a respiratory illness that can spread from person to person. Infection with COVID-19 can cause mild to severe illness and, in some cases, death. Typical symptoms include fever, cough and shortness of breath, but other non-respiratory symptoms have been reported. Asymptomatic cases, or cases with no symptoms at all, have also been documented. According to the U.S. Department of Health and Human Services' Centers for Disease Control and Prevention (CDC), symptoms of COVID-19 may appear in as few as 2 days or as long as 14 days after exposure.

Information posted by the CDC indicates that COVID-19 is a new disease and, therefore, we are still learning about how it spreads and the severity of illness it causes. Per the CDC, the virus is

thought to spread mainly from person-to-person:

- Between people who are in close contact with one another (within about 6 feet).
- Through respiratory droplets produced when an infected person coughs, sneezes or talks.
- These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.
- Some recent studies have suggested that COVID-19 may be spread by people who are not showing symptoms.

Contact with surfaces or objects that have been contaminated by the virus followed by touching of the mouth, nose or possibly eyes is another potential means of contracting the virus. Consequently, the CDC recommends that people practice frequent hand washing or disinfection, and that frequently touched surfaces/objects be regularly cleaned and disinfected.

The CDC has determined that older adults and people of any age that have underlying medical conditions, such as asthma, autoimmune deficiencies, chronic lung disease, serious heart conditions etc., might be at a higher risk for severe illness from COVID-19.

It recently was reported that the best safety measure to take to avoid contracting COVID-19 is to maintain more than six (6) feet of distance from other people, followed by wearing a mask/face covering, and then washing your hands frequently/using hand sanitizer. Doing all of the above provides the greatest protection.

More information concerning COVID-19 is available at the CDC website: www.cdc.gov/coronavirus/2019-ncov.

I. PEOPLE

A. Calling Employees Back to the Office

As states and counties ease stay-at-home restrictions, the process for returning to the office in those regions may begin. However, for reasons of safety and efficiency, the process may not occur as soon as restrictions are lifted. The process also may be done in phases and may require changes to work schedules.

- An office may not reopen unless and until all applicable CDC, State and LaBella guidelines and requirements are met.
- Employees who can work from home are encouraged to continue working from home, provided they are getting their work done effectively and efficiently and billing their best 40 hours each week.
- Anyone who is in a high risk health category shall be strongly encouraged to continue to work from home at all times. Those at higher risk of COVID-19 are:
    - People 65 years old and older
    - People who live in a nursing home or long-term care facility
    - People of all ages with the following underlying medical conditions:
        - chronic lung disease or moderate to severe asthma
        - serious heart conditions
        - immunocompromised, including from cancer treatment, smoking, bone marrow or organ transplantation, immune deficiencies, poorly controlled HIV or AIDS, and prolonged use of corticosteroids and other immune weakening medications
        - severe obesity (body mass index [BMI] of 40 or higher)
        - diabetes
        - chronic kidney disease undergoing dialysis
        - liver disease.

- Consider that if schools/day cares remain closed, a certain percentage of employees may have to continue to work from home.
- In order to reduce the number of employees in the office at the same time, or to separate employees who otherwise work in close proximity to each other, it may be necessary to assign certain employees to work different shifts or days.

If community spread of the virus worsens in a region as a result of restrictions being lifted, work from home procedures may immediately be re-implemented.

B. Physical Distancing

All employees shall maintain a distance of more than 6 feet of separation among individuals at all times, both in the office and in the field, unless safety of the core function of the work activity requires a shorter distance.

Work Stations

- Employees in the office will be seated at workstations so they are at least 6 feet apart in all directions (e.g., side-to-side and when facing one another). When distancing is not feasible between workstations, physical barriers (e.g., cubicle walls, Plexiglas, strip curtains, or other impermeable dividers or partitions) must exist or be erected, provided they do not affect air flow, heating, cooling or ventilation.
- Unacceptable workstation spacing may result in staggering days or shifts for some employees.
- When visiting other workstations, offices and reception areas, individuals must maintain at least 6 feet of separation at all times.

Where practicable, measures should be put in place to reduce bi-directional foot traffic using tape or signs with arrows in narrow aisles, hallways or spaces, and to denote 6 feet of spacing in commonly used areas and any areas in which lines are commonly formed or people may congregate (e.g., copy rooms, kitchens/break rooms, reception areas).

C. Personal Protective Equipment (PPE)

All LaBella employees who work in an office or at a jobsite will wear masks/face coverings. You must wear a mask/face covering, which covers both your nose and mouth, when entering and leaving; anytime you are away from your desk, workstation or private office; while in jobsite trailers; or when it is not possible to maintain 6 feet of physical distancing from other people.

Examples of when masks/face coverings must be worn:

- When entering and exiting an office or jobsite.
- In conference rooms, break rooms, bathrooms, etc.
- When walking around the office, on elevators, and in stairwells.
- When a colleague meets with you at your desk or in your private office, even while maintaining 6 feet of physical distancing.

Masks/face coverings may be removed when:

- Working alone in segregated spaces (e.g., cubicles, private offices), provided no other person is less than 6 feet away in all directions.

- Eating or drinking, while maintaining more than 6 feet of distance from all other people.

This policy is consistent with the CDC guidance for offices, and the requirements of most of the states where LaBella has offices or projects. However, two states – Ohio and Pennsylvania – require that masks/face coverings must be worn at all times. Those state orders govern over this policy. Employees working in Ohio and Pennsylvania, or visiting offices and jobsites in those states, must wear a mask/face covering at all times.

Continuing to work productively from home is the best thing you can do. Individuals infected with the coronavirus can be contagious before displaying symptoms or without ever displaying symptoms. Wearing a mask/face covering primarily protects your colleagues from catching the coronavirus from you, either before you may develop symptoms or if you are asymptomatic, but it provides you with some protection too. Physical distancing and wearing masks/face coverings might mitigate the risk of infection in office workplaces.

LaBella may mandate that all employees must wear a mask/face covering at all times in a particular office or at jobsites in a particular county, when there is worrisome community spread of the virus in that county, and/or if the number of employees in an office or on a floor reaches a higher density.

LaBella shall provide disposable masks/face coverings at no cost to employees, and shall maintain an adequate supply of masks/face coverings for replacement. However, employees are encouraged to purchase their own masks/face coverings for improved comfort, durability and aesthetics. All masks/face coverings must provide full coverage of the nose and mouth. Employees should provide their own masks/face coverings to be worn off duty from work.

Masks/face coverings must be cleaned or replaced after use or when damaged or soiled, may not be shared, and should be properly stored or discarded.

Guidelines for wearing masks/face coverings:

- Before putting on a mask/face covering, clean your hands with alcohol-based hand sanitizer or soap and water.
- Cover mouth and nose with mask/face covering and make sure there are no gaps between your face and the mask/face covering.
- Avoid touching the mask/face covering while using it; if you do, clean your hands with alcohol-based hand sanitizer or soap and water.
- Avoid pulling the entire mask/face covering down or tucking it under your chin - it shall either be fully on or taken off.
- Replace the mask/face covering with a new one as soon as it is damp. If using a homemade cloth mask/face covering, it shall be routinely washed, depending on frequency of use.
- To remove the mask/face covering: remove it from behind your ears (do not touch the front of the mask/face covering); discard immediately in a closed bin; or if it is not soiled, place it into a closed paper bag for storage; then immediately clean hands with alcohol-based hand sanitizer or soap and water.

D. Personal Hygiene

Employees shall practice good personal hygiene while in the office or on the jobsite. This shall include the following safe practices:

- Wash hands frequently with soap and water for at least 20 seconds.

- Use hand sanitizer containing at least 60% alcohol when hand washing is not practical.
- Avoid touching your mouth, nose or eyes prior to washing or sanitizing your hands.
- Wash or sanitize hands prior to, and after removal of face masks.

Soap and water, or hand sanitizer, shall be provided and maintained at each office and jobsite, and in LaBella "pool" vehicles.

E. Travel

Business and Personal Travel

- Non-essential business travel is prohibited.
- Essential business travel is discouraged. The preference is for using Skype, Zoom, Teams, WebEx or conference calls as much as practicable.
- Employees must have Division Director approval for any type of air travel or hotel stays.
- Travel by public transportation (planes/trains/buses) and hotel stays will require a 14 day quarantine upon return from travel. During quarantine, employees cannot report to a LaBella office or a client's office, but may report to a jobsite, provided they strictly follow all guidelines in this document.

LaBella "Pool" Vehicles

- Drivers shall clean/disinfect all commonly touched surfaces of the vehicle prior to, and after, each use.
- Cleaning supplies can be obtained through Steven Szymanski or your local office.
- Drivers shall ensure there are ample supplies left in the vehicle for the next user. This includes wipes, gloves and trash bags.
- Drivers shall properly dispose of all used/soiled materials prior to returning the vehicle.

II. PLACES

A. Preparing the Workplace

To prepare for a full working staff again, supplies must be available, to include:

- Paper towels
- Hand soap
- Hand sanitizer
- Disinfectant Wipes
- Rubber Gloves
- Masks/Face Coverings
- Additional wastebaskets

- ➢ Inventories of these items shall increase as they become available.
- ➢ Additional hand sanitizer stations should be installed in common areas, such as entry/exit areas, reception areas, restroom areas, coffee/snack areas, and conference rooms.

- Hygiene posters shall be installed at elevators and stairwells, reception areas, break rooms, restrooms, and conference rooms.

B. Cleaning and Disinfection

Regular Office Cleaning

- Janitorial/cleaning services shall be increased however, hand hygiene, safe distancing and masks/face coverings will continue to be our best defense during the pandemic until further notice.
- Regular cleaning and disinfection of offices shall occur, with more frequent cleaning and disinfection for high risk areas used by many individuals and for frequently touched surfaces, such as elevator and door keypads, doorknobs, handles, light switches, tables, countertops, desks, phones, keyboards, toilets, faucets and sinks. In New York, logs must be maintained that include the date, time, and scope of cleaning and disinfection.
- Cleaning and disinfection shall be performed in areas, on surfaces, and pursuant to schedules, in accordance with CDC and State guidelines and requirements.
- If surfaces are dirty, they shall be cleaned by janitorial services using a detergent or soap and water prior to disinfection. To disinfect, they shall use products that meet the CDC's criteria for use against COVID-19.
- For disinfection, most common EPA-registered household disinfectants shall be effective. Follow the manufacturer's instructions for all cleaning and disinfection products (e.g., concentration, application method and contact time, etc.).
- Appropriate cleaning/disinfection supplies, such as disposable wipes, shall be provided so that shared and frequently touched surfaces (e.g., doorknobs, conference room touchscreens, remote controls, copiers, plotters, scanners, and other work tools and equipment) can be wiped down by employees before and after each use.
- All items you touch should be considered contaminated, unless you are in your personally cleaned and maintained work space. It will be important for you to wash with soap and water/sanitize your hands after use of all common items such as tools, copiers, printers, machines, vehicles, elevators, door knobs, security keypads, faucets, coffee machines, etc. The use of gloves may seem like a good idea, but they are not recommended as a replacement for proper hand hygiene.
- Employees shall clean and disinfect their own personal work spaces to his or her standards. This shall include performing routine cleaning and disinfection of workstations, keyboards, telephones, and other related surfaces.

C. Communication

Signs must be posted throughout the office to remind individuals to:

- Cover their nose and mouth with a mask or cloth face-covering.
- Properly store and, when necessary, discard Personal Protective Equipment (PPE).
- Adhere to physical distancing instructions.
- Report symptoms of or exposure to COVID-19, and how employees should do so.
- Follow hand hygiene and cleaning and disinfection guidelines.

D. Gatherings in Enclosed Spaces

In-person gatherings (e.g., meetings, conferences) must be limited to the greatest extent possible, and other methods, such as video and telephone conference calls, should be used whenever possible. In-person meetings should be held in open, well-ventilated spaces, and individuals must maintain more than 6 feet of distance between one another.

Tightly confined spaces (e.g., elevators) will be occupied by only one individual at a time, unless all occupants are wearing masks/face coverings. If a space is occupied by more than one person, the total number of occupants shall be limited to no more than 50% of the maximum occupancy as set by the certificate of occupancy. Ventilation with outdoor air should be increased to the greatest extent possible (e.g., opening windows and doors in individual offices and conference rooms).

Collaboration areas/ Break Rooms/ Conference Rooms

- Consider closing and prohibiting use of common areas, such as collaboration areas, conference rooms, and break rooms, including food marts, vending machines and coffee machines.
- To the extent such spaces remain open, seating arrangements must be modified to ensure that individuals are at least 6 feet apart in all directions (e.g., side-to-side and when facing one another). Where possible, chairs shall be removed from conference rooms to the point of facilitating safe distancing and stored in a secure location.
- Conference room scheduling software shall be updated to reflect that the rooms hold fewer occupants. If not possible, then signs shall be installed reminding occupants to maintain safe, physical distancing. (*Conference calls shall continue to replace in-person meetings wherever possible and should be promoted as a first option.)*
- The recommended best practice is that employees should refrain from eating lunch together for the time-being. If employees eat lunch together, they must maintain more than 6 feet of separation both side-to-side and when facing one another.

Reception Areas

- Temporary Plexiglas "sneeze guard" screens shall be installed at reception desks or check-in points.
- Seating arrangements must be modified to ensure that individuals are at least 6 feet apart in all directions (e.g., side-to-side and when facing one another). Where possible, chairs shall be removed from reception areas to the point of facilitating safe distancing and stored in a secure location.
- To maintain hygiene, magazines, corporate swag, and pens should be removed from the reception areas.
- Visitors must sign-in on a visitor log which will be provided to each office.
- Hand sanitizer dispensers should be installed and located in plain view.

E. Workplace Activity

Measures must be taken to reduce interpersonal contact and congregation, through methods such as:

- Adjusting workplace hours.
- Reducing in-office workforce to accommodate social distancing guidelines.

- Shifting design (e.g., A/B teams).
- Avoiding multiple teams working in one area by staggering scheduled tasks and using signs to indicate occupied areas.

The sharing of objects, such as laptops, notebooks, touchscreens, and writing utensils, shall be limited, and employees are discouraged from touching shared surfaces, such as conference tables, door knobs, keypads, elevator buttons and coffee machines. When in contact with shared objects or frequently touched areas, employees are encouraged to wash hands with soap and water, or to use hand sanitizer, before and after contact.

Vehicles, Tools, Field Offices and Other Equipment

- Staff shall be minimized to only those required to complete the work.
- All employees shall commute to the site in separate vehicles.
- To the extent possible, vehicles, hand tools and power equipment shall be dedicated for use by one individual on the jobsite. In the event this is not possible, time shall be allowed for disinfection of all items prior to, and after, each use.
- Similarly, heavy equipment shall be dedicated to one operator to the extent possible. All project staff shall be informed each day of the operator designated for each piece of equipment during the morning tailgate meeting. Should project conditions dictate the use of heavy equipment by multiple operators, commonly used surfaces of the equipment shall be disinfected prior to, and after, each use.
- Offices, portable or otherwise, shall be disinfected at least once each day.

Interactions with Members of the General Public

Jobsites may restrict public access, however, in the event there may be minimal interaction with the general public, the following procedures shall be applied:

- A sign shall be posted at the perimeter of the work area indicating that, due to COVID-19 considerations, all questions or comments regarding the project should be communicated via telephone or e-mail using the contacts listed.
- Project staff is to minimize interaction with the public.
- One person shall be designated to handle all interactions with members of the public and shall utilize remote communications if possible.
- Social distancing and face covering guidelines shall be observed during any interaction with the general public.

Office and Jobsite Visitors

All visitors shall be instructed by their host on the following procedures prior to their visit:

- Visitors who are feeling ill shall not visit our offices or jobsites.
- Visitors must wear a mask/face covering immediately prior to entering our offices and jobsites, and at all times while in our offices and at our jobsites.
- Visitors shall report to reception or jobsite trailers upon arrival, sanitize their hands, and complete a visitor log. All visitors must provide contact information. In the event we subsequently learn of an employee, contractor or another visitor who tests positive for COVID-19 or develops symptoms of COVID-19, this information may then be used by LaBella and/or local health departments to contact the visitor regarding potential exposure to the coronavirus.
- Visitors must sign in and sign out.

- Visitors must be escorted at all times.
- Wherever possible, meetings with visitors in our offices should occur in conference rooms closest to entrances and reception areas in order to minimize visitors traveling through our offices.
- In New York, all visitors must complete a health screening questionnaire immediately prior to visiting our offices and jobsites. If the visitor answers "Yes" to any of the questions regarding COVID-19 symptoms, positive test results, or close contact with a person confirmed or suspected of having COVID-19, the visitor shall be prohibited from entering our office or jobsite.

III. PROCESS

A. Screening

All Employees

- All employees are expected to monitor their health conditions daily, and must stay home if they are not feeling well.
- All employees are strongly encouraged each workday to take their temperature at home immediately before leaving for the office or jobsite. If you have a fever (a temperature of 100.4 degrees or higher), you must stay home and continue to monitor your health.

New York Offices and Jobsites

- All employees who will be or who are working in a New York office location or at a New York project site must complete a health screening questionnaire immediately before leaving home or entering any office or project site in NY. This questionnaire must be completed every day prior to reporting to an office or project site for any length of time.
- The questionnaire must ask whether individuals have (1) experienced any COVID-19 symptoms in the past 14 days, (2) tested positive for COVID-19 in the past 14 days, and/or (3) had close contact with any confirmed or suspected COVID-19 cases in the past 14 days.
- The questionnaire does not have to be completed - and should not be completed - on any day that you are working from home, not working (like PTO) or will not be in NY. However, you must fill out the questionnaire if you will be stopping into an office or a project site even for just a brief time.
- If you answer "YES" to any of the health questions, you must not report to the office or project site. Instead, contact HR for further direction.
- Assessment responses shall be reviewed every day, and such review must be documented.

Pennsylvania Offices and Jobsites

- All employees who will be or who are working in a Pennsylvania office location or at a Pennsylvania project site must take their temperature daily before entering the office or jobsite.
- If you have a fever (a temperature of 100.4 degrees or higher), you must not enter the office or project site. Instead, contact HR for further direction.

- LaBella is prohibited by law from keeping records of employee temperatures.

Reporting Illness
If an employee experiences symptoms of COVID-19, or someone observes that another employee is exhibiting symptoms of COVID-19, it must be reported to the Director of HR, Michele Ebenhoch, immediately. If COVID-19 is suspected, the employee will be sent home and asked to contact a healthcare professional.

- Symptoms of COVID-19 are:
    - Fever or chills
    - Cough
    - Shortness of breath or difficulty breathing
    - Fatigue
    - Muscle or body aches
    - Headache
    - New loss of taste or smell
    - Sore throat
    - Congestion or runny nose
    - Nausea or vomiting
    - Diarrhea
- If a COVID-19 test is warranted by the healthcare professional, the employee shall complete the test and remain home awaiting the results.
- If COVID-19 is suspected by a healthcare professional, but testing is unavailable, this shall be treated as a positive test result.

Positive Test or Symptoms of COVID-19
An employee who tests positive for COVID-19 or experiences symptoms of COVID-19 shall not return to work until:

- Completing at least 10 days of isolation since the positive test/onset of symptoms, and
- He or she has received 2 negative tests in a row, at least 24 hours apart (pending test availability), or
- If he or she is not tested again, then only when:
    - Symptoms have improved and the employee is capable of working; and
    - The employee is free of fever for at least 72 hours, without the use of fever reducing medications.

COVID-19 Exposure (close contact)

- Close contact is defined as being within 6 feet of an infected person for at least 10 minutes at any time during the period beginning 48 hours before the infected person first developed symptoms of COVID-19 or took a test that returned positive and continuing until the time the infected person was isolated.
- If an employee has had close contact with a person (e.g., another employee or a member of your household) with COVID-19 and the employee does <u>not</u> have symptoms of COVID-19 him or herself, the employee must self-quarantine for 14 days.
- If an employee has had close contact with a person with COVID-19 and the employee is or becomes symptomatic, the employee should notify HR and follow the above

protocols for a positive case. Even if the symptoms are deemed not related to COVID-19, the employee must complete at least 10 days of isolation from the onset of symptoms.

B. Contact Tracing and Disinfection of Contaminated Areas

Each office and jobsite must maintain a continuous log of every person, including workers and visitors, who may have close contact with other individuals at the work site or area, excluding deliveries that are performed with appropriate PPE or through contactless means. For each location, an employee shall be designated to be in charge of maintaining the log of each person that enters the site.

If an employee tests positive for COVID-19, LaBella shall immediately notify state and local health departments, and cooperate with contact tracing efforts, including notification of potential contacts, such as workers or visitors who had close contact with the infected individual, while maintaining confidentiality required by state and federal law and regulations.

In the event of a confirmed case of COVID-19 in the workplace, all employees in that office shall be notified and advised to self-monitor for symptoms for at least 14 days from the date of possible exposure. Employees who were in close contact with the infected employee may be instructed to self-quarantine/work from home for 14 days while self-monitoring for symptoms. During that time, if any employee experiences symptoms of COVID-19, it must be reported to the Director of HR, Michele Ebenhoch.

All confirmed cases of COVID-19 that occur in the workplace, and meet the criteria for OSHA reporting, shall be so reported, but shall otherwise be handled in the strictest confidence. Employee health information, including contracting COVID-19, is confidential medical information, and LaBella is prohibited by law from disclosing that a particular employee has COVID-19. We will only be able to inform employees that a "co-worker" in their office or with whom they were in close contact has tested positive or has symptoms of COVID-19.

Cleaning and disinfection if someone is suspected or confirmed to have COVID-19

- Janitorial/cleaning services shall perform enhanced cleaning and disinfection after persons suspected/confirmed to have COVID-19 have been in the facility.
- If more than seven days have passed since the person who is suspected or confirmed to have COVID-19 visited or used the facility, additional cleaning and disinfection is not necessary, but routine cleaning and disinfection will continue.
- Close off areas used by the person who is suspected or confirmed to have COVID-19. The entire office or project site does not have to be closed, if it is possible to just close off the affected area(s).
- Common areas (e.g., elevators, lobbies, building entrances) must be closed and cleaned and disinfected.
- Where possible, open outside doors and windows or use ventilation fans to increase air circulation in the area.
- Wait 24 hours before cleaning and disinfection. If 24 hours is not feasible, wait as long as possible.

- Clean and disinfect all areas used by the person suspected or confirmed to have COVID-19, such as workstations, bathrooms, common areas, and shared equipment.
- Once the area has been appropriately cleaned and disinfected, it can be reopened for use.
    - Employees who did not have close contact with the person suspected or confirmed to have COVID-19 can return to the work area immediately after cleaning and disinfection.
    - Employees who did have close contact will undergo a 14-day quarantine.

IV. OTHER

The aforementioned policies and procedures are subject to change in order to meet or exceed CDC recommendations, as well as to remain compliant with federal and local governments and health officials.

Employees failing to follow the aforementioned procedures shall be subject to disciplinary measures, as described in the Disciplinary Policy 1.09 of the LaBella Safety Manual.

CAMP Special Requirements

Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be pre-determined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.

- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m^3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m^3 or less at the monitoring point.

- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

Special Requirements for Indoor Work With Co-Located Residences or Facilities

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under "Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures" except that in this instance "nearby/occupied structures" would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g., weekends or evenings) when building occupancy is at a minimum.

Appendix 1A
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. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. 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 upwind and 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 (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

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

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix 1B
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

APPENDIX G

QAPP

Quality Control Program (QCP)

Site Location:

Ebenezer Plaza II
NYSDEC BCP Site No. C224241
583 Christopher Ave
Brooklyn, New York

March 2024

300 State Street, Suite 201 | Rochester, NY 14614 | p 585-454-6110 | f 585-454-3066
www.labellapc.com

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1.0 Introduction

LaBella's Quality Control Program (QCP) is an integral part of its approach to environmental investigations. By maintaining a rigorous QC program, our firm is able to provide accurate and reliable data. This QCP should be followed during implementation of environmental investigation and remediation projects and should serve as a basis for quality control methods to be implemented during field programs. Project-specific requirements may apply.

The QC program contains procedures which allow for the proper collection and evaluation of data and documents that QC procedures have been followed during field investigations. The QC program presents the methodology and measurement procedures used in collecting quality field data. This methodology includes the proper use of equipment, documentation of sample collection, and sample handling procedures.

Procedures used in the firm's QC program are compatible with federal, state, and local regulations, as well as, appropriate professional and technical standards.

This QC program includes the following:

- QC Objectives and Checks
- Field Equipment, Handling, and Calibration
- Sampling and Logging Techniques
- Sample Handling, Packaging, and Shipping
- Laboratory Requirements and Deliverables

It should be noted that project-specific work plans (e.g., Remedial Investigation Work Plans) may have project specific details that will differ from the procedures in this QC program. In such cases, the project-specific work plan should be followed (subsequent to regulatory approval).

The characteristics of major importance for the assessment of generated data are accuracy, precision, completeness, representativeness, and comparability. Application of these characteristics to specific projects is addressed later in this document. The characteristics are defined below.

1.1 Accuracy

Accuracy is the degree of agreement of a measurement or average of measurements with an accepted reference or "true" value and is a measure of bias in the system.

1.2 Precision

Precision is the degree of mutual agreement among individual measurements of a given parameter.

1.3 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under correct normal conditions.

1.4 Representativeness

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition

Careful choice and use of appropriate methods in the field will ensure that samples are representative. This is relatively easy with water or air samples since these components are homogeneously dispersed. In soil and sediment, contaminants are unlikely to be evenly distributed, and thus it is important for the sampler and analyst to exercise good judgment when removing a sample.

1.5 Comparability

Comparability expresses the confidence with which one data set can be compared to another. The data sets may be inter- or intra- laboratory.

2.0 Measurement of Data Quality

2.1 Accuracy

Accuracy of a particular analysis is measured by assessing its performance with "known" samples. These "knowns" take the form of EPA standard reference materials, or laboratory prepared solutions of target analytes spiked into a pure water or sample matrix. In the case of gas chromatography (GC) or GC/MS (mass spectrometry) analyses, solutions of surrogate compounds are used. These solutions can be spiked into every sample and are designed to mimic the behavior of target analytes without interfering with their determination.

In each case the recovery of the analyte is measured as a percentage, correcting for analytes known to be present in the original sample if necessary, as in the case of a matrix spike analysis. For EPA supplied known solutions, this recovery is compared to the published data that accompany the solution.

For the firm's prepared solutions, the recovery is compared to EPA-developed data or the firm's historical data as available. For surrogate compounds, recoveries are compared to EPA CLP acceptable recovery tables.

If recoveries do not meet required criteria, then the analytical data for the batch (or, in the case of surrogate compounds, for the individual sample) are considered potentially inaccurate. The analyst or his supervisor must initiate an investigation of the cause of the problem and take corrective action. This can include recalibration of the instrument, reanalysis of the QC sample, reanalysis of the samples in the batch, or flagging the data as suspect if the problems cannot be resolved. For highly contaminated samples, recovery of the matrix spike may depend on sample homogeneity. As a rule, analyses are not corrected for recovery of matrix spike or surrogate compounds.

2.2 Precision

Precision of a particular analysis is measured by assessing its performance with duplicate or replicate samples. Duplicate samples are pairs of samples taken in the field and transported to the laboratory as distinct samples. Their identity as duplicates is typically not known to the laboratory. For most purposes, precision is determined by the analysis of replicate pairs (i.e., two samples prepared at the laboratory from one original sample). Often in replicate analysis the sample chosen

for replication does not contain target analytes so that quantitation of precision is impossible. For EPA CLP analyses, replicate pairs of spiked samples, known as matrix spike/matrix spike duplicate samples, are used for precision studies. This has the advantage that two real positive values for a target analyte can be compared.

Precision is calculated in terms of Relative Percent Difference (RPD).

- Where X_1 and X_2 represent the individual values found for the target analyte in the two replicate analyses or in the matrix spike/matrix spike duplicate analyses.
- RPDs must be compared to the method RPD for the analysis. The analyst or his supervisor must investigate the cause of RPDs outside stated acceptance limits. This may include a visual inspection of the sample for non-homogeneity, analysis of check samples, etc. Follow-up action may include sample reanalysis or flagging of the data as suspect if problems cannot be resolved.
- During the data review and validation process, field duplicate RPDs are assessed as a measure of the total variability of both field sampling and laboratory analysis.

2.3 Completeness

Completeness for each parameter is calculated as follows:

- The firm's target value for completeness for all parameters is 100%. A completeness value of 95% will be considered acceptable. Incomplete results will be reported to the site managers. In planning the field sample collection, the site manager will plan to collect field duplicates from identified critical areas. This procedure should assure 100% completeness for these areas.

2.4 Representativeness

The characteristic of representativeness is not quantifiable. Subjective factors to be taken into account are as follows:

- The degree of homogeneity of a site;
- The degree of homogeneity of a sample taken from one point in a site; and
- The available information on which a sampling plan is based.

To maximize representativeness of results, sampling techniques and sample locations will be carefully chosen so that they provide laboratory samples representative of the site and the specific area. Within the laboratory, precautions are taken to extract from the sample bottle an aliquot representative of the whole sample. This includes premixing the sample and discarding pebbles from soil samples.

2.5 Comparability

Comparability of laboratory tests is ensured by utilizing only New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP)- certified laboratories. This certification is the basis for demonstrating proficiency in testing requirements. Using ELAP certified laboratories will result in consistency amongst analytical data within a specific project and across projects.

3.0 Quality Control Targets

Target values for detection limit, percent spike recovery and percent "true" value of known check standards, and RPD of duplicates/replicates are included in the QCP, Analytical Procedures. Note that tabulated values are not always attainable. Instances may arise where high sample concentrations, non-homogeneity of samples, or matrix interferences preclude achievement of target detection limits or other quality control criteria. In such instances, the firm will report reasons for deviations from these detection limits or noncompliance with quality control criteria.

4.0 Soil Boring Advancement & Monitoring Well Installation Procedures

Soil and groundwater sampling shall be conducted in accordance with NYSDEC Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation dated May 3, 2010 and any Site-specific work plans.

Prior to drilling, all drill sites will be cleared with appropriate utility companies to avoid potential accidents relating to underground utilities. Utility drawings will be reviewed, if available.

4.1 Drilling Equipment and Techniques

Direct Push Geoprobe Advanced Borings:

Soil borings and monitoring wells will be advanced with a Geoprobe direct push sampling system. The use of direct push technology allows for rapid sampling, observation, and characterization of relatively shallow overburden soils. The Geoprobe utilizes a four to five-foot macrocore sampler, with disposable polyethylene sleeves. Soil cores will be retrieved in four or five-foot sections, and can be easily cut from the polyethylene sleeves for observation and sampling. The macrocore sampler will be decontaminated between boring locations using an alconox and water solution.

Prior to initiating drilling activities, the Macrocores, drive rods, and pertinent equipment, will be steam cleaned or washed with an alconox and water solution. This cleaning procedure will also be used between each boring. Throughout and after the cleaning processes, direct contact between the equipment and the ground surface will be avoided. Plastic sheeting and/or clean support structures (e.g., pallets, sawhorses) will be used.

Test borings will be advanced with 2-inch (or larger) inside diameter (ID) direct push Macrocore through overburden soils. Drilling fluids, other than potable water will not be allowed without special consideration and agreement from NYSDEC. The use of lubricants is also not allowed unless approved by the NYSDEC representative.

During the drilling, a properly calibrated photoionization detector (PID) will be used to screen soil cores retrieved from the Macrocores.

Direct Push Geoprobe advanced groundwater-monitoring wells typically utilize minimum 1.25-inch threaded flush joint PVC pipe with 0.010-in. slotted screen or pre-packed well screens. PVC piping used for risers and screens will conform to the requirements of ASTM-D 1785 Schedule 40 pipe.. All materials used to construct the wells will be NSF/ASTM approved. Solvent PVC glue shall not be used at any time in the construction of the wells. The bottom of the screen shall be sealed with a treated cap or plug. No lead shot or lead wool is to be employed in sealing the bottom of the well or

for sealant at any point in the well. Stainless steel wells or pre-packed PVC wells may be used if specified in the work plan and approved by the NYSDEC.

Hollow-Stem Auger Advanced Borings:

The drilling and installation of soil borings and monitoring wells will be performed using a rotary drill rig which will have sufficient capacity to perform 4 1/4-inch inside diameter (ID) hollow-stem auger drilling in the overburden, retrieve Macrocore or split-spoon samples, and perform necessary rock coring using NX, NQ, HQ or core barrel size as specified in the project-specific work plan. The borehole may be reamed up to 5 1/2-inch diameter prior to monitoring well installation as cased hole in the bedrock, or may be left as open bedrock hole, with regulatory concurrence. Equipment sizes and diameters may vary based on project-specific criteria. Any investigative derived waste generated during the advancement of soil borings and monitoring well installations will be containerized and characterized for proper disposal.

Prior to initiating drilling activities, the augers, rods, Macrocore, split spoons, and other pertinent equipment will be steam cleaned or washed with an alconox and water solution. This cleaning procedure will also be used between each boring. Steam cleaning activities will be performed in a designated on-site decontamination area. During and after the cleaning processes, direct contact between the equipment and the ground surface will be avoided. Plastic sheeting and/or clean support structures (e.g., pallets, sawhorses) will be used.
Test borings will be advanced with 4 1/4-inch (ID) hollow stem augers through overburden, and cored with a NX, NQ, HQ or core barrel size as specified in the project-specific work plan sized diamond core barrels in competent rock, driven by truck-, track-, or trailer-mounted drilling equipment. Alternative methods of drilling or equipment may be allowed or requested for project-specific criteria, but must be approved by the NYSDEC. Drilling fluids, other than water from a NYSDEC-approved source, will not be allowed without special consideration and agreement from NYSDEC. The use of lubricants is also not allowed unless approved by the NYSDEC representative.

During the drilling, a (PID) will be used to screen soils retrieved from the split spoons or Macrocores. In the event that headspace field screening is required to determine the presence of VOCs in soil samples, the following procedure will be utilized:

- Soils from core will be inserted into an airtight glass jar and/or disposable polyethylene bag, and the container will be sealed immediately
- After sealing the container, the soils will be shaken or kneaded for 10-15 seconds to release volatiles into the headspace of the sealed container
- The PID inlet will be inserted into the headspace of the airtight container to screen soil samples for VOCs

During the drilling, visual screening will be utilized to identify any Non-Aqueous Phase Liquid (NAPL) in the soil cores.

Where bedrock wells are required, test borings shall be advanced into rock with NX, NQ, HR (or similar) coring tools. Only water from an approved source shall be used in rock coring. The consultant shall monitor and record the petrology, core recovery, fractures, rate of advance, and water lost or produced in each test boring. The Rock Quality Determination (RQD) value shall be calculated for each 5-foot core. Each core shall be screened with a PID upon extraction. All core samples shall be retained and stored by the consultant in an approved wooden core box for a period of not less than one year.

The method selected may be percussion or rotary drilling. The method and equipment selected must be capable of penetrating the bedrock at each well location to a depth required by the work plan.

Bedrock well installation will involve construction of a rock socket in the weathered bedrock. The socket will be drilled into the top of rock (typically 1-ft. to 5-ft. into the top of rock) at each bedrock well location to allow a permanent steel casing to be grouted securely in place prior to completion of the well. The purpose for this is to provide a seal at the overburden/bedrock interface and into the upper bedrock surface, to prevent the entrance of overburden water into the bedrock. After the grout and casing have set up for a minimum of 12 hours, the remaining bedrock can be NX (or similar) cored through the steel casing to a depth determined by the project-specific work plan.

Bedrock wells will either be open coreholes in the rock or consist of threaded, flush-joint PVC piping. Construction will vary depending on the project and as such, specific construction of the wells will be detailed in the project-specific work plan. Bedrock wells which do utilized PVC piping for risers and screens will conform to the requirements of ASTM-D 1785 Schedule 40 pipe. All materials used to construct the wells will be NSF/ASTM approved.

Screen and riser sections shall be joined by flush-threaded coupling to form watertight unions that retain 100% of the strength of the casing. Solvent PVC glue shall not be used at any time in the construction of the wells. The bottom of the screen shall be sealed with a treated cap or plug. No lead shot or lead wool is to be employed in sealing the bottom of the well or for sealant at any point in the well.

4.1.1 Artificial Sand Pack

When utilized, granular backfill will be chemically and texturally clean, inert, siliceous, and of appropriate grain size for the screen slot size and the host environment The sand pack will be installed using a tremie pipe, when possible (i.e., a tremie pipe may not fit into smaller, 2-in. diameter boreholes). When utilized, the well screen and casing will be installed, and the sand pack placed around the screen and casing to a depth extending at least 2-ft.. A pre-packed well screen may be used if pre-approved by the NYSDEC.

An artificial sand pack will not be utilized in bedrock wells without screens (i.e., open borehole wells).

4.1.2 Bentonite Seal

A minimum 2-ft. thick seal will be placed directly on top of the sand pack, and care will be taken to avoid bridging. In the event that Site geology does not allow for a 2-ft. seal (e.g., only 1-ft. of space remains between the top of the sand pack and ground surface), the remaining space in the annulus will be filled with bentonite.

4.1.3 Grout Mixture

Upon completion of the bentonite seal, the well may be grouted with a non-shrinking cement grout (e.g., Volclay^{R}) mix to be placed from the top of the bentonite seal to the ground surface. The cement grout shall consist of a mixture of Portland cement (ASTM C 150) and water, in the proportion of not more than 7 gallons of clean water per bag of cement (1 cubic foot or 94 pounds). Additionally, 3% by weight of bentonite powder may be added.

4.1.4 Surface Protection

At all times during the progress of the work, precautions shall be used to prevent tampering with or

the entrance of foreign material into the well. Upon completion of the well, a suitable cap shall be installed to prevent material from entering the well. Where permanent wells are to be installed, the well riser shall be protected by a flush mounted road box set into a concrete pad or locking well cap for stick-up wells. A concrete pad, sloped away from the well, shall be constructed around the flush mount road box or stick-up casing at ground level.

Any well that is to be temporarily removed from service or left incomplete due to delay in construction shall be capped with a watertight cap.

4.2 Surveying

Coordinates and elevations will be established for each monitoring well and sampling location. Elevations to the closest 0.01 foot shall be used for the survey. These elevations shall be referenced to a regional, local, or project-specific datum. The location, identification, coordinates, and elevations of the wells will be plotted on maps with a scale large enough to show their location with reference to other structures at each site.

4.3 Well Development

After completion of the well, but not sooner than 24 hours after grouting is completed, development will be accomplished using pumping, bailing, or surge blocking. No dispersing agents, acids, disinfectants, or other additives will be used during development or introduced into the well at any other time. During development, water will be removed throughout the entire water column by periodically lowering and raising the pump intake (or bailer stopping point).

Development water will be either properly contained and treated as waste until the results of chemical analysis of samples are obtained or discharged on Site as determined by the Site-specific work plans and/or consultation with the NYSDEC representatives on Site.

The development process will continue until removal of a minimum of 110% of the water lost during drilling, three well volumes; whichever is greater, or as specified in the work plan. In the event that limited recharge does not allow for the recovery of all drilling water lost in the well or three (3) well volumes, the well will be allowed to stabilize to conditions deemed representative of groundwater conditions. Stabilization periods will vary by project but will be confirmed with the NYSDEC prior to sampling.

4.4 PFAS Soil Sampling Procedure

PFAS sampling will be conducted in accordance with current NYSDEC PFAS Guidance. Soil samples for PFAS analysis will be collected using PFAS-Free equipment. Samples will be collected in bottleware provided by the laboratory. Because PFAS are found in numerous everyday items, the following special precautions will be taken during sampling activities:

- No use of Teflon®-containing materials (e.g., Teflon® tubing, bailers, tape, sample jar lid liners, plumbing paste).
- No use of low density polyethylene (LDPE)-containing materials.
- No Tyvek® clothing will be worn by samplers.
- Clothes treated with stain-resistant or rain-resistant coatings (e.g., Gortex®) will be not be worn by samplers.
- All clothing worn by sampling personnel must have been laundered multiple times.

- No fast food wrappers, disposable cups or microwave popcorn will be within the vicinity of the wells/ samples.
- There will be no use of chemical (blue) ice packs, aluminum foil, or Sharpies® within the vicinity of the wells/ samples.
- No use of sunscreen, insect repellants, cosmetic, lotions or moisturizers will be allowed by sampling personnel the day of sampling.
- If any of the above items are handled by the field personnel prior to sampling activities, field personnel will wash their hands thoroughly with soap and water prior to any sampling activities.
- Powder-free nitrile gloves will be worn during all sample collection activities.

Quality assurance/ quality control (QA/QC) samples for PFAS sampling will include one (1) field duplicate, one (1) matrix spike / matrix spike duplicates (MS/MSD) and one (1) equipment blank. The procedures and rationale for collecting these samples are described below.

- **Field duplicate** – Sample will be used to assess the variability in concentrations of samples from the same well due to the combined effects of sample processing in the field and laboratory as well as chemical analysis.

- **Matrix spike/matrix spike duplicate** – Sample will be used to provide information about the effect of the sample matrix on the design and measurement methodology used by the laboratory.

- **Equipment blank** – Sample will be collected to help identify possible contamination from sampling equipment (i.e., shovel, soil core, etc.).

PFAS samples will be submitted to an Environmental Laboratory Accreditation Program (ELAP) certified laboratory for analysis of the full PFAS target analyte list (21 compounds listed in the NYSDEC Guidance) via modified USEPA Method 537 with a method detection limit not to exceed 1 ug/kg. Note, the laboratory utilized will be ELAP certified for PFOA and PFOS in drinking water by EPA method 537 or ISO 25101 as ELAP does not currently offer certification for PFAS compounds in matrices other than finished drinking water.

5.0 Geologic Logging and Sampling

At each investigative location, borings will be advanced through overburden using either a drill rig and hollow-stem auger or direct push technology (split spoons or Macrocore). Soils will be evaluated for visual and olfactory evidence of impairment (i.e., staining, odors, and elevated PID readings) by a qualified individual. Sampling devices will be decontaminated according to procedures outlined in the Decontamination section of this document. When utilized, split-spoon samplers will be driven into the soil using a minimum 140-pound safety hammer and allowed to free-fall 30-inches, in accordance with ASTM-D 1586-84 specifications. The number of blows required to drive the sampler each 6-inches of penetration will be recorded. When required, samples will be stored in the appropriate bottleware (refer to Section 10) until analysis or deemed unnecessary.

In the event that maximum design depth of investigation is reached and hydrogeologic conditions are not suitable for well installation, the maximum drilling depth may be revised.

Boulders and bedrock encountered during well installation may be cored by standard diamond-core

drilling methods using an NX, NQ, HQ size core barrel or other if specified in the project-specific work plan. All rock cores recovered will be logged by a qualified individual, and stored in labeled wooden core boxes. The cores will be stored by the firm until the project is completed or for at least one year. Drilling logs will be prepared by a qualified individual who will be present during drilling operations. One copy of each field boring and well construction log and groundwater data, will typically be submitted as part of the investigation summary report (e.g., Remedial Investigation Report). The RQD value shall be calculated for each 5-foot section. Information provided in the logs shall include, but not be limited to, the following:

- Date(s), test hole identification, and project identification;
- Name of individual developing the log;
- Name of driller and assistant(s);
- Drill, make and model, auger size;
- Identification of alternative drilling methods used and justification thereof (e.g., rotary drilling with a specific bit type to remove material from within the hollow stem augers);
- Standard penetration test (ASTM D-1586) blow counts;
- Field diagram of each monitoring well installed with the depth to bottom of well/ screen, top of screen, length of riser, depth of steel casing, depths of sand pack, bentonite seal, grout, type of well completion etc.;
- Depth of each change of stratum;
- Identification of the material of which each stratum is composed, according to the USCS system or standard rock nomenclature, as appropriate;
- Depth interval from which each sample was taken, sample identification, and sample time;
- Depth at which hole diameters (bit sizes) change;
- Depth at which groundwater is encountered;
- Drilling fluid and quantity of water lost during drilling;
- Depth or location of any loss of tools or equipment;
- Depths of any fractures, joints, faults, cavities, or weathered zones

6.0 Groundwater Sampling Procedures

The groundwater in all new monitoring wells will be allowed to stabilize for at least 1week following development prior to sampling. Water levels will be measured to within 0.01 feet prior to purging and sampling. Sampling of each well will typically be accomplished in one of two ways; active or passive.

Active Sampling:

Active sampling includes bailing or pumping. Purging will be completed prior to active sampling if specified in the project-specific work plan. During purging, the following will be recorded in field books or groundwater sampling logs:

- date
- purge start time
- weather conditions
- presence of NAPL, if any, and approximate thickness
- pump rate
- pH
- dissolved oxygen
- temperature

- conductivity
- redox
- turbidity
- depth of well
- depth to water
- depth to pump intake
- purge end time
- volume of water purged

During low flow sampling, the water quality parameters including pH, conductivity, temperature, dissolved oxygen, redox, water level drawdown, and turbidity will be recorded at five (5) minute intervals. Samples will be collected after the parameters have stabilized for three (3) consecutive 5-minute intervals to within the specified ranges below:

- Water level drawdown (<0.3')
- Turbidity (+/- 10%, < 50-NTU for Metals Samples)
- pH (+/-0.1)
- Temperature (+/- 3%)
- Specific conductivity (+/- 3%)
- Dissolved Oxygen (+/- 10%)
- Oxidation reduction potential (+/- 10 millivolts)

Passive Sampling:

Groundwater samples will be collected via passive methods (i.e., no-purge) according to the following procedures and in the volumes specified in Table 10-1:

Samples will be collected via passive diffusion bag (PDB) samplers. PDB samplers are made of low-density polyethylene plastic tubing (typically 4 mil), filled with laboratory grade (ASTM Type II) deionized water and sealed at both ends.

- Pre-filled PDBs will not be stored for longer than 30 days and will be kept stored at room temperature in a sealed plastic bag until ready to use.
- PDBs filled in the field will be used immediately and not stored for future use.
- PDB samplers will only be used to collect groundwater samples which will be analyzed for VOCs.
- Mesh covers will be utilized for open rock holes as to not puncture the PDB and will be secured to the bag using zip-ties.
- PDB samplers will be deployed by hanging in the well at the depth(s) specified in the project-specific work plan. The depth at which the PDB is deployed will be recorded on the groundwater sampling form. The PDB samplers will be deployed at least 14 days prior to sampling;
- When transferring water from the PDB to sample containers, care will be taken to avoid agitating the sample, since agitation promotes the loss of volatile constituents;
- Gloves will be changed between collection of each PDB and tools used to open the PDB will be decontaminated with an alconox and potable water solution between each PDB;
- Any volume not used will be treated as investigation derived waste;
- Any observable physical characteristics of the groundwater (e.g., color, sheen, odor,

turbidity) at the time of sampling will be recorded; and

- Weather conditions (i.e., air temperature, sky condition, recent heavy rainfall, drought conditions) at the time of sampling will be recorded.

6.1 PFAS Groundwater Sampling Procedure

PFAS sampling will be conducted in accordance with current NYSDEC PFAS Guidance. Samples for PFAS analysis will be collected using PFAS-Free equipment, specifically a dedicated disposable high density polyethylene (HDPE) or PVC bailers, and/or low-flow sampling equipment with PFAS-Free components. Samples will be collected in bottleware provided by the laboratory. Because PFAS are found in numerous everyday items, the following special precautions will be taken during sampling activities:

- No use of Teflon®-containing materials (e.g., Teflon® tubing, bailers, tape, sample jar lid liners, plumbing paste).
- No use of low density polyethylene (LDPE)-containing materials.
- No Tyvek® clothing will be worn by samplers.
- Clothes treated with stain-resistant or rain-resistant coatings (e.g., Gortex®) will be not be worn by samplers.
- All clothing worn by sampling personnel must have been laundered multiple times.
- No fast food wrappers, disposable cups or microwave popcorn will be within the vicinity of the wells/ samples.
- There will be no use of chemical (blue) ice packs, aluminum foil, or Sharpies® within the vicinity of the wells/ samples.
- No use of sunscreen, insect repellants, cosmetic, lotions or moisturizers will be allowed by sampling personnel the day of sampling.
- If any of the above items are handled by the field personnel prior to sampling activities, field personnel will wash their hands thoroughly with soap and water prior to any sampling activities.
- Powder-free nitrile gloves will be worn during all sample collection activities.

Quality assurance/ quality control (QA/QC) samples for PFAS sampling will include one (1) field duplicate, one (1) matrix spike / matrix spike duplicates (MS/MSD) and one (1) equipment blank. The procedures and rationale for collecting these samples are described below.

- Field duplicate – Sample will be used to assess the variability in concentrations of samples from the same well due to the combined effects of sample processing in the field and laboratory as well as chemical analysis.

- Matrix spike/matrix spike duplicate – Sample will be used to provide information about the effect of the sample matrix on the design and measurement methodology used by the laboratory.

- Equipment blank – Sample will be collected to help identify possible contamination from sampling equipment (i.e., bailer). One equipment blank will be collected by pouring laboratory certified analyte-free deionized water over a bailer into the sample container.

PFAS samples will be submitted to an Environmental Laboratory Accreditation Program (ELAP) certified laboratory for analysis of the full PFAS target analyte list (21 compounds listed in the NYSDEC Guidance) via modified USEPA Method 537 with a method detection limit not to exceed 2 ng/L. Note, the laboratory utilized will be ELAP certified for PFOA and PFOS in drinking water by

EPA method 537 or ISO 25101 as ELAP does not currently offer certification for PFAS compounds in matrices other than finished drinking water.

7.0 Soil Vapor Intrusion Sampling Procedures

Soil vapor intrusion (SVI) sampling is to be conducted in accordance with the *NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006 and subsequent updates. Tracer gas testing is to be conducted for sub-slab sampling points to ensure concentrations of the tracer gas are not detected in the sub-slab at greater than 10% of the concentration detected in the atmosphere. An outdoor air sample is to be collected at an upwind direction as a control. A building inventory should be completed to document building construction information and identify products that may be contributing to the levels in indoor air.

8.0 Field Documentation

8.1 Daily Logs/ Field Notebook

Daily logs are necessary to provide sufficient data and observations to enable participants to reconstruct events that occurred during the project and to refresh the memory of the field personnel if called upon to give testimony during legal proceedings. Daily logs may be kept in a project-specific notebook labelled with the project name/ number and contact information.

The daily log is the responsibility of the field personnel and will include:

- Name of person making entry;
- Start and end time of work;
- Names of team members on-site;
- Changes in required levels of personnel protection:
  - Level of protection originally used;
  - Changes in protection, if required; and
  - Reasons for changes.
- Air monitoring locations, start and end times, and equipment identification numbers;
- Summary of tasks completed;
- Summary of samples collected including location, matrix, etc.;
- Field observations and remarks;
- Weather conditions, wind direction, etc.;
- Any deviations from the work plan;
- Initials/ signature of person recording the information.

As with any data logbooks, no pages will be removed for any reason. If corrections are necessary, these must be made by drawing a single line through the original entry (so that the original entry can still be read) and writing the corrected entry alongside. The correction must be initialed and dated. Corrected errors may require a footnote explaining the correction.

Sample documents, forms, or field notebooks are not to be destroyed or thrown away, even if they are illegible or contain inaccuracies that require a replacement document. If an error is made on a document assigned to one individual, that individual may make corrections simply by crossing a line

through the error and entering the corrected information. The incorrect information should not be obliterated. Any subsequent error discovered on a document should be corrected by the person who made the entry. All corrections must be initialed and dated.

8.2 Photographs

Photographs will be taken to document the work. Documentation of a photograph is crucial to its validity as a representation of an existing situation. Photographs should be documented with date, location, and description of the photograph.

9.0 Investigation Derived Waste

Purpose:

The purposes of these guidelines are to ensure the proper holding, storage, transportation, and disposal of materials that may contain hazardous wastes. Investigation-derived waste (IDW) included the following:

- Drill cuttings, drilling mud solids;
- Water produced during drilling;
- Well development and purge waters, unused PDB waters;
- Decontamination waters and associated solids;

IDW will be managed in substantial accordance with DER-10 and all applicable local, State and Federal regulations.

Procedure:

1. Contain all investigation-derived wastes in Department of Transportation (DOT)-approved 55-gallon drums, roll-off boxes, or other containers suitable for the wastes.
2. Place different media in separate drums (i.e., do not combine solids and liquids).
3. To the extent practicable, separate solids from drilling muds, decontamination waters, and similar liquids. Place solids within separate containers.
4. Transfer all waste containers to a staging area. Access to this area will be controlled. Waste containers must be transferred to the staging area as soon as practicable after the generating activity is complete.
5. Label all containers with regard to contents, origin, and date of generation. Use indelible ink for all labeling.
6. Collect samples for waste characterization purposes, use boring/well sample analytical data for characterization.
7. For wastes determined to be hazardous in character, be aware on accumulation time limitations. Coordinate the disposal of these wastes with the Owner and NYSDEC.
8. Dispose of investigation-derived wastes as follows;
    - Soil, water, and other environmental media for which analysis does not detect organic constituents, and for which inorganic constituents are at levels consistent

with background, may be spread on-site (pending NYSDEC approval) or otherwise treated as a non-waste material.

- Soils, water, and other environmental media in which organic compounds are detected or metals are present above background will be disposed as industrial waste or hazardous waste, as appropriate. Alternate disposition must be consistent with applicable State and Federal laws.
- Personal protective equipment, disposable bailers, and similar equipment may be disposed as municipal waste, unless waste characterization results mandate disposal as industrial wastes

9. If waste is determined to be listed hazardous waste, it must be handled as hazardous waste as described above, unless a contained-in determination is accepted by the NYSDEC.

10.0 Decontamination Procedures

Sampling methods and equipment have been chosen to minimize decontamination requirements and to prevent the possibility of cross-contamination. Decontamination of equipment will be performed between discrete sampling locations. Equipment used to collect samples between composite sample locations will not require decontamination between collection of samples. All drilling equipment will be decontaminated after the completion of each drilling location. Special attention will be given to the drilling assembly and augers.

Split spoons and other non-disposable equipment will be decontaminated between each sampling location. The sampler will be cleaned prior to each use, by one of the following procedures:

- Initially cleaned of all foreign matter;
- Sanitized with a steam cleaner;

OR

- Initially cleaned of all foreign matter;
- Scrubbed with brushes in alconox solution;
- Triple rinsed; and
- Allowed to air dry.

Other sampling equipment including but not limited to low-flow sampling pumps, surface soil sampling trowel, water level meters, etc. will be decontaminated between sample location using an alconox solution. Consumables including gloves, tubing, bailers, string, etc. will be dedicated to one sample location and will not be reused.

11.0 Sample Containers

The containers required for sampling activities are pre-washed and ordered directly from a laboratory, which has the containers prepared in accordance with USEPA bottle washing procedures. The following tables detail sample volumes, containers, preservation and holding time for typical analytes.

Table 11-1
Groundwater Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Holding Time Until Extraction/ Analysis
VOCs	40-ml glass vial with Teflon-backed septum	Two (2); fill completely, no headspace	Cool to 4° C (ice in cooler), Hydrochloric acid to pH <2	14 days
Semi-volatile Organic Compounds (SVOCs)	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Pesticides	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Polychlorinated biphenyls (PCBs)	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Metals	250-ml HDPE	One (1); fill completely	Cool to 4° C (ice in cooler) Nitric acid to pH <2	180 days (28 for mercury)
Cyanide	1,000-mL HDPE		Cool to 4° C (ice in cooler) Nitric acid to pH <2	14 days
1,4-Dioxane	40-ml glass vial with Teflon-backed septum	Three (3); fill completely, no headspace	Cool to 4° C (ice in cooler), Hydrochloric acid to pH <2	14 days
PFAS	250-mL HDPE, no Teflon	Two (2); fill completely	Cool to 4° C (ice in cooler), Trizma	14 days

Note:
All sample bottles will be prepared in accordance with USEPA bottle washing procedures.
Consult with laboratory as bottleware may vary by laboratory.
Holding time begins at the time of sample collection.

TABLE 11-2
Soil Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Holding Time Until Extraction/ Analysis
VOCs	4-oz, glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	14 days
VOCs via EPA 5035	40 mL vials with sodium bisulfate, methanol, and/or DI water	Three (3), 5 grams each	Cool to 4° C (ice in cooler)	2 days*
SVOCs	4-oz, glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	7/40 days
PCBs	4-oz, glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	7/40 days
Pesticides	4-oz, glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	14/40 days
Metals	4-oz. glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	180 days (28 for mercury)
Cyanide	4-oz, glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	14 days
1,4-Dioxane	40 mL vials with sodium bisulfate, methanol, and/or DI water	Three (3), 5 grams each	Cool to 4° C (ice in cooler)	2 days*
PFAS	8-oz HDPE, no Teflon	One (1); fill as completely as possible	Cool to 4° C (ice in cooler)	28 days

Note:
**Or freeze within holding time.*
All sample bottles will be prepared in accordance with USEPA bottle washing procedures.
Consult with laboratory as bottleware may vary by laboratory.
Holding time begins at the time of sample collection.

Table 11-3
Air Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Holding Time Until Extraction/ Analysis
VOCs	1 – Liter Summa® Canister	One (1) 1-Liter 1.4- Liter for MS/MSD	N/A	14 days

Note:
All sample bottles will be prepared in accordance with USEPA bottle washing procedures.
Consult with laboratory as bottleware may vary by laboratory.
Holding time begins at the time of sample collection.

12.0 Sample Custody and Shipment

12.1 Sample Identification

All containers of samples collected from the project will be identified using the following format on a label or tag fixed to the sample container:

AA-BB-CC-DD-EE

AA: This set of initials indicates an abbreviation for the Site from which the sample was collected.
BB This set of initials represents the type of sample (e.g., SB for soil boring and MW for monitoring well)
CC: These initials identify the unique sample location number.
DD: These initials identify the sample start depth (if soil sample)
EE These initials identify the sample end depth (if soil sample)

Each sample will be labeled, chemically preserved (if required) and sealed immediately after collection. To minimize handling of sample containers, labels will be filled out prior to sample collection when possible. The sample label will be filled out using waterproof ink and will be firmly affixed to the sample containers. The sample label will give the following information:

- Date and time of collection
- Sample identification
- Analysis required
- Project name/number
- Preservation

Sample tags attached to or affixed around the sample container must be used to properly identify all samples collected in the field. The sample tags are to be placed on the bottles so as not to obscure any QC lot numbers on the bottles; sample information must be printed in a legible manner using waterproof ink. Field identification must be sufficient to enable cross-reference with the logbook. For chain-of-custody purposes, all QC samples are subject to exactly the same custodial procedures and documentation as "real" samples.

12.2 Chain of Custody

This section describes standard operating procedures for sample identification and chain-of-custody to be utilized for all field activities. The purpose of these procedures is to ensure that the quality of the samples is maintained during their collection, transportation, and storage through analysis. All chain-of-custody requirements comply with standard operating procedures indicated in USEPA sample handling protocol.

Sample identification documents must be carefully prepared so that sample identification and chain-of-custody can be maintained and sample disposition controlled. Sample identification documents include:

- Field notebooks;
- Sample label; and
- Chain-of-custody records.

The primary objective of the chain-of-custody procedures is to provide an accurate written or computerized record that can be used to trace the possession and handling of a sample from collection to completion of all required analyses. A sample is in custody if it is:

- In someone's physical possession;
- In someone's view;
- Locked up; or
- Kept in a secured area that is restricted to authorized personnel.

As few persons as possible should handle samples. Sample bottles will be obtained pre-cleaned from the a laboratory. Sample containers should only be opened immediately prior to sample collection. The sample collector is personally responsible for the care and custody of samples collected until they are transferred to another person or dispatched properly under chain-of-custody rules. The sample collector will record sample data in the field notebook and/or field logs.

The chain-of-custody record must be fully completed in duplicate, using black carbon paper where possible, by the field technician who has been designated by the project manager as responsible for sample shipment to the appropriate laboratory for analysis. In addition, if samples are known to require rapid turnaround in the laboratory because of project time constraints or analytical concerns (e.g., extraction time or sample retention period limitations, etc.), the person completing the chain-of-custody record should note these constraints on the chain of custody.

12.3 Transfer of Custody and Shipment

The coolers in which the samples are packed must be accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving them must sign, date, and note the time on the chain-of-custody record. This record documents sample custody transfer.

Shipping containers must be sealed with custody seals for shipment to the laboratory. The method of shipment, name of courier, and other pertinent information are entered on the chain-of-custody.

All shipments must be accompanied by the chain-of-custody record identifying their contents. The original record accompanies the shipment. The other copies are distributed appropriately to the site manager.

12.4 Custody Seals

Custody seals are preprinted adhesive-backed seals. Sample shipping containers (coolers,

cardboard boxes, etc., as appropriate) are sealed in as many places as necessary to ensure security. Seals must be signed and dated before shipment. On receipt at the laboratory, the custodian must check (and certify, by completing the package receipt log and LABMIS entries) that seals on boxes and bottles are intact. Strapping tape should be placed over the seals to ensure that seals are not accidentally broken during shipment.

12.5 Sample Packaging

Samples must be packaged carefully to avoid breakage or contamination and must be shipped to the laboratory at proper temperatures. The following sample packaging requirements will be followed:

- Sample bottle lids must never be mixed. All sample lids must stay with the original containers.
- The label should not cover any bottle preparation QC lot numbers.
- All sample bottles are placed in a plastic bag and/or individual bubble wrap sleeves to minimize the potential for cross-contamination and breaking.
- Shipping coolers must be partially filled with packing materials and ice when required, to prevent the bottles from moving during shipment.
- The sample bottles must be placed in the cooler in such a way as to ensure that they do not directly come in contact with other samples. Ice will be added to the cooler to ensure that the samples reach the laboratory at temperatures no greater than 4°C.
- Any remaining space in the cooler should be filled with inert packing material. Under no circumstances should material such as sawdust, sand, etc., be used.
- A chain of custody record must be placed in a plastic bag inside the cooler. Custody seals must be affixed to the sample cooler.

12.6 Sample Shipment

Shipping containers are to be custody-sealed for shipment as appropriate. The container custody seal will consist of tape wrapped around the package and custody seals affixed in such a way that access to the container can be gained only by cutting the filament tape and breaking the seal. Chain of custody seals shall be placed on the container, signed, and dated prior to taping the container to ensure the chain of custody seals will not be destroyed during shipment. In addition, the coolers must also be labeled and placarded in accordance with DOT regulations if shipping medium and high hazard samples.

Field personnel will make arrangements for transportation of samples to the lab. The lab must be notified as early as possible regarding samples intended for Saturday delivery. The transportation and handling of samples must be accomplished in a manner that not only protects the integrity of the sample, but also prevents any detrimental effects due to the possible hazardous nature of samples. Regulations for packaging, marking, labeling, and shipping hazardous materials are promulgated by the United States DOT in the Code of Federal Regulation, 49 CFR 171 through 177. All samples will be delivered to the laboratory and analyzed within the holding times specified by the analytical method for that particular analyte.

All chain-of-custody requirements must comply with standard operating procedures in the USEPA

sample handling protocol.

12.7 Laboratory Custody Procedures

A designated sample custodian accepts custody of the shipped samples and verifies that the sample identification number matches that on the chain-of-custody record and traffic reports, if required. Pertinent information as to shipment, pickup, and courier is entered on the chain of custody or attached forms.

13.0 Deliverables

This section will describe laboratory requirement and procedures to be followed for laboratory analysis. Samples collected in New York State will be analyzed by a New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP)-certified laboratory. When required, analyses will be conducted in accordance with the most current NYSDEC Analytical Services Protocol (ASP). For example, ASP Category B reports will be completed by the laboratory for samples representing the final delineation of the Remedial Investigation, confirmation samples, samples to determine closure of a system, and correlation samples taken using field testing technologies analyzed by an ELAP-certified laboratory to determine correlation to field results. Data Usability Summary Reports will be completed by a third party for samples requiring ASP Category B format reports. Electronic data deliverables (EDDs) will also be generated by the laboratory in EQUIS format for samples requiring ASP Category B format reports.

NYSDEC DER-10 DUSR requirements are as follows:

a) Background. The Data Usability Summary Report (DUSR) provides a thorough evaluation of analytical data with the primary objective to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use.

    1. The development of the DUSR must be carried out by an experienced environmental scientists, such as the project Quality Assurance Officer, who is fully capable of conducting a full data validation. The DUSR is developed from:

        i. A DEC ASP Category B Data Deliverable; or
        ii. The *USEPA Contract Laboratory Program National Functional Data Validation Standard Operating Procedures for Data Evaluation and Validation.*

    2. The DUSR and the data deliverables package will be reviewed by DER staff. If full third party data validation is found to be necessary (e.g. pending litigation) this can be carried out at a later data on the same data package used for the development of the DUSR.

b) Personnel Requirements. The person preparing the DUSR must be pre-approved by DER. The person must submit their qualifications to DER documenting experience in analysis and data validation. Data validator qualifications are available on DEC's website identified in the table of contents.
c) Preparation of a DUSR. The DUSR is developed by reviewing and evaluating the analytical data package. In order for the DUSR to be acceptable, during the course of this review the following questions applicable to the analysis being reviewed must be answered in the affirmative.

1. Is the data package complete as defined under the requirements for the most current DEC ASP Category B or USEPA CLP data deliverables?
2. Have all holding times been met?
3. Do all the QC data; blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?
4. Have all of the data been generated using established and agreed upon analytical protocols?
5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?
6. Have the correct data qualifiers been used and are they consistent with the most current DEC ASP?
7. Have any quality control (QC) exceedances been specifically noted in the DUSR and have the corresponding QC summary sheets from the data package been attached to the DUSR?

d) Documenting the validation process in the DUSR. Once the data package has been reviewed and the above questions asked and answered the DUSR proceeds to describe the samples and the analytical parameters, including data deficiencies, analytical protocol deviations and quality control problems are identified and their effect on the data is discussed.

14.0 Equipment Calibration

All instruments and equipment used during sampling and analysis will be operated, calibrated, and maintained according to the manufacturer's guidelines and recommendations as well as criteria set forth in the applicable analytical methodology references. Operation, calibration, and maintenance will be performed by personnel properly trained in these procedures. Section 11 lists the major instruments to be used for sampling and analysis. In addition, brief descriptions of calibration procedures for major field and laboratory instruments follow.

14.1 Photovac/MiniRae Photoionization Detector (PID)

Standard operating procedures for the PID require that routine maintenance and calibration be performed every six months. Field calibration will be performed on a daily basis. The packages used for calibration are non-toxic analyzed gas mixtures available in pressurized containers. All calibration procedures will follow the manufacturer recommendations.

14.2 Conductance, Temperature, and pH Tester

Temperature and conductance instruments are factory calibrated. Temperature accuracy can be checked against an NBS certified thermometer prior to field use if necessary. Conductance accuracy may be checked with a solution of known conductance and recalibration can be instituted, if necessary.

14.3 0_2/Explosimeter

The specific meter used at the time of work shall be calibrated in accordance with manufacturer recommendations. The model 260 O_2/ Explosimeter is described below.

The primary maintenance item of the Model 260 is the rechargeable 2.4 volt (V) nickel cadmium battery. The battery is recharged by removing the screw cap covering receptacle and connecting one end of the charging cable to the instrument and the other end to a 115V AC outlet.

The battery can also be recharged using a 12V DC source. An accessory battery charging cable is available, one end of which plugs into the Model 260 while the other end is fitted with an automobile cigarette lighter plug.

Recommended charging time is 16 hours.

Before the calibration of the combustible gas indicator can be checked, the Model 260 must be in operating condition. Calibration check-adjustment is made as follows:

1. Attach the flow control to the recommended calibration gas tank.
2. Connect the adapter-hose to the flow control.
3. Open flow control valve.
4. Connect the adapter-hose fitting to the inlet of the instrument; after about 15 seconds the LEL meter pointer should be stable and within the range specified on the calibration sheet accompanying the calibration equipment. If the meter pointer is not in the correct range, stop the flow; remove the right hand side cover. Turn on the flow and adjust the "S" control with a small screwdriver to obtain a reading as specified on the calibration sheet.
5. Disconnect the adapter-hose fitting from the instrument.
6. Close the flow control valve.
7. Remove the adapter-hose from the flow control.
8. Remove the flow control from the calibration gas tank.
9. Replace the side cover on the Model 260.

CAUTION: Calibration gas tank contents are under pressure. Use no oil, grease, or flammable solvents on the flow control or the calibration gas tank. Do not store calibration gas tank near heat or fire or in rooms used for habitation. Do not throw in fire, incinerate, or puncture. Keep out of reach of children. It is illegal and hazardous to refill this tank. Do not attach the calibration gas tank to any other apparatus than described above. Do not attach any gas tank other than MSA calibration tanks to the regulator.

14.4 Nephelometer (Turbidity Meter)

LaMotte 2020WE Turbidity Meter is calibrated before each use. The default units are set to NTU and the default calibration curve is formazin. A 0 NTU Standard (Code 1480) is included with the meter. To calibrate, rinse a clean tube three times with the blank. Fill the tube to the fill line with the blank. Insert the tube into the chamber, close the lid, and select “scan blank”.

TABLE 14-4
List of Major Instruments
for Sampling and Analysis

- MSA 360 0_2 /Explosimeter
- Geotech Geopump II AC/DC Peristaltic Pump
- QED MP50 Controller and QED Sample Pro MicroPurge Bladder Pimp
- Horiba U-53 Multi-Parameter Water Quality Meter
- LaMotte 2020WE Turbidity Meter
- EM-31 Geomics Electromagnetic Induction Device
- Mini Rae Photoionization Detectors (3,000, ppbRAE, etc.)

15.0 Internal Quality Control Checks

QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of field equipment. Field-based QC will comprise at least 10% of each data set generated and will consist of standards, replicates, spikes, and blanks. Field duplicates and field blanks will be analyzed by the laboratory as samples and will not necessarily be identified to the laboratory as duplicates or blanks. For each matrix, field duplicates will be provided at a rate of one per 10 samples collected or one per shipment, whichever is greater. Field blanks which may consist of trip, routine field, and/or rinsate blanks will be provided at a rate of one per 20 samples collected for each media, or one per shipment, whichever is greater. Frequency of QC data may vary from project to project; refer to the project-specific work plan for QC requirements.

Calculations will be performed for recoveries and standard deviations along with review of retention times, response factors, chromatograms, calibration, tuning, and all other QC information generated. All QC data, including split samples, will be documented in the site logbook and/or appropriate field logs. QC records will be retained and results reported with sample data.

15.1 Field Blanks

Various types of blanks are used to check the cleanliness of field handling methods. The following types of blanks may be used: the trip blank, the routine field blank, and the field equipment blank. They are analyzed in the laboratory as samples, and their purpose is to assess the sampling and transport procedures as possible sources of sample contamination. Field staff may add blanks if field circumstances are such that they consider normal procedures are not sufficient to prevent or control sample contamination, or at the direction of the project manager. Rigorous documentation of all blanks in the site logbooks is mandatory.

- **Routine Field Blanks** or bottle blanks are blank samples prepared in the field to access ambient field conditions. They will be prepared by filling empty sample containers with deionized water and any necessary preservatives. They will be handled like a sample and shipped to the laboratory for analysis.
- **Trip Blanks** are similar to routine field blanks with the exception that they are **not**

exposed to field conditions. Their analytical results give the overall level of contamination from everything except ambient field conditions. For the RI/FS, one trip blank will be collected with every shipment of water samples for VOC analysis. Each trip blank will be prepared by filling a 40-ml vial with deionized water prior to the sampling trip, transported to the site, handled like a sample, and returned to the laboratory for analysis without being opened in the field. Trip blanks may be provided by the laboratory, shipped with the bottleware, and kept with the sampling containers until analysis.

- Field Equipment Blanks are blank samples (sometimes called transfer blanks or rinsate blanks) designed to demonstrate that sampling equipment has been properly prepared and cleaned before field use, and that cleaning procedures between samples are sufficient to minimize cross contamination. If a sampling team is familiar with a particular site, they may be able to predict which areas or samples are likely to have the highest concentration of contaminants. Unless other constraints apply, these samples should be taken last to avoid excessive contamination of sampling equipment.

15.2 Duplicates

Duplicate samples are collected to check the consistency of sampling and analysis procedures. The following types of duplicates may be collected.

- Blind duplicate samples consist of a set of two samples collected independently at a sampling location during a single sampling event. Blind duplicates are designed to assess the consistency of the overall sampling and analytical system. Blind duplicate samples should not be distinguishable by the person performing the analysis.
- Matrix Spike and Matrix Spike Duplicates (MS/MSDs) consist of a set of three samples collected independently at a sampling location during a single sampling event. These samples are for laboratory quality control checks.

APPENDIX H

Site Management Forms

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45 Main Street, Suite 1018
Brooklyn, New York 11201

WELL I.D.: _____

Project Name: Ebenezer Plaza II, BCP Site No. C224241
Location: 583 Christopher Ave, Brooklyn, NY
Project No.: 20918.07
Sampled By:
Date:
Weather:

WELL SAMPLING INFORMATION

Well Diameter:
Depth of Well:
Measuring Point: TOC
Pump Type:
Static Water Level:
Length of Well Screen:
Depth to Top of Pump:
Tubing Type:

FIELD PARAMETER MEASUREMENT

Time	Pump Rate (mL/min)	Gallons Purged	Temp °C	Dissolved O_2 (mg/L) + 10%	Conductivity (mS/cm) +/- 3%	pH +/- 0.1	Redox (mV) +/- 10 mV	Turbidity (NTU) + 10%	Depth to Water Ft. BGS		Comments

Total _____ Gallons Purged

Purge Time Start: _____ Purge Time End: _____ Final Static Water Level: --

OBSERVATIONS

NAPL Observed: Yes / No
Treatment Chemical Observed: Yes / No
MS/MSD Collected: Yes / No
Duplicate Sample Collected: Yes / No

MONITORING WELL INSPECTION FORM

LaBella
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45 MAIN STREET, SUITE 1018

BROOKLYN, NY 11201

PROJECT NAME: EBENEZER PLAZA II, NYSDEC BCP SITE NO. C224241

LOCTION: 583 CHRISTOPHER AVE, BROOKLYN, NY

PROJECT NO.:

INSPECTED BY:

DATE:

WEATHER:

WELL ID	STATIC WATER LEVEL	EVIDENCE OF DAMAGE	EVIDENCE OF FROST HEAVING	EVIDENCE OF CASING DAMAGE OR WEAR	LOCK IN PLACE	EVIDENCE OF WELL SUBSIDENCE	STANDING OR PONDING WATER	CORRECTIVE ACTION MEASURES TAKEN	COMMENTS
		YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	
		YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	
		YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	
		YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	
		YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	
		YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	
		YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	
		YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	
		YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	
		YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	
		YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	

APPENDIX I

Soil Vapor Intrusion Work Plan

November 22, 2024

Mr. Aaron Fischer
New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau B
625 Broadway, 12th Floor, Albany, NY 12233-7014

Re: Soil Vapor Intrusion Work Plan
Ebenezer Plaza II
589 Christopher Ave, Brooklyn, NY
NYSDEC Site No. C224241

Dear Mr. Fischer:

LaBella Associates (LaBella) has prepared this Soil Vapor Intrusion (SVI) Work Plan for the Ebenezer Plaza II Site (Site No. C360227) located at 589 Christopher Avenue in Kings County, New York, to summarize the procedures for the SVI evaluation as required in the Site Management Plan (SMP).

The Site was remediated in accordance with the 2020 Remedial Action Work Plan (RAWP) and achieved a Track 2 restricted residential soil cleanup objective cleanup. A summary of the remediation is detailed in the 2024 Final Engineering Report (FER). While not required as part of the remedy, a Sub-Slab Depressurization System (SSDS) was proactively installed at a depth of 15 to 16 ft bgs. The water table varies seasonally from approximately 12 to 16 ft bgs. The SSDS was designed to depressurize the basement (approximately 27,796-square feet). The SSDS was designed in accordance with the New York State Department of Health (NYSDOH) Final Guidance for Soil Vapor Intrusion in the State of New York dated October 2006. The layout and components of the SSDS are shown on Figure 1.

If soil vapor is present below the slab, SVI testing will be conducted following completion of the first-floor building envelope and prior to building occupancy. The soil vapor sampling results will be evaluated to determine if the SSDS requires activation based on NYSDOH SVI guidance. The SSDS will not be operated unless the SVI testing indicates a need.

If the SSDS requires operation, an update to the SMP will be required.

SVI INVESTIGATION ACTIVITIES

SVI testing will be conducted following the completion of the first-floor building envelope and prior to building occupancy.

Sampling Point Installations

The location of the sub-slab vapor sampling point(s) have been determined based upon construction, foundation type, general coverage across the building and subsurface impacts. In addition, the locations and installation techniques are in accordance with the Department of Health's Guidance for Evaluating Soil Vapor Intrusion in the State of New York, 2006. Specific testing locations, for properties where testing will occur, are provided in the plan for that property. Please note that based on the water table elevation, soil vapor may not be present below the slab.

Sub-Slab Vapor Points

Sub-slab vapor sampling points will be installed by coring an approximate 5/8-inch diameter hole through the floor slab in each sampling location. A Vapor Pin® assembly consisting of a metal barbed fitting with 5/8-diameter silicone tubing for establishing a seal will be installed in the corehole. **Figure 1** illustrates the sub-slab vapor/indoor air sampling locations and provides a detail of the Vapor Pin® installation.

Purging Procedures

After installation of the probes, one (1) to three (3) volumes (i.e., the volume of the sample probe and tube) will be purged prior to collecting the samples to ensure samples collected are representative. Flow rates for purging will not exceed 0.2 liters per minute to minimize the ambient air infiltration during sampling.

During purging of the sample point, a tracer gas evaluation will also be conducted to verify the integrity of the sub-slab soil vapor probe seal. An appropriate tracer gas will be used (e.g., sulfur hexafluoride (SF7), helium, etc.). An enclosure will be constructed around the soil gas sampling point (e.g., plastic bag, plastic bucket, etc.) and sealed around the sample point casing (as shown on Figure 6). Subsequently, the enclosure will be enriched with the tracer gas. The purged soil gas will then be tested for the tracer gas by an appropriate meter. If the tracer gas is measured at a concentration of 10% or greater, the sample point will be resealed and retested prior to sampling. Sampling will not occur if the tracer gas measurements are at or above 10%.

Sub-Slab, Indoor and Outdoor Sampling and Handling Procedures

Sub-slab vapor samples will be collected over the same general time period and in the same manner at all locations to minimize possible discrepancies. At each sub-slab vapor sample location an indoor air sample will also be collected. The 'co-located' indoor air samples will be collected from approximately 3 to 5 feet above the floor slab and will also be collected in the same manner and general time period as the sub-slab sample. In addition, during each sampling event, an outdoor air sample will also be collected to evaluate the ambient air conditions. The outdoor ambient air samples will be collected upwind of the testing area, based on prevailing wind directions.

All sub-slab, indoor and outdoor air samples will be collected using 1-liter or 6-liter Summa Cannisters® that are equipped with pre-calibrated laboratory supplied flow regulators set for a sampling time of twenty-four (24) hours. The Summa Cannisters® will be certified clean by the laboratory. The Summa Cannisters® will be connected to the sub-slab soil vapor sampling point via inter tubing (e.g., polyethylene, stainless steel, or Teflon®).

Analytical Testing Methods & Reporting List

Compound	Anticipated Detection Limit (µg/m³)
Tetrachloroethene	1.36
Trichloroethene	1.07
cis-1,2-Dichloroethene	0.793
trans-1,2-Dichloroethene	0.793
Vinyl Chloride	0.511

Compound	Anticipated Detection Limit (µg/m³)
1,1,1-Trichloroethane	1.09
1,1-Dichloroethane	0.809
1,1-Dichloroethene	0.793
Chloroethane	0.528
Chloromethane	0.413
Benzene	0.639
Ethylbenzene	0.869
Naphthalene	1.05
Cyclohexane	0.688
Isooctane (2,2,4-Trimethylpentane)	0.934
1,2,4 - Trimethylbenzene	0.983
1,3,5 - Trimethylbenzene	0.983
o-Xylene	0.869
m,p - Xylene	1.74
Heptane	0.82
Hexane	0.705
Toluene	0.754

The laboratory will utilize USEPA Method TO-15 plus Naphthalene for completing the testing work. The detection limits for the compounds will be 1.0 µ/m³ with the exception of trichloroethene and vinyl chloride which will be 0.25 µ/m3. The laboratory reports will be provided as an ASP Category B-like deliverable data package. A data usability summary report (DUSR) will be prepared in accordance with DER-10 Appendix 2B for all sub-slab and indoor air sampling results.

Building Survey and Indoor Air Quality Questionnaire and Sampling Notes

During the sampling, Soil Vapor Intrusion Preliminary Building Assessment and Site Reconnaissance form will be completed to assess any chemicals on-site that may impact the sampling results (paints, caulks, etc.). The building survey will include a cursory survey with a photo-ionization detector (PID). This form includes (but not limited to) the following information which will be recorded during the sampling work and will be utilized with interpreting laboratory results:

Sampling Notes:

- sample identification
- date and time of sample collection
- sampling depth

- identity of sampler(s)
- sampling methods and devices
- purge volumes
- volume of soil vapor extracted
- chain of custody protocols used to track samples from sampling point to analysis
- weather conditions (e.g., precipitation, outdoor temperature, barometric pressure, wind speed and direction) will be noted for the past 24 to 48 hours
- any pertinent observations will be recorded (e.g., odors).

Building Survey Information

- any recent uses of volatile chemicals will be identified, (e.g., use of volatile chemicals in building construction.
- the use of heating or air conditioning systems during sampling will be noted.

Quality Assurance/Quality Control

QA/QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of field equipment. Field duplicates will be analyzed by the laboratory as samples and will not necessarily be identified to the laboratory as duplicates. Field duplicates will be provided at a rate of one per 10 samples collected or one per shipment, whichever is greater. Matrix Spike and Matrix Spike Duplicates will be provided at a rate of one per 20 samples collected or one per shipment, whichever is greater. Additional details on QA/QC procedures are provided in the Quality Control Program included in the SMP (Appendix G).

Data Evaluation/Report

The results of the SVI Investigations will be compared to the applicable NYSDOH Guidance decision matrices. For compounds without decision matrices, alternative literature will be used for comparisons (i.e., literature in Appendix C of NYSDOH Guidance). In addition, the building survey information and the upwind ambient air background sample will also be assessed as part of the overall evaluation. The data evaluation will be summarized in letter report

Certification

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

11/22/2024
Date

If you have any questions, please contact me at (585) 295-6611.

Respectfully submitted,

LaBella Associates, D.P.C.

Dan Noll, PE
Vice President

Attachments

Figure 1 – Soil Vapor Intrusion Sampling Locations

LEGEND

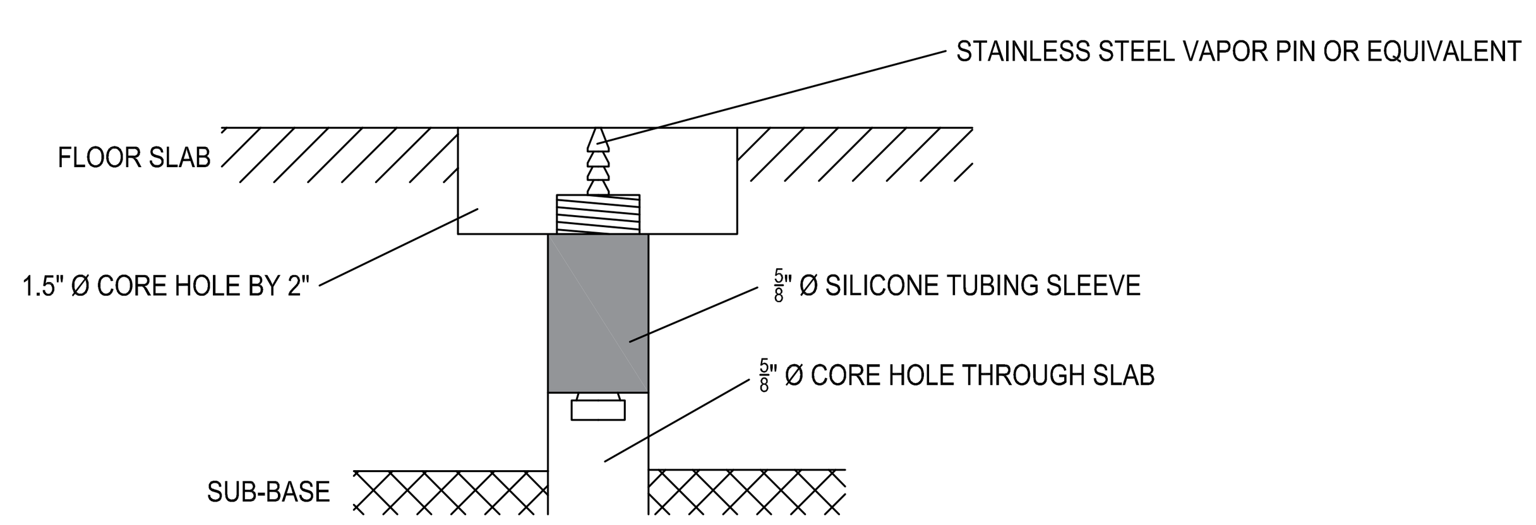
FABRIC WRAPPED 4 INCH HDPE PERFORATED PIPE PLACED WITHIN MIDDLE OF $\frac{3}{4}$ INCH STONE TRENCH

4 INCH SOLID SCH 40 PVC PIPE PLACED WITHIN MIDDLE OF $\frac{3}{4}$ INCH STONE TRENCH, SLOPED AWAY FROM VERTICAL RISER AT $\frac{1}{8}$ INCH PER FOOT TO ALLOW FOR DRAINAGE

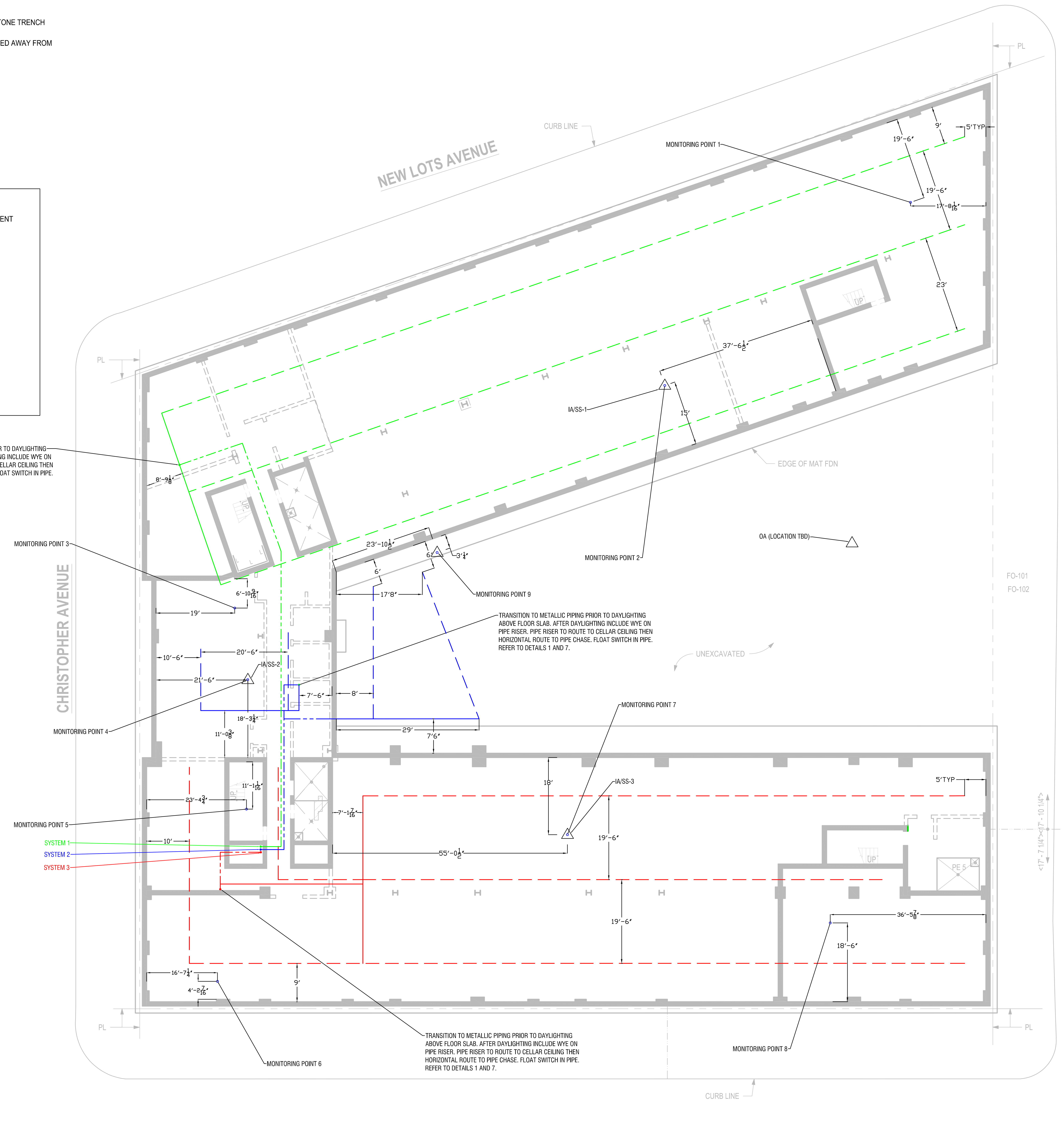
4 INCH CAST IRON ABOVE GROUND PIPE

PRESSURE FIELD EXTENSION MONITORING POINT

SOIL VAPOR INTRUSION SAMPLING LOCATION:
SS = SUB-SLAB INDOOR AIR
IA = INDOOR AIR
OA = OUTDOOR AIR



DETAIL 1: VAPOR PIN/SUB-SLAB SOIL VAPOR SAMPLING POINT



NOTES

1. VAPOR PIN® INSERT MONITORING POINTS WITH CAP INSTALLED PER MANUFACTURER INSTRUCTIONS. INSERT TO EXTEND FROM SURFACE OF CONCRETE THROUGH VAPOR BARRIER AND TERMINATE IN GRAVEL SUBBASE. REFER TO DETAIL 3: PROFILE AT GAUGE POINT
2. 4 INCH CAST IRON OR METALLIC PIPING RISER TO BE LOCATED IN PIPE CHASE AND VENTED UP THROUGH THE ROOF. REFER TO DETAIL 1: REAR END WALL.
3. 4 INCH SCHEDULE 40 PVC TO 4 INCH SLOTTED OR PERFORATED PIPE CONNECTION. REFER TO DETAIL 2: DETAIL AT HEADER
4. 4 INCH SLOTTED OR PERFORATED PIPE WRAPPED IN FABRIC AND PLACED IN $\frac{3}{4}$ inch STONE TRENCH. REFER TO DETAIL 6: MATERIAL PROFILE
5. MOVE PIPING IN FIELD TO AVOID PLUMBING.
6. INSTALL 4 INCH CAP AT EACH VAPOR COLLECTION PIPE TERMINATION
7. ALL SUB-SLAB VAPOR COLLECTION PIPING TO BE GEOTEXTILE-WRAPPED 4 INCH SLOTTED SCHEDULE 40 PVC OR PERFORATED DUAL WALLED CORRUGATED EXTERIOR SMOOTH INTERIOR HDPE PIPING.
8. HEADER PIPING TO BE SOLID 4 INCH SCHEDULE 40 PVC.
9. 3/4-INCH GRAVEL SHALL CONSIST OF #57 BLUE STONE
10. HORIZONTAL RUNS OF SOLID PIPING SHALL BE SLOPED TO PROMOTE DRAINAGE BACK TO SLOTTED OR PERFORATED PIPING.
11. TO PROTECT THE VAPOR BARRIER, ALL PENETRATIONS MADE AFTER POURING OF THE SLAB, SUCH AS JOINTS, ETC, SHALL BE CUT IN A MANNER TO AVOID PENETRATION THE VAPOR BARRIER.
12. SEAL ALL PENETRATIONS AND GAPS WITH AN ELASTOMERIC JOINT SEALANT.
13. THIS DRAWING IS NOT INTENDED TO PROVIDE STRUCTURAL OR ELECTRICAL INFORMATION. REFER TO STRUCTURAL AND ELECTRICAL DRAWINGS.
14. CONTRACTOR TO CONFIRM NO AIR INTAKE IS WITHIN 10 FEET OF VENT STACK.
15. CONTRACTOR TO CONFIRM NO ADJOINING OR ADJACENT BUILDINGS, AIR INTAKES OR SUPPLY REGISTERS ARE WITHIN 10 FEET OF VENT STACK.
16. VENT/EXHAUST STACK TO EXTEND AT LEAST 1 FOOT ABOVE ROOF LEVEL.
17. SYSTEM DESCRIPTION LABELS SHALL BE PLACED ON PIPING ABOVE THE SLAB TO READ "SUB-SLAB DEPRESSURIZATION SYSTEM."
18. INSTALL ALARM FOR EACH SYSTEM. REFER TO DETAIL 4.
19. FLOAT SWITCH FOR FAN CONTROL TO BE INSTALLED FOR EACH RISER THROUGH SLAB. REFER TO DETAIL 7.
20. ALARM, FAN AND SWITCH ELECTRICAL INSTALLED TO SHUT OFF FAN AND ALARM WHEN FLOAT SWITCH INDICATES HIGH GROUNDWATER LEVEL. REFER TO DETAIL 8.

NO.	REVISION	BY	DATE
1			
2			

LaBella
Powered by partnership.

PROJECT/CLIENT
EBENEZER PLAZA OWNER PHASE II LLC
EBENEZER PLAZA II
589 CHRISTOPHER STREET
BROOKLYN, NY

DRAWING TITLE
SUB-SLAB DEPRESSURIZATION SYSTEM DETAILS

ISSUED FOR: ----
DESIGNED BY: AB
DRAWN BY: DP
REVIEWED BY: AB
DATE: AUGUST, 2022
SCALE: 3/32" = 1'-0"
\\cash.lab\u\Legacy\Chazen\Projects\20900-20999\20918.07 EP-2\ENV\SSDS\SVI Work Plan\Figure 1 - SVI Sampling Locations.dwg

PROJECT/DRAWING NUMBER
20918.07

Soil Vapor Intrusion Sampling Locations
FIGURE 1

APPENDIX J

Green Remediation Metrics

Summary of Green Remediation Metrics for Site Management

Site Name: _____Site Code: _____
Address: _____City: _____
State: _____ Zip Code: _____County: _____

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:

CERTIFICATION BY CONTRACTOR
I, _____ (**Name**) do hereby certify that I am _____ (**Title**) of the Company/Corporation herein referenced and contractor for the work described in the foregoing application for payment. According to my knowledge and belief, all items and amounts shown on the face of this application for payment are correct, all work has been performed and/or materials supplied, the foregoing is a true and correct statement of the contract account up to and including that last day of the period covered by this application. _____ **Date** **Contractor**

APPENDIX K

Remedial Site Optimization
Table of Contents

REMEDIAL SYSTEM OPTIMIZATION TABLE OF CONTENTS

REMEDIAL SYSTEM OPTIMIZATION FOR EBENEZER PLAZA 2

TABLE OF CONTENTS

APPENDIX L

Operations & Maintenance Manual

Operation & Maintenance Manual
Ebenezer Plaza II
NYSDEC BCP Site #C224241

Location:

Ebenezer Plaza II
589 Christopher Avenue
Brooklyn, New York

Prepared for:

Ebenezer Plaza Owner Phase II LLC
456 E. 173rd Street
Bronx, New York 10566

LaBella Project No. 20918.07

November 22, 2024

LaBella
Powered by partnership.

45 Main Street, Suite 1018 | Brooklyn, NY 11201 | p 917-280-6364

Table of Contents

APPENDICES

1.0 INTRODUCTION

This Operation and Maintenance Manual (O&MM) is designed to assist the property owner and/or building manager with operating, maintaining and monitoring the Sub-Slab Depressurization System (SSDS). It should be noted that the SSDS may not be operated in the event that Soil Vapor Intrusion (SVI) testing indicates that the SSDS is not required. However, this plan has been developed to be utilized if the SSDS is operated. The SSDS is located at the Ebenezer Plaza II property located at 589 Christopher Avenue in the Borough of Brooklyn, New York. This plan was developed in accordance with the requirements of the Site Management Plan (SMP) that is currently in the New York State (NYS) Brownfield Cleanup Program (BCP) Site No. C224241 which is administered by the New York State Department of Environmental Conservation (NYSDEC).

1.1 Systems Overview

The SSDS was constructed as a proactive measure beneath the entire building footprint. The SSDS will not be operated unless the SVI testing indicates a need. The SSDS, if operated, would prevent direct contact with soil vapors containing chemicals of concern in the Site building. The SSDS depressurizes the sub-slab in the Site building, thus mitigating potential soil vapor intrusion.

The SSDS consists of 3 discrete systems that each include sub-slab perforated piping set in a gravel layer for air communication and then manifolded together to riser piping with 3 discrete fans on the roof. In the areas of the building that have a basement, the SSDS is approximately 15 to 16 feet below ground surface (ft bgs). The water table varies seasonally from approximately 12 to 16 ft bgs; however, there is a sump pump in each basement to dewater the elevator pit areas and is anticipated to maintain the water level beneath the SSDS piping. The central portion of the building that is only slab on grade with no basement has a separate SSDS that is set just below the slab level and thus should not be impacted by groundwater levels.

This O&MM assumes the SSDS equipment has been installed per the design (Appendix A), however, the O&MM may not be implemented if SVI sampling results indicate SSDS operation is not required. Should the final SSDS installation vary from the design, the SMP including this O&MM will be updated.

1.2 Plan Organization

The O&MM is divided into four sections:

- **Section 2** provides a general description of the remedial system;
- **Section 3** includes recommended preventative maintenance and checks; and
- **Section 4** includes a summary of operational monitoring of the remedial system.

Appendices for this O&MM are attached to this document and include the manufacturer's equipment manuals for the remedial systems, as applicable.

2.0 SYSTEM DESCRIPTIONS

2.1 Sub Slab Depressurization System (SSDS)

The SSDS was installed in substantial accordance with the NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006 (and associated amendments). The majority of the system was constructed of Schedule 40 polyvinyl chloride (PVC) piping and fittings.

The SSDS was designed to provide negative pressure beneath the first floor and basement sub slab of the Site building that effectively minimizes the potential for vapor intrusion for VOCs from sub slab soils to indoor air. The locations of the system features are depicted on Figure 10 of the Site Management Plan and are also included in Appendix A of this O&MM.

A series of pressure field extension (PFE) points were installed within the first floor and basement to confirm the SSDS has depressurized the slab a minimum of 0.004 inches of water column lower than indoor air pressure. In addition, an audible alarm and pressure gauge were installed on each SSDS system to confirm the system is operating and to warn of system failures.

Please note the following information to assist with the monitoring, maintenance, or repair of the following SSDS components:

Table 2.2 SSDS Information

Item	Note:
System 1	- Fan Model: RadonAway EC6 Pro Series - Manometer gauge is located on pipe riser within the water meter room in the southwestern side of the cellar. - Audible alarm routed to the office/maintenance office in the cellar.
System 2	- Fan Model: RadonAway EC6 Pro Series - Manometer gauge is located on a pipe riser within the cellar level custodial closet. - Audible alarm routed to the office/maintenance office in the cellar.
System 3	- Fan Model: RadonAway EC6 Pro Series - Audible alarm routed to the office/maintenance office in the cellar.

Layout and specifications for the SSDS are included in **Appendix A.**

3.0 PREVENTIVE MAINTENANCE

It is important that the systems be checked frequently so that any operating problems can be identified and corrected in a timely manner. Operational monitoring, discussed in Section 4.0 should also be performed as part of this inspection, when necessary.

3.1 SSDS Preventive Maintenance

Preventive maintenance of the SSDS will include system checks to ensure the system is operating to the design requirements, and will include the following:

- Inspection of all visible components of the venting systems;
-
- Inspection of the blower/fan system and alarms to ensure all component parts are functioning;
- Monitoring of vent riser manometer gauges to confirm that the venting systems are functioning as intended; and
- Other appropriate requirements such as routine maintenance, testing of functioning components of the venting systems in accordance with the manufacturers' schedule and recommendations, if appropriate.

4.0 OPERATIONAL MONITORING

Operational monitoring allows for measuring the performance of the remedial system and identifies potential problems is the system operation. Site management forms are included in Appendix D.

4.1 SSDS Monitoring

The monitoring of the SSDS will include the following:

Table 4.2 – SSDS Monitoring

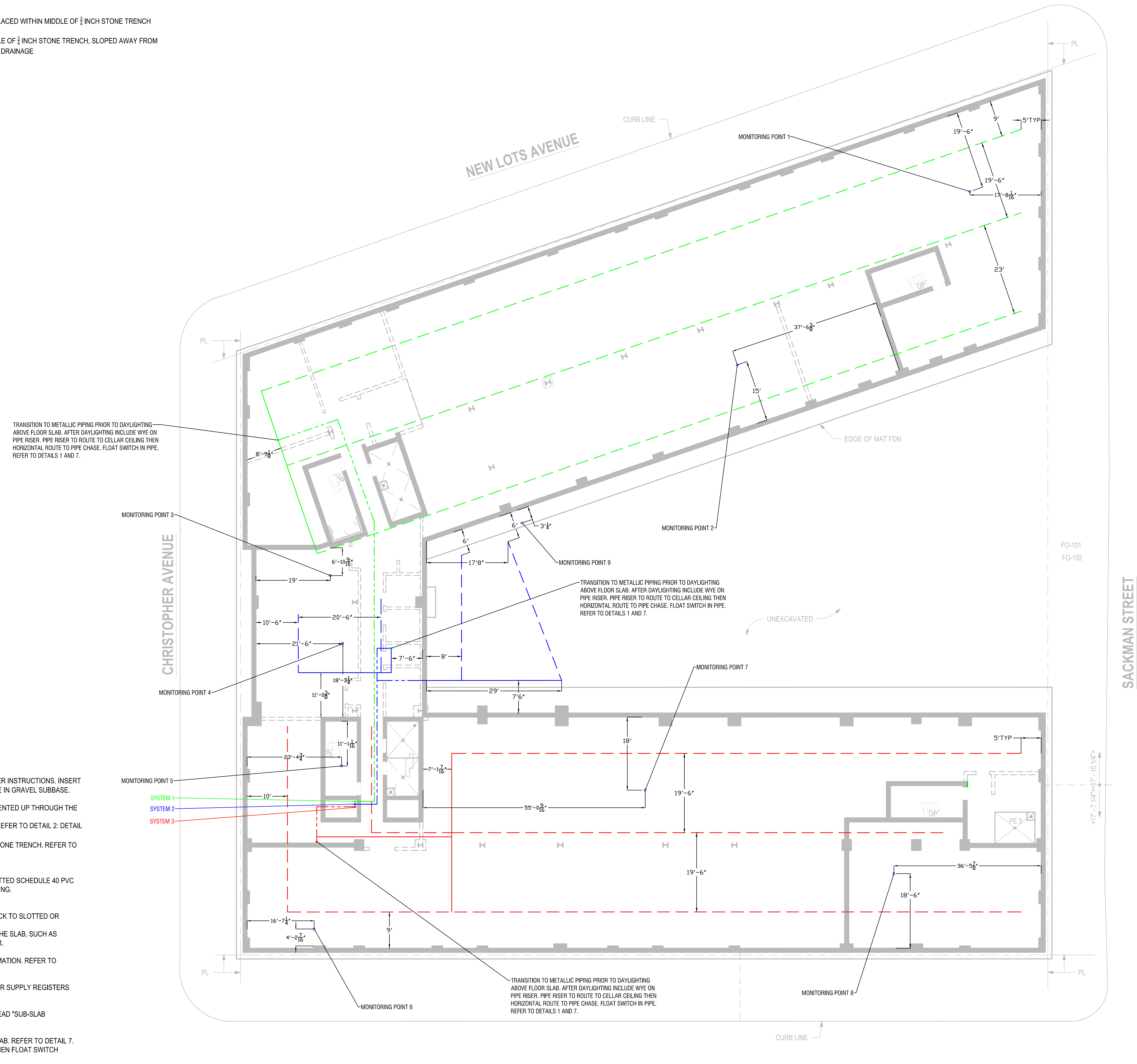
Remedial System Component	Monitoring Parameter	Operating Range	Monitoring Schedule
Fans	Pressure	Operation	Annually
Fan Gauge/ Manometer	Should be within typical operating range	-0 to 0.25 inches of water columns	Annually
Fans	Pressure at PFE points	0.004 inches of water column/negative pressure	Annually
Alarms and piping	Operational/condition	None.	Annually

APPENDIX A

SSDS Information

LEGEND

— — — — — (long dash)	FABRIC WRAPPED 4 INCH HDPE PERFORATED PIPE PLACED WITHIN MIDDLE OF $\frac{3}{4}$ INCH STONE TRENCH
———— (solid)	4 INCH SOLID SCH 40 PVC PIPE PLACED WITHIN MIDDLE OF $\frac{3}{4}$ INCH STONE TRENCH, SLOPED AWAY FROM VERTICAL RISER AT $\frac{1}{8}$ INCH PER FOOT TO ALLOW FOR DRAINAGE
– – —— – – (dash-dot)	4 INCH CAST IRON ABOVE GROUND PIPE
○	PRESSURE FIELD EXTENSION MONITORING POINT



NOTES

1. VAPOR PIN® INSERT MONITORING POINTS WITH CAP INSTALLED PER MANUFACTURER INSTRUCTIONS. INSERT TO EXTEND FROM SURFACE OF CONCRETE THROUGH VAPOR BARRIER AND TERMINATE IN GRAVEL SUBBASE. REFER TO DETAIL 3: PROFILE AT GAUGE POINT
2. 4 INCH CAST IRON OR METALLIC PIPING RISER TO BE LOCATED IN PIPE CHASE AND VENTED UP THROUGH THE ROOF. REFER TO DETAIL 1: REAR END WALL.
3. 4 INCH SCHEDULE 40 PVC TO 4 INCH SLOTTED OR PERFORATED PIPE CONNECTION. REFER TO DETAIL 2: DETAIL AT HEADER
4. 4 INCH SLOTTED OR PERFORATED PIPE WRAPPED IN FABRIC AND PLACED IN $\frac{3}{4}$ inch STONE TRENCH. REFER TO DETAIL 6: MATERIAL PROFILE
5. MOVE PIPING IN FIELD TO AVOID PLUMBING.
6. INSTALL 4 INCH CAP AT EACH VAPOR COLLECTION PIPE TERMINATION
7. ALL SUB-SLAB VAPOR COLLECTION PIPING TO BE GEOTEXTILE-WRAPPED 4 INCH SLOTTED SCHEDULE 40 PVC OR PERFORATED DUAL WALLED CORRUGATED EXTERIOR SMOOTH INTERIOR HDPE PIPING.
8. HEADER PIPING TO BE SOLID 4 INCH SCHEDULE 40 PVC.
9. 3/4-INCH GRAVEL SHALL CONSIST OF #57 BLUE STONE
10. HORIZONTAL RUNS OF SOLID PIPING SHALL BE SLOPED TO PROMOTE DRAINAGE BACK TO SLOTTED OR PERFORATED PIPING.
11. TO PROTECT THE VAPOR BARRIER, ALL PENETRATIONS MADE AFTER POURING OF THE SLAB, SUCH AS JOINTS, ETC, SHALL BE CUT IN A MANNER TO AVOID PENETRATION THE VAPOR BARRIER.
12. SEAL ALL PENETRATIONS AND GAPS WITH AN ELASTOMERIC JOINT SEALANT.
13. THIS DRAWING IS NOT INTENDED TO PROVIDE STRUCTURAL OR ELECTRICAL INFORMATION. REFER TO STRUCTURAL AND ELECTRICAL DRAWINGS.
14. CONTRACTOR TO CONFIRM NO AIR INTAKE IS WITHIN 10 FEET OF VENT STACK.
15. CONTRACTOR TO CONFIRM NO ADJOINING OR ADJACENT BUILDINGS, AIR INTAKES OR SUPPLY REGISTERS ARE WITHIN 10 FEET OF VENT STACK.
16. VENT/EXHAUST STACK TO EXTEND AT LEAST 1 FOOT ABOVE ROOF LEVEL.
17. SYSTEM DESCRIPTION LABELS SHALL BE PLACED ON PIPING ABOVE THE SLAB TO READ "SUB-SLAB DEPRESSURIZATION SYSTEM."
18. INSTALL ALARM FOR EACH SYSTEM. REFER TO DETAIL 4.
19. FLOAT SWITCH FOR FAN CONTROL TO BE INSTALLED FOR EACH RISER THROUGH SLAB. REFER TO DETAIL 7.
20. ALARM, FAN AND SWITCH ELECTRICAL INSTALLED TO SHUT OFF FAN AND ALARM WHEN FLOAT SWITCH INDICATES HIGH GROUNDWATER LEVEL. REFER TO DETAIL 8.

NO.	REVISION	BY	DATE
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2			

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PROJECT/CLIENT
EBENEZER PLAZA OWNER PHASE II LLC
EBENEZER PLAZA II
589 CHRISTOPHER STREET
BROOKLYN, NY

DRAWING TITLE
SUB-SLAB DEPRESSURIZATION SYSTEM DETAILS

ISSUED FOR

DESIGNED BY: AB
DRAWN BY: DP
REVIEWED BY: AB

DATE: AUGUST, 2022
SCALE: 3/32" = 1'-0"

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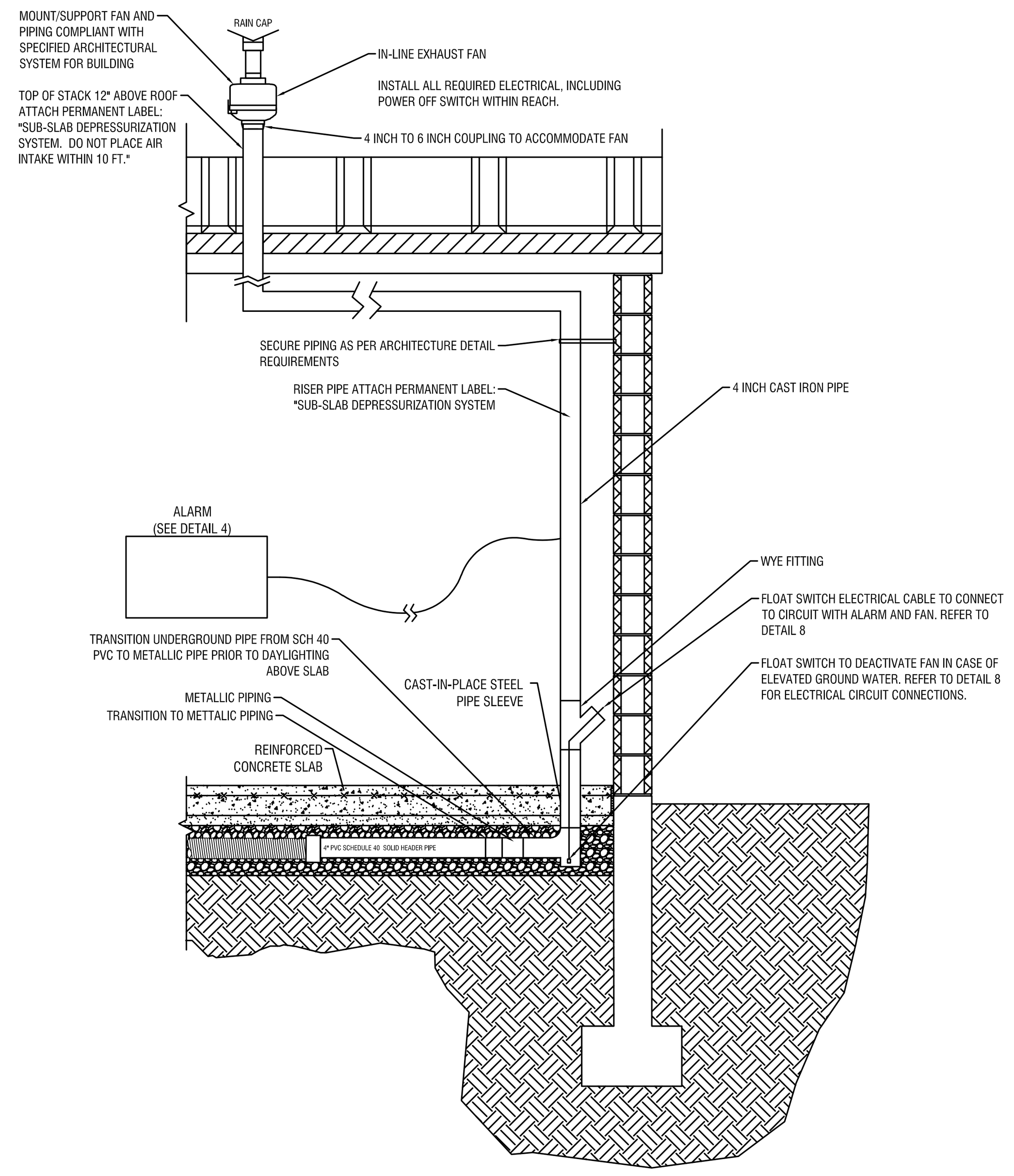
PROJECT/DRAWING NUMBER
20918.07

FIGURE 11



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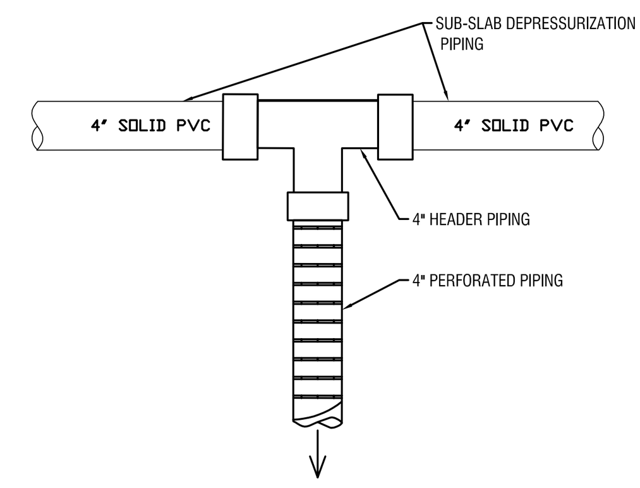
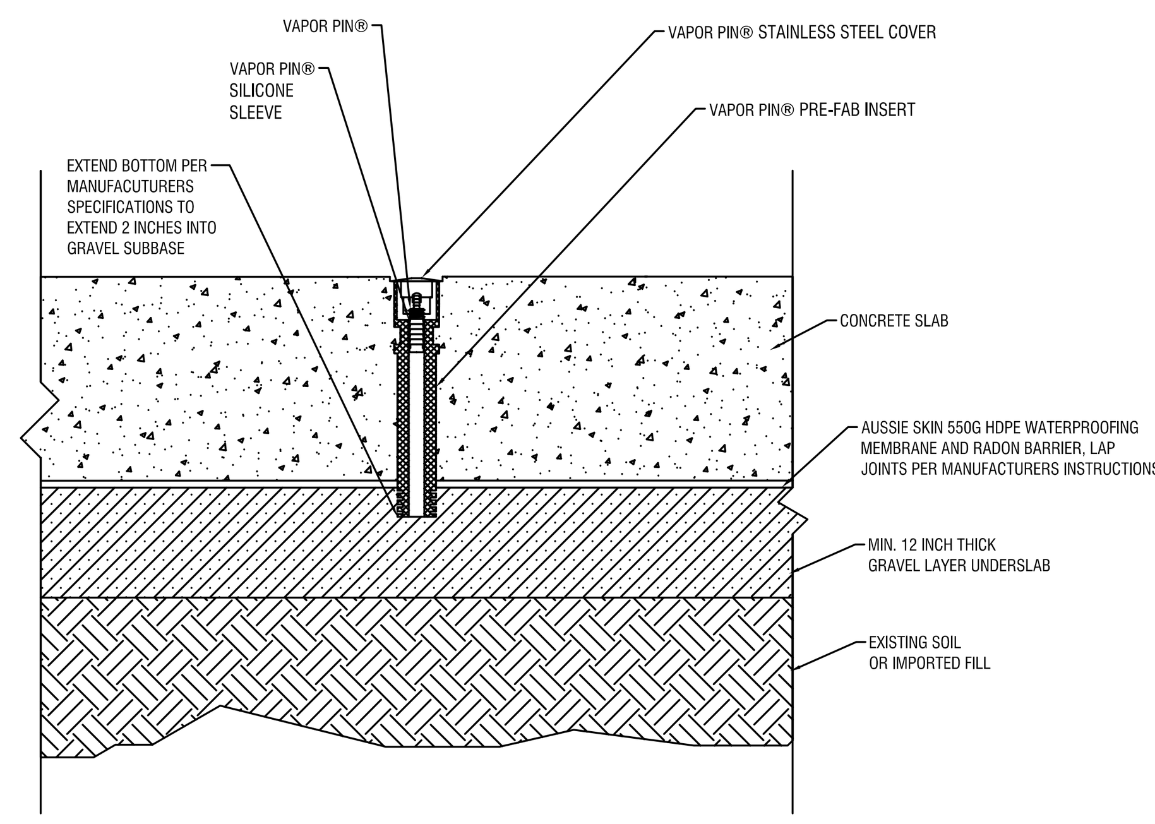
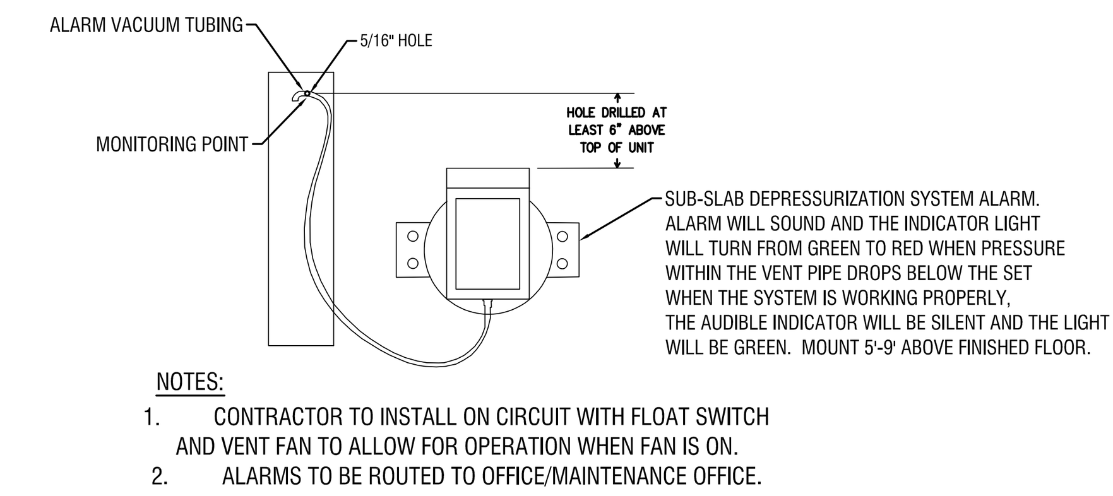


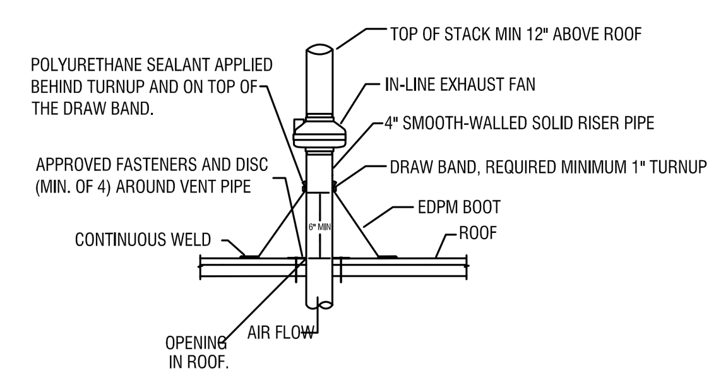
2 DETAIL AT HEADER
SCALE: NONE



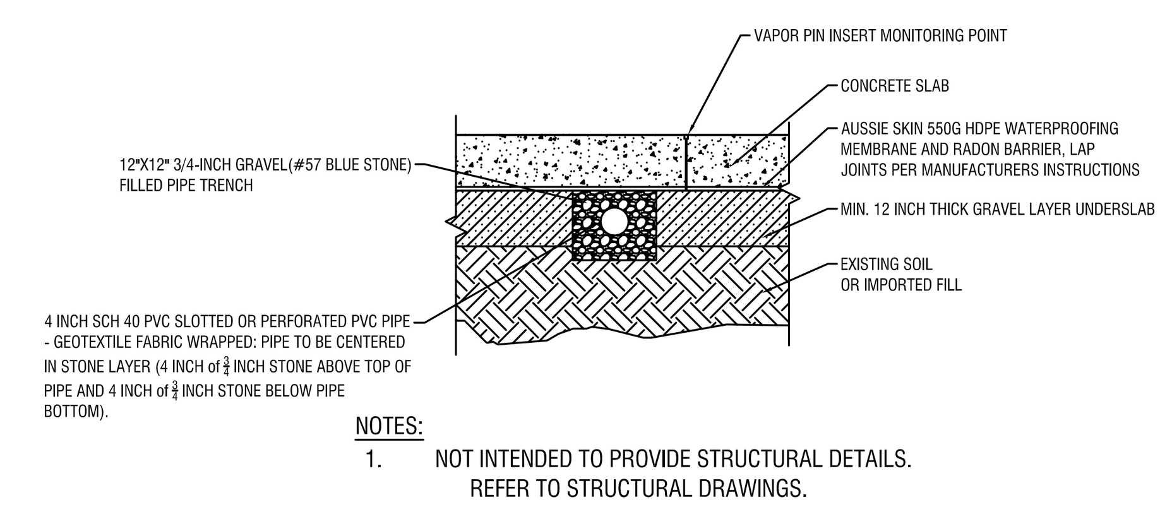
3 PROFILE AT MONITORING POINT
SCALE: NONE



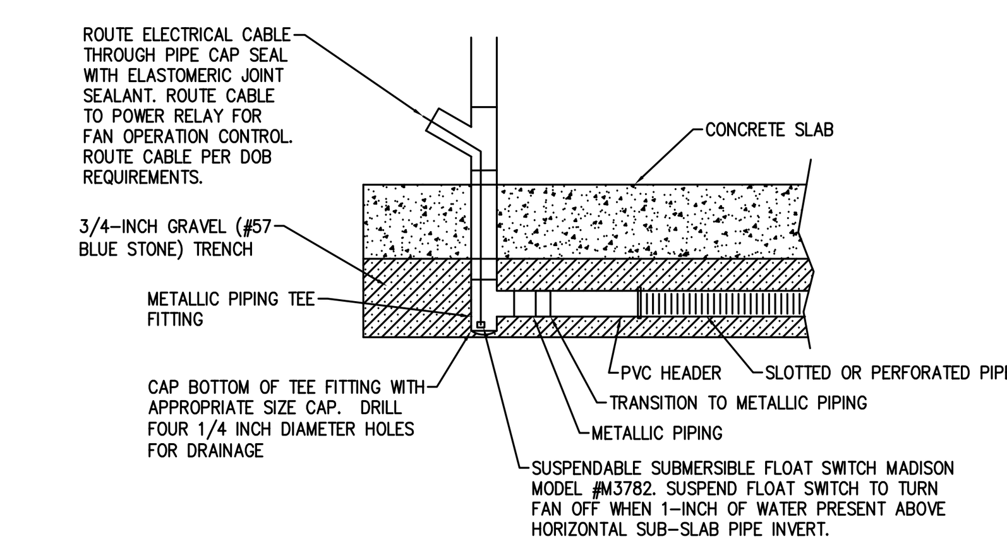
4 SUB-SLAB DEPRESSURIZATION SYSTEM ALARM
SCALE: NONE



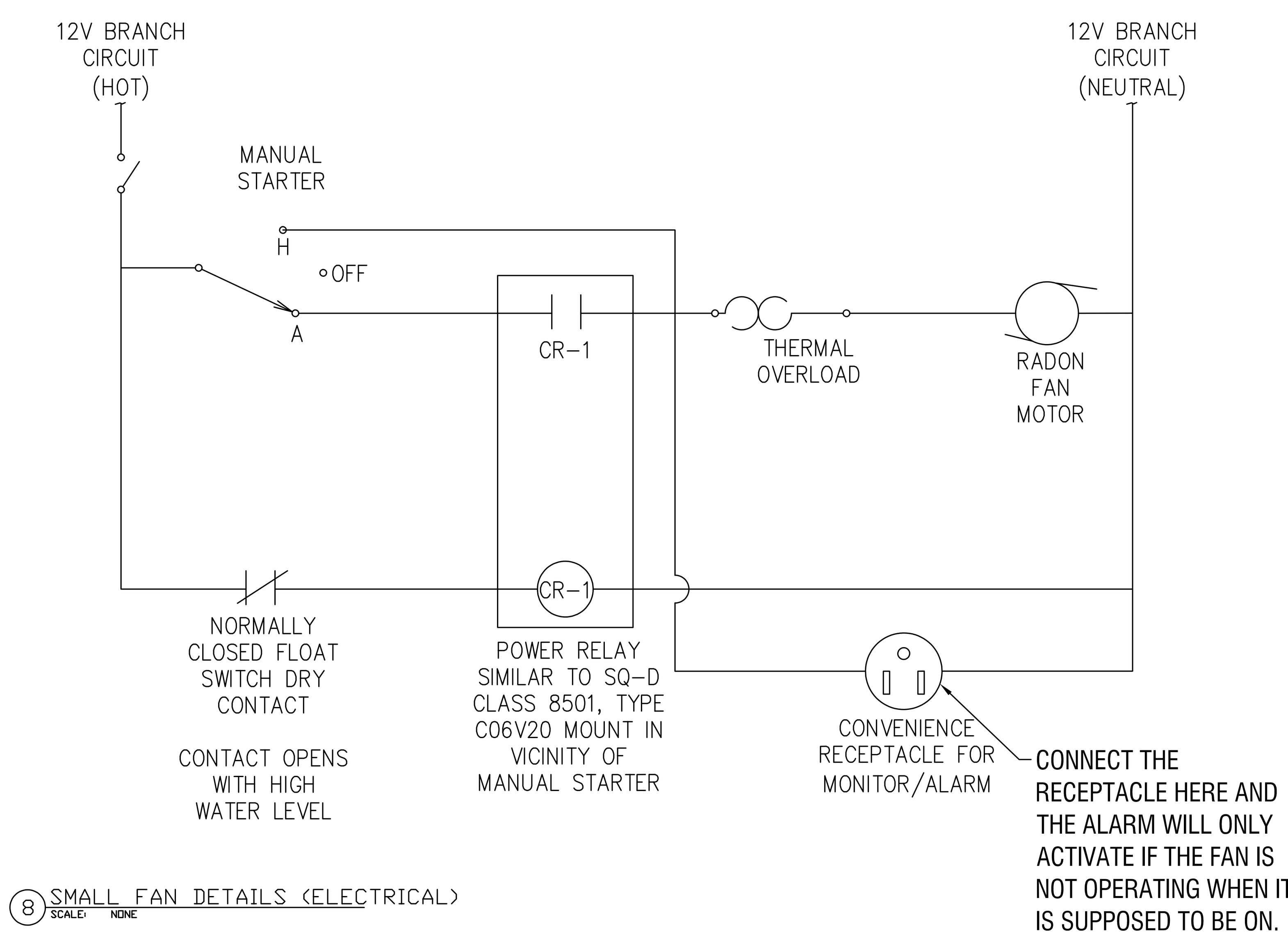
5 DETAIL AT ROOF
SCALE: NONE



6 MATERIAL PROFILE
SCALE: NONE



7 PROFILE AT RISER FROM SUB-SLAB AND FLOAT SWITCH
SCALE: NONE



8 SMALL FAN DETAILS (ELECTRICAL)
SCALE: NONE

NOTES

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NO.	REVISION	BY	DATE
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PROJECT/CLIENT
EBENEZER PLAZA OWNER PHASE II LLC
EBENEZER PLAZA II
589 CHRISTOPHER STREET
BROOKLYN, NY

DRAWING TITLE
SUB-SLAB DEPRESSURIZATION SYSTEM DETAILS

ISSUED FOR

DESIGNED BY: AB
DRAWN BY: DP
REVIEWED BY: AB
SCALE: 3/32" = 1'-0"
DATE: AUGUST, 2022
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PROJECT/DRAWING NUMBER
20918.07

F0-200

APPENDIX B

SSDS Inspection Form

RadonAway®

EC6 PRO SERIES FAN

Adjustable Performance. Mitigation Flexibility.

Radon and Vapor Intrusion Mitigation Fan

All RadonAway® fans are specifically designed for commercial and residential radon and vapor intrusion mitigation. Our EC6 Fan provides built-in flexibility to allow the professional mitigator to design and build the mitigation system while bringing only one fan to the job site. The EC6 runs quietly and is ideal for most sub-slab and sub-membrane depressurization/ventilation systems.

2100 HVI CERTIFIED

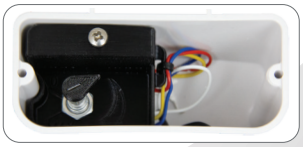
MADE IN USA — Made in USA with U.S. and imported parts.

ETL Listed — Intertek

5 YEAR WARRANTY — All RadonAway® inline radon fans are covered by our 5-year, hassle-free warranty.

EC Technology

The EC6 Pro Series Fan features an electronically commutated (EC) motor with built-in speed control that enables the professional installer to dial in the desired pressure and airflow to best meet site conditions.



Features

- Speed control to dial in the optimal pressure and airflow based on site conditions
- Eternalast™ polycarbonate plastic housing
- ETL Listed for indoor or outdoor use
- HVI certified fan performance
- Rated for commercial or residential use
- Energy efficient
- Seams sealed to inhibit radon leakage
- Water-hardened motorized impeller
- Thermally protected motor
- Ultra-quiet operation

EC6 PRO SERIES

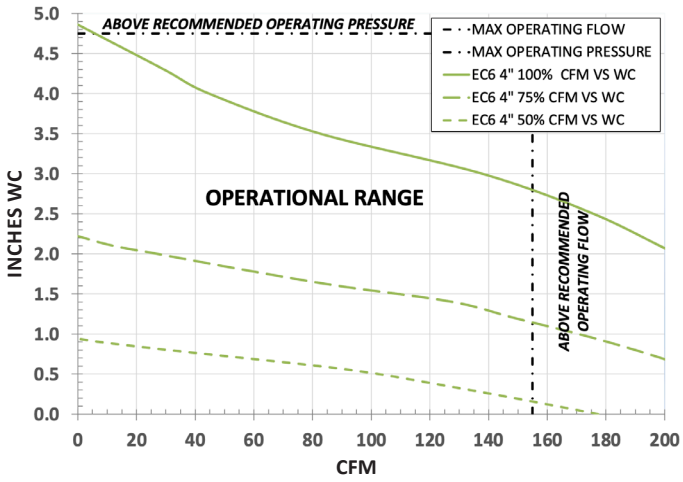
TECHNICAL SPECIFICATIONS

MODEL	P/N	FAN DUCT DIAMETER	WATTS	RECOM. MAX. OP. PRESSURE "WC	TYPICAL CFM vs. STATIC PRESSURE WC										
					0"	.2"	.5"	1.0"	1.5"	2.0"	2.5"	3.0"	3.5"	4.0"	4.5"
EC6	28625	6"	140-175	4.25	514	490*	451	381	330	271	211	152	101	49	-
		4"**	112-175	4.75	341	330	304	271	239	204	175	137	87	49	31

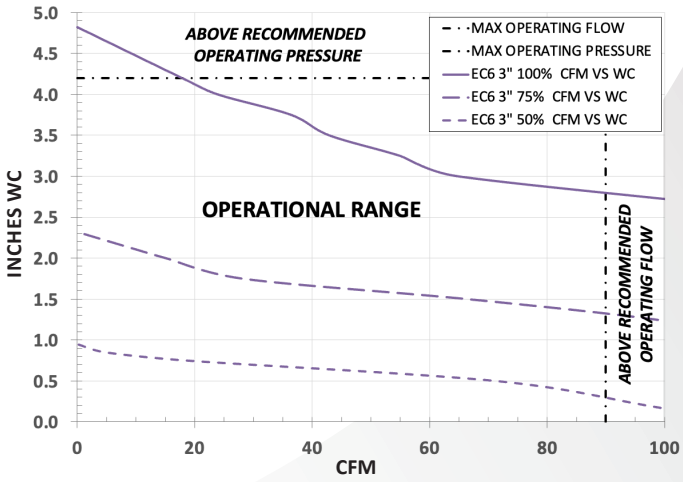
*HVI Certified Value. **Using 6"x4" reducing coupling.

PERFORMANCE CURVES

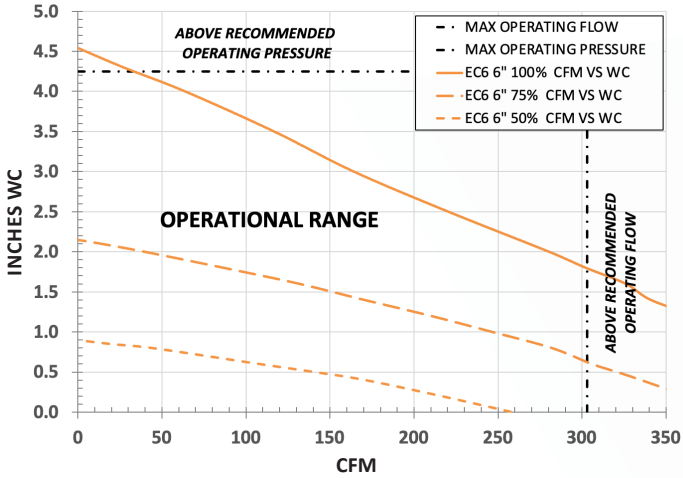
4" INCH PIPE



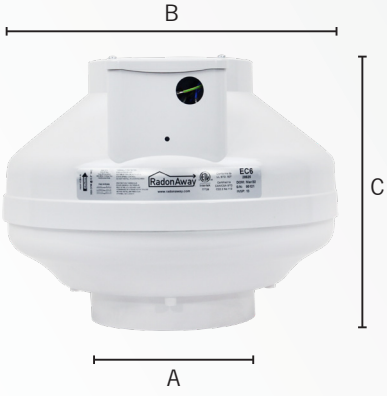
3" INCH PIPE



6" INCH PIPE



FAN DIMENSIONS



Model	A	B	C
EC6	6"	11.75"	9.1"

RadonAway

Rev A 0922
P/N 02099

SSDS INSPECTION FORM
Ebenezer Plaza II Property 589 Christopher Avenue
Borough of Brooklyn, Kings County, New York
BCP Site C224241

Performed by:_____ Date:_____Time:_____

Sub-Slab Depressurization System (SSDS) Inspection (circle noted condition)

1A - Describe SSDS function: Normal Decreased function Non-functioning
Explain if not normal:

1B - Is there any damage or defect to the foundation that reduces or has the potential to reduce the effectiveness of the SSDS? (circle one)
No Yes If yes, describe needed repairs:

If yes, owner to notify DEC within 48 hours. Attached documentation of notification.

1C - Describe blower conditions:(circle one)	Normal	Decreased function	Non-functioning
Excess wear:	None	Minimal (no change to system function)	Non-functioning
Visual damage:	None	Minimal (no change to system function)	Non-functioning
Listen for smooth blower operation:		Normal Inconsistent (describe)	Non-functioning

Measure vacuum pressure: _____ Is it within design parameters? Yes No
_____

Measure air flow: is it within design parameters? yes no

1D - Is system functioning as designed to continue to be protective of human health and the environment?
Yes No If no, describe needed modifications:

If no, owner to notify DEC within 48 hours. Attach documentation of notification.

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1E - Describe condition of SSDS' Vacuum Monitoring Points.

Vacuum Monitoring Point ID	PID Reading (ppm)	Pressure (IOW)	Condition (circle one)
			Good/Intact Damaged
			Good/Intact Damaged
			Good/Intact Damaged
			Good/Intact Damaged
			Good/Intact Damaged
			Good/Intact Damaged
			Good/Intact Damaged
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			Good/Intact Damaged
			Good/Intact Damaged
			Good/Intact Damaged

Additional Observations/ Notes: