580 GERARD FORMER POST OFFICE
VEHICLE REPAIR SHOP SITE
BRONX COUNTY, NEW YORK

Remedial Investigation Report/
Remedial Action Work Plan

NYSDEC BCP Number: C203142
580-610 Gerard Avenue, Bronx, NY

Prepared for:
SB GERARD AVENUE LLC
570 Lexington Avenue, 43rd Floor
New York, New York 10022

Prepared by:
ROUX ENVIRONMENTAL ENGINEERING & GEOLOGY, D.P.C.
209 Shafter Street
Islandia, New York
631-232-2600

MAY 2022

CERTIFICATIONS

I, Robert Kovacs, P.G., certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Remedial Investigation Report/Remedial Action Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER 10. I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

Robert Kovacs, P.G.	5/24/2022	
Qualified Environmental Professional	Date	Signature

I, Brian P. Morrissey, certify that I am currently a NYS registered professional engineer and that this Remedial Action 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).

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

Brian Morrissey, P.E.	5/24/2022	
NYS Professional Engineer #062617	Date	Signature

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.

REMEDIAL INVESTIGATION REPORT/ REMEDIAL ACTION WORK PLAN

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

A. Metes and Bounds
B. Soil Boring and Well Construction Logs
C. Groundwater Sampling Forms
D. Soil Vapor Sampling Forms
E. Analytical Data from the Remedial Investigation
F. Data Usability Summary Report for Remedial Investigation Data
G Site-Specific Quality Assurance Project Plan
H. Site-Specific Health and Safety Plan
I. Site Specific Community Air Monitoring Plan
J. Resumes of Key Personnel
K. Proposed Demolition Plans
L. Proposed Support of Excavation Plans
M. NYSDEC Request to Import/Reuse Fill Material Form

LIST OF ACRONYMS

µg/kg .....Micrograms per Kilogram
µg/L.....Micrograms per Liter
µg/m^3.....Micrograms per Cubic Meter
mg/kg .....Milligrams per Kilogram
4,4'-DDE.....4,4'-Dichlorodiphenyldichloroethylene
4,4'-DDD 4,4-Dichlorodiphenyldichloroethane
4,4'-DDT.....4,4-Dichlorodiphenyltrichloroethane
AOCs.....Areas of Concern
ARARs.....Applicable or Relevant and Appropriate Requirements
ASP .....Analytical Services Protocol
AWQSGVs .....Ambient Water Quality Standards and Guidance Values
BCA .....Brownfield Cleanup Agreement
BCP.....Brownfield Cleanup Program
BEEI.....Bureau of Environmental Exposure Investigation
bls.....Below Land Surface
BOA .....Brownfield Opportunity Areas
CAMP .....Community Air Monitoring Plan
CEH.....Center for Environmental Health
CFR.....Code of Federal Regulations
COC .....Certificate of Completion
CP-51 .....Commissioner Policy-51
CPP .....Citizen Participation Plan
CQAP.....Construction Quality Assurance Plan
CSM.....Conceptual Site Model
cy.....Cubic Yards
DCE.....cis-1,2-dichloroethene
DEC.....Department of Environmental Conservation
DER-10 .....NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation
DMM.....Division of Materials Management

DO.....Dissolved Oxygen
DUSR.....Data Usability Summary Report
EC .....Engineering Control
ECL.....Environmental Conservation Law
EDD .....Electronic Data Deliverable
EJ.....Environmental Justice
ELAP.....Environmental Laboratory Approval Program
ESA.....Environmental Site Assessment
FER .....Final Engineering Report
Ft .....Feet/Foot
HASP .....Health and Safety Plan
HAZWOPER .....Hazardous Waste Operations and Emergency Response
IC.....Institutional Control
MEK.....Methyl Ethyl Ketone; 2-butanone
MS/MSD.....Matrix Spike/Matrix Spike Duplicate
MW .....Monitoring Well
NYCDEP.....New York City Department of Environmental Protection
NYCDOT.....New York City Department of Traffic
NYCRR.....New York Codes, Rules, and Regulations
NYSDEC.....New York State Department of Environmental Conservation
NYSDOH.....New York State Department of Health
NYSDOT .....New York State Department of Transportation
O&M.....Operation and Maintenance
OSHA.....Occupational Safety and Health Administration
PAHs .....Polycyclic Aromatic Hydrocarbons
PCBs .....Polychlorinated Biphenyls
PCE .....Tetrachloroethene (Perchloroethene)
PEJA .....Potential Environmental Justice Area
PDF .....Portable Document Format
PID .....Photo Ionization Detector
PPE.....Personal Protective Equipment

PVC.....Polyvinyl Chloride
QAPP .....Quality Assurance Project Plan
QA/QC.....Quality Assurance/Quality Control
RAOs.....Remedial Action Objectives
RAWP.....Remedial Action Work Plan
RI.....Remedial Investigation
RIR.....Remedial Investigation Report
RIR/RAWP .....Remedial Investigation Report/Remedial Action Work Plan
SCG.....Standards, Criteria, and Guidance
SCOs .....Soil Cleanup Objectives
SEQRA .....State Environmental Quality Review Act
SGC.....Short-term Guidance Concentration
SMP.....Site Management Plan
SoMP.....Soil Management Plan
SOP .....Site Operations Plan
SSO .....Site Safety Officer
Stiles.....Stiles Properties, LLC
SVOCs .....Semivolatile Organic Compounds
SWPPP.....Stormwater Pollution Prevention Plan
TAGM.....Technical and Administrative Memorandum
TAL.....Target Analyte List
TBCs .....To Be Considered
TCE.....Trichloroethene
TCL .....Target Compound List
TOGS .....Technical and Operational Guidance Series
USEPA.....United States Environmental Protection Agency
USGS .....United States Geological Survey
VOCs.....Volatile Organic Compounds

EXECUTIVE SUMMARY

SB Gerard Avenue LLC entered into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) on December 14, 2020, to investigate and remediate a 0.68-acre property located at 580-610 Gerard Avenue in the Borough of Bronx, Bronx County, New York at Tax Block 2353, Lot 1 (Site). The Brownfield Cleanup Program (BCP) Site is also known as the 580 Gerard Former Post Office Vehicle Repair BCP Site No. C203142. SB Gerard Avenue LLC entered the BCP with a Volunteer status. The planned redevelopment of the Site includes the construction of a new residential and commercial mixed-use building with a full basement, which will be a largely unoccupied space. The basement will be used for vehicle parking with access to the utility and mechanical rooms. The proposed building will be approximately 204,476 square feet and will include 30% affordable housing residential rental units. In total, this proposed development will comprise a total of 197 multifamily rental units, approximately 5,000 square feet of retail commercial space, and an estimated 70 parking spaces. Refer to the BCP application for additional details.

This Remedial Investigation Report/Remedial Action Work Plan (RIR/RAWP) summarizes the nature and extent of contamination as determined from data gathered during the Remedial Investigation (RI) performed between June 28, 2021 and July 16, 2021; December 20, 2021; and December 21, 2021 and the plan for remediation. The objectives of the RI were to determine the nature and extent of contamination at the Site, characterize environmental media at the Site, qualitatively assess the potential exposure of receptors to Site contaminants, and generate sufficient data necessary to support the development of a RIR/RAWP, based on the proposed mixed residential and commercial Site use. This RIR/RAWP provides an evaluation of a Track 1 cleanup and other Remedial Action alternatives, their associated costs, and the recommended and preferred remedy.

The Site is located in the County and Borough of the Bronx, New York and is identified as Block 2353, Lot 1, on the New York City Bronx Tax Map. A United States Geological Survey (USGS) topographical quadrangle map (Figure 1) shows the Site location. The Site is situated on an approximately 0.68-acre area. Adjacent properties include a one-story warehouse and garage

building to the north; a one-story warehouse and garage building to the south; residential apartment buildings to the east; and a two-story commercial building and parking lot to the west.

The Site is a rectangular-shaped parcel of land that is currently improved with one single-story garage building with offices that has a footprint of approximately 31,200 square feet. The building has a small partial basement located along the Gerard Avenue side of the building. The building is currently unoccupied and is scheduled to be demolished in the near future to allow for future remedial activities to be performed.

Based on information provided in the previously developed environmental investigations, the Site was first developed by 1950 as a vehicle maintenance and storage facility for the United States Postal Office. By 2001 through 2007, the building was utilized for automotive service, vehicle repair, and parking. After 2007, the Site was occupied by a construction company for office use and storage.

SIGNIFICANT THREAT

The NYSDEC and New York State Department of Health (NYSDOH) have reviewed this RIR/RAWP and determined that this Site does not pose a significant threat to human health and the environment. This determination was included in the RAWP Fact Sheet.

SUMMARY OF THE REMEDIAL INVESTIGATION

Beginning on June 28, 2021, a total of fourteen soil borings (RXSB-01 through RXSB-14), six groundwater wells, seven soil vapor, and four sub slab soil vapor points were installed at the locations shown on Figure 2.

A total of 53 discrete soil samples (excluding QA/QC samples) were collected and submitted for laboratory analysis for the following parameters:

- TCL/Part 375 VOCs + 10 highest concentration tentatively identified compound (TIC) List via United States Environmental Protection Agency (USEPA) Method 8260D;
- TCL/Part 375 Base neutral acids (BNA)/Semivolatile organic compounds (SVOCs), including 1,4-Dioxane + 20 highest concentration TIC List via USEPA Method 8270E;
- TCL/Part 375 Pesticides via USEPA Method 8081B;
- TCL/Part 375 Herbicides via USEPA Method 8151A;

- TCL/Part 375 Polychlorinated Biphenyls (PCBs) via USEPA Method 8082A;
- TAL/Part 375 Metals via USEPA Method 6020B including mercury using USEPA Method 7471B;
- Hexavalent chromium and trivalent chromium using USEPA method 7196A;
- Total Cyanide via USEPA Method 9012B; and
- Emerging Contaminants (ECs) List including 1,4-Dioxane via USEPA Method 8270E and the 21 Per- and Polyfluoroalkyl Substances (PFAS) via USEPA Method 537 (modified).

A total of 6 groundwater samples (excluding QA/QC samples) were collected and submitted for laboratory analysis for the following parameters:

- TCL/Part 375 VOCs + 10 highest concentration TIC List via United States Environmental Protection Agency (USEPA) Method 8260D;
- TCL/Part 375 BNA/SVOCs, including 1,4-Dioxane + 20 highest concentration TIC List via USEPA Method 8270E;
- TCL/Part 375 Pesticides via USEPA Method 8081B;
- TCL/Part 375 Herbicides via USEPA Method 8151A;
- TCL/Part 375 Polychlorinated Biphenyls (PCBs) via USEPA Method 8082A;
- TAL/Part 375 Metals (total and dissolved) via USEPA Method 6020B including mercury using USEPA Method 7471B;
- Hexavalent chromium and trivalent chromium using USEPA method 7196A;
- Total Cyanide via USEPA Method 9012B; and
- Emerging Contaminants (ECs) List including 1,4-Dioxane via USEPA Method 8270E SIM and the 21 Per- and Polyfluoroalkyl Substances (PFAS) via USEPA Method 537 (modified).

A total of seven soil vapor samples and four sub-slab soil vapor samples (excluding QA/QC samples) were collected and submitted for laboratory analysis for the following parameter:

- VOCs via USEPA Method TO-15.

Soil/Fill Results

The soil laboratory analytical results were compared to NYSDEC Part 375 Unrestricted Use SCOs, Part 375 Protection of Groundwater SCOs, and Part 375 Restricted Residential SCOs.

There were eight VOCs detected above the Protection of Groundwater SCOs, including one VOC detected above the Restricted Residential SCOs. Laboratory analytical data for the soil exceedances for VOCs are summarized below:

- 1,2,4-trimethylbenzene was detected at a concentration exceeding its Restricted Residential SCO (52 mg/kg) in one sample at one location (RXSB-06/23-25). The compound was detected at a concentration exceeding its Protection of Groundwater SCO (3.6 mg/kg) in two samples at two locations (RXSB-05/0-2, RXSB-06/23-25).
- Acetone was detected at a concentration exceeding its Protection of Groundwater SCO (0.05 mg/kg) in one soil sample, RXSB-11/0-2 duplicate (0.051 mg/kg). Acetone is commonly used in laboratories and thus may be introduced into a sample from laboratory cross-contamination, not from the Site.
- 1,3,5-trimethylbenzene (mesitylene) was detected at a concentration exceeding its Protection of Groundwater SCO (8.4 mg/kg) in two samples at two locations (RXSB-05/0-2, RXSB-06/23-25).
- Benzene was detected at a concentration exceeding its Protection of Groundwater SCO (0.06 mg/kg) in one sample, RXSB-05/0-2 (0.086 J mg/kg).
- Methylene chloride was detected at a concentration exceeding its Protection of Groundwater SCO (0.05 mg/kg) in one sample, RXSB-05/0-2 (0.055 J mg/kg).
- N-butylbenzene and n-propylbenzene were both detected at concentrations exceeding their Protection of Groundwater SCOs (12 mg/kg and 3.9 mg/kg, respectively) in one sample, RXSB-06/23-25 (22 mg/kg n-butylbenzene, 15 mg/kg n-propylbenzene).
- Xylenes (total) was detected at a concentration exceeding its Protection of Groundwater SCO (1.6 mg/kg) in one sample, RXSB-05/0-2 (3.6 J mg/kg).

There were four SVOCs, all polycyclic aromatic hydrocarbons (PAHs), detected above the Protection of Groundwater SCOs and six SVOCs detected above the Restricted Residential SCOs. Laboratory analytical data for the soil exceedances for SVOCs are summarized below:

- Benzo[a]anthracene was detected at a concentration exceeding both its Protection of Groundwater SCO and Restricted Residential SCO (both 1 mg/kg) in six samples at five locations at depths ranging from 0-12 ft bls. The maximum concentration detected was 4.7 mg/kg, which was found in sample RXSB-01/0-2.
- Benzo[a]pyrene was detected at a concentration exceeding its Restricted Residential SCO (1 mg/kg) in eight samples at seven locations at depths ranging from 0-12 ft bls. The maximum concentration detected was 5.0 J mg/kg, which was found in sample RXSB-01/0-2.

- Benzo[b]fluoranthene was detected at a concentration exceeding its Restricted Residential SCO (1 mg/kg) in 11 samples at 8 locations at depths ranging from 0-12 ft bls. Five samples at four locations also had a concentration of benzo[b]fluoranthene that exceeded its Protection of Groundwater SCO (1.7 mg/kg). The maximum concentration detected was 5.6 mg/kg, which was found in sample RXSB-01/0-2.

- Benzo[k]fluoranthene was detected at a concentration exceeding its Protection of Groundwater SCO (1.7 mg/kg) in one sample at one location, RXSB-01/0-2 (2.4 mg/kg). Four samples at four locations also had a concentration of benzo[k]fluoranthene that only exceeded its Unrestricted Use SCO (0.8 mg/kg). The maximum concentration detected was 2.4 mg/kg, which was found in sample RXSB-01/0-2.

- Chrysene was detected at a concentration exceeding its Protection of Groundwater SCO (1 mg/kg) in five samples at five locations at depths ranging from 0-12 ft bls. One sample, RXSB-01/0-2, also had a concentration of chrysene that exceeded its Restricted Residential SCO (3.9 mg/kg), at the maximum concentration detected of 4.4 mg/kg.

- Dibenzo(a,h)anthracene was detected at a concentration exceeding its Restricted Residential SCO (0.33 mg/kg) in four samples at three locations at depths ranging from 0-12 ft bls. The maximum concentration detected was 0.68 mg/kg, which was found in sample RXSB-01/0-2.

- Indeno(1,2,3-cd)pyrene was detected at a concentration exceeding its Restricted Residential SCO (0.5 mg/kg) in 11 samples at 8 locations at depths ranging from 0-12 ft bls. The maximum concentration detected was 2.7 mg/kg, which was found in sample RXSB-01/0-2.

There were ten metals detected above Unrestricted Use SCOs, the Protection of Groundwater SCOs, and/or the Restricted Residential SCOs. Laboratory analytical data for the soil exceedances for metals are summarized below:

- Barium was detected at a concentration exceeding its Restricted Residential SCO (400 mg/kg) in three samples at three locations at depths ranging from 0-12 ft bls. The maximum detection of barium was 762 mg/kg, found in sample RXSB-10/4-6. Three samples at three locations also had a concentration of barium that only exceeded its Unrestricted Use SCO (350 mg/kg). The maximum concentration detected was 370 mg/kg, which was found in sample RXSB-12/0-2.

- Cadmium was detected at a concentration exceeding its Restricted Residential SCO (4.3 mg/kg) in two samples at two locations at depths ranging from 10-12 ft bls with a maximum concentration of 5.2 mg/kg in sample RXSB-10/10-12.

- Lead was detected at a concentration exceeding its Restricted Residential SCO and/or Protection of Groundwater SCO (400 mg/kg and 450 mg/kg, respectively) in seven samples from five locations at depths ranging from 0-12 ft bls. The maximum detection of lead was 1,110 mg/kg, found in sample RXSB-10/10-12. Twenty samples at

fourteen locations also had a concentration of lead that exceeded its Unrestricted Use SCO (63 mg/kg). The maximum concentration detected was 370 mg/kg, which was found in sample RXSB-13/4-6.

- Mercury was detected at a concentration exceeding both its Protection of Groundwater SCO (0.73 mg/kg) and Restricted Residential SCO (0.81 mg/kg) in four samples at three locations at depths ranging from 0-12 ft bls. The highest concentration of mercury detected was 2 mg/kg in sample RXSB-02/4-6. Nineteen samples at twelve locations also had a concentration of mercury that only exceeded its Unrestricted Use SCO (0.18 mg/kg). The maximum concentration detected was 0.73 mg/kg, which was found in samples RXSB-04/10-12 and RXSB-10/10-12.

- Zinc was detected at a concentration exceeding its Protection of Groundwater SCO (2480 mg/kg) in one sample at one location, RXSB-10/10-12 (3010 mg/kg). Twenty-nine samples at fourteen locations also had a concentration of zinc that exceeded its Unrestricted Use SCO (109 mg/kg). The maximum concentration detected was 2330 mg/kg, which was found in sample RXSB-03/10-12.

- Trivalent chromium was detected at a concentration exceeding its Unrestricted Use SCO (30 mg/kg) in eleven samples at eight locations at depths ranging from 0-12 ft bls. The highest concentration of trivalent chromium detected was 79.3 mg/kg in sample RXSB-02/10-12.

  - Hexavalent chromium was detected at a concentration exceeding its Unrestricted Use SCO (1 mg/kg) in two samples at two locations at depths ranging from 4-6 ft bls and 23-25 ft bls. The highest concentration of hexavalent chromium detected was 5.1 mg/kg in sample RXSB-06/23-25.

  - Total chromium was detected at a concentration exceeding its Unrestricted Use SCO (30 mg/kg) in two samples at nine locations at depths ranging from 0-12 ft bls. The highest concentration of total chromium detected was 79.3 mg/kg in sample RXSB-02/10-12.

  - Copper was detected at a concentration exceeding its Unrestricted Use SCO (50 mg/kg) in thirteen samples at eight locations at depths ranging from 0-12 ft bls. The highest concentration of copper detected was 134 mg/kg in sample RXSB-04/10-12.

  - Nickel was detected at a concentration exceeding its Unrestricted Use SCO (30 mg/kg) in eight samples at seven locations at depths ranging from 0-12 ft bls. The highest concentration of nickel detected was 78 mg/kg in sample RXSB-13/0-2.

Concentrations of PCBs exceeding Unrestricted Use SCO (0.1 mg/kg), Restricted Residential SCO (1 mg/kg), and/or Protection of Groundwater SCO (3.2 mg/kg) were detected in

twelve samples at nine locations. Laboratory analytical data for the exceedances are summarized below:

- PCBs were detected at a concentration exceeding both its Protection of Groundwater SCO (3.2 mg/kg) and Restricted Residential SCO (1 mg/kg) in two samples at one location at depths ranging from 4-12 ft bls. The highest concentration of PCBs detected was 39 mg/kg in sample RXSB-04/4-6. PCBs were detected at a concentration exceeding its Restricted Residential SCO (1 mg/kg) in two samples at two locations at depths ranging from 0-2 ft bls. The highest concentration of PCBs detected was 1.3 mg/kg in sample RXSB-11/0-2. PCBs were detected at a concentration exceeding its Unrestricted Uses SCO (0.1 mg/kg) in eight samples at eight locations at depths ranging from 0-2 ft bls. The highest concentration of PCBs detected was 0.88 mg/kg in duplicate sample RXSB-11/0-2.

Pesticides were detected at concentrations exceeding their Unrestricted Use SCOs in several samples, but no detections exceeded Restricted Residential SCOs or Protection of Groundwater SCOs. Laboratory analytical data for the Unrestricted Use SCO exceedances are summarized below:

- P,P'-DDE was detected at a concentration exceeding its Unrestricted Use SCO (0.0033 mg/kg) in four samples at three locations at depths ranging from 0-6 ft bls. The highest concentration detected was 0.014 mg/kg in sample RXSB-06/0-2.
- P,P'-DDT was detected at a concentration exceeding its Unrestricted Use SCO (0.0033 mg/kg) in six samples at five locations at depths ranging from 0-6 ft bls. The highest concentration detected was 0.06 mg/kg in sample RXSB-09/0-2.

PFAS detections in soil were all below Unrestricted Use SCOs, Restricted Residential SCOs, or Protection of Groundwater SCOs.

Groundwater Results

Laboratory analytical data for groundwater samples are summarized in Tables 10 through 15 and are compared to NYSDEC Ambient Water Quality Standards and Guidance Values (AWQSGVs) for Class GA groundwater.

VOC exceedances were identified in three groundwater samples (RXMW-04, RXMW-05, RXMW-06). A total of seven VOCs, including 1,2,4-trimethylbenzene (maximum concentration of 360 µg/L in RXMW-04); 1,3,5-trimethylbenzene (maximum concentration of 140 µg/L in RXMW-04); chloroform (maximum concentration of 7.5 µg/L in RXMW-05); isopropylbenzene (maximum concentration of 24 µg/L in well RXMW-04); n-butylbenzene (maximum

concentration of 29 µg/L in RXMW-04); n-propylbenzene (maximum concentration of 55 µg/L in RXMW-04); and sec-butylbenzene (maximum concentration of 9.8 µg/L in RXMW-04) were found exceeding their AWQSGVs.

Four metals were detected in unfiltered groundwater samples at concentrations above AWQSGVs, including iron (maximum detection of 682 µg/L found in RXMW-01); magnesium (maximum detection of 42,600 µg/L found in RXMW-03); manganese (maximum detection of 534 µg/L found in RXMW-04); and sodium (maximum detection of 222,000 µg/L found in RXMW-01). Magnesium, manganese, and sodium were also detected in filtered groundwater samples at concentrations exceeding AWQSGVs. Magnesium was detected at a maximum concentration of 41,100 µg/L in dissolved sample RXMW-03; manganese was detected at a maximum concentration of 488 µg/L in dissolved sample RXMW-04; and sodium was detected at a maximum concentration of 225,000 µg/L in dissolved sample RXMW-01. Note that these are all naturally occurring metals, commonly found in groundwater. Laboratory analysis for the field filtered and unfiltered samples yielded fairly consistent results.

A total of 10 PFAS compounds were detected in groundwater. The NYSDEC maximum contaminant level (MCL) for Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS) is 10 nanograms per liter (ng/L). PFOA exceedances were identified in all six of the groundwater samples (maximum concentration of 22.9 ng/L in RXMW-02). PFOS exceedances were identified in four of the groundwater samples (maximum concentration of 18.2 ng/L in RXMW-05). Although PFAS compounds were detected in all groundwater samples collected during the RI, there were no detections of PFAS compounds in soil exceeding Unrestricted Use screening levels provided in the NYSDEC's January 2021 PFAS Guidance Document. Based on this information, it appears PFAS detections in groundwater are attributed to an off-Site source or regional impacted groundwater.

PCBs and pesticides were not detected in any of the groundwater samples collected during this RI. 1,4-Dioxane, an emerging contaminant, was not detected in any of the groundwater samples.

Soil Vapor Results

Seven soil vapor samples (RXSV-01 through RXSV-07) and four sub-slab soil vapor samples (RXSS-01 through RXSS-04) were collected from locations beneath the existing warehouse building, as shown on Figure 2 and submitted for VOC analysis. In total, 41 VOC compounds were detected in the seven soil vapor samples and four sub-slab soil vapor samples collected as part of this RI.

There are currently no standards for soil vapor established by either NYSDEC or the NYSDOH. The NYSDOH has established guidance for evaluating soil vapor intrusion in which the results of soil vapor and sub-slab soil vapor samples are compared to corresponding indoor air quality results. The guidance is presented in Matrix A, Matrix B, and Matrix C from the NYSDOH Center for Environmental Health (CEH) Bureau of Environmental Exposure Investigation (BEEI) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006 (matrices were updated in May 2017). The matrices provide guidance relative to eight common VOC contaminants including, carbon tetrachloride, cis-1,2-dichloroethene, 1,1-dichloroethene, trichloroethene (TCE), tetrachloroethene (PCE), 1,1,1-trichloroethane, methylene chloride, and vinyl chloride.

Matrix A Compounds: carbon tetrachloride, cis-1,2-dichloroethene, 1,1-dichloroethene, TCE

- Carbon tetrachloride was detected in two sub-slab soil vapor samples (RXSS-01 and RXSS-02) at concentrations of 0.51 $\mu g/m^3$ and 0.46 $\mu g/m^3$, respectively.
- Cis-1,2-dichloroethene was detected in one soil vapor sample (RXSV-03) at a concentration of 0.64 $\mu g/m^3$.
- TCE was detected in one sub-slab soil vapor sample (RXSS-04) at a concentration of 0.23 D $\mu g/m^3$ and one soil vapor sample (RXSV-03) at a concentration of 47 $\mu g/m^3$.
- 1,1- Dichloroethene was not detected in any of the soil vapor or sub-slab soil vapor samples.

Matrix B Compounds: PCE, 1,1,1-trichloroethane, methylene chloride

- PCE was detected in three sub-slab soil vapor samples (RXSS-01, RXSS-03, and RXSS-04) ranging in concentrations from 3.6 D $\mu g/m^3$ to 7.8 $\mu g/m^3$ and all of the soil vapor samples (RXSV-01 through RXSV-07) ranging in concentrations from 11 $\mu g/m^3$ to 86 $\mu g/m^3$.

- 1,1,1-Trichloroethane was detected in three soil vapor samples (RXSV-02, RXSV-04, and RXSV-06) ranging in concentrations from 0.56 J µg/m^3 to 3.8 J µg/m^3, with the maximum detection in soil vapor sample RXSV-06.
- Methylene chloride was detected in one sub-slab soil vapor sample (RXSS-02) at a concentration of 4.4 µg/m^3 and one soil vapor sample (RXSV-07) at a concentration of 3.1 D µg/m^3.

Matrix C Compound: vinyl chloride

- Vinyl chloride was not detected in any of the soil vapor or sub-slab soil vapor samples.

QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

The following table summarizes the exposure assessment.

Environmental Media and Exposure Route	Human Exposure Assessment
Direct contact with subsurface soils (and incidental ingestion)	• Remedial workers can come into contact with soil if they perform ground intrusive work at the Site. • During remediation, remedial workers, trespassers, passersby, and utility workers could come into contact with contaminated soil contained in dust through inhalation, incidental ingestion, and dermal contact, however, these potential exposure scenarios will be controlled through implementation of the Health & Safety Plan (HASP), Soil Management Plan (SMP) and Community Air Monitoring Plan (CAMP) during remediation to avoid these exposure scenarios. • For off-site, there is currently no potential for exposure by direct contact with contaminated on-Site soils that were sampled during the RI. • Future exposure will be eliminated through addressing contaminated soil as described in the RAWP portion of this document.
Ingestion of groundwater	• Contaminated groundwater is not used for drinking water, as the Site is connected to the public water supply, therefore, there is no potential for human contact with groundwater.

Environmental Media and Exposure Route	Human Exposure Assessment
Direct contract with groundwater (and incidental ingestion)	• Remedial workers could come into contact with contaminated groundwater through dermal contact and incidental ingestion during groundwater remediation and sampling activities, however, these potential exposure scenarios will be controlled through implementation of the HASP, SMP, and CAMP during the remediation to avoid these exposure scenarios. • For off-Site, there is currently no potential for exposure by direct contact with contaminated on-Site groundwater that was sampled during the RI. Future exposure will be reduced or eliminated by addressing contaminated soil that is acting as a source of contamination to groundwater and addressing groundwater contamination as described in the RAWP portion of this document.
Inhalation of air (exposures related to soil vapor intrusion)	• Remedial workers, trespassers, and utility workers may be exposed to contaminated soil vapor inside the building or within open excavations, however, these potential exposure scenarios will be controlled through implementation of the HASP, SMP, and CAMP during the remediation to avoid these exposure scenarios. • For off-Site, there is currently no potential for exposure through soil vapor migration and intrusion with contaminated on-Site soil vapor that was sampled during the RI. • Future exposure and the potential for vapor intrusion will be mitigated since the current building is being demolished, sources of contamination under the current building will be remediated, and the new foundation will be constructed with a minimum of a green remediation sub-slab vapor barrier.

SUMMARY OF THE REMEDY

The elements of the Track 1 Unrestricted Use Cleanup remedy are:

1. Site preparation to abatement of all ACM associated with the exiting building structure for the purpose of preparing the site for the demolition of the building, to facilitate remediation.
2. Demolition of building structures to enable implementation of the subsurface Remedial Alternative 1 excavation.
3. Demolition, decommissioning, and removal of existing infrastructure associated with the former Site usage that could have contributed to contamination (i.e., abandoned

2,500-gallon UST, existing truck/hydraulic lifts, floor drains and associated drainpipes, etc.).

4. Excavation of soil/fill exceeding Unrestricted Use SCOs to achieve a Track 1 remedy. Soil/fill will be excavated to a depth of 16 ft bls across the Site and extend deeper in two hotspot areas (Figure 9). The hotspot areas will be excavated to a depth of 27 ft bls or to bedrock, whichever is encountered first.
5. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work.
6. Construction dewatering (as required) and handling of extracted groundwater by containerizing for on-Site pre-treatment prior to discharge to the city sewer system under the appropriate permits.
7. *In-situ* chemical oxidation (ISCO) of VOCs in groundwater to achieve a bulk reduction in groundwater contaminant concentrations and to further remediate deep soil contamination in the VOC hotspot area.
8. Collection and analysis of post-excavation confirmation samples to evaluate the performance of the remedy for soil within the general excavation area and the chromium hot spot excavation area.
9. Collection and analysis of post-ISCO confirmation samples to evaluate the performance of the remedy for groundwater and for soil within the VOC hot spot excavation area.
10. Appropriate off-Site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal.
11. Importation of clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) for use as backfill to establish redevelopment design grades, as necessary. Clean fill requiring testing will meet the Unrestricted Use SCOs.
12. Installation of a vapor barrier system (minimum thickness 20 mil) under the building foundation's slab and up the foundation walls to prevent soil vapor intrusion and any potential exposure to soil vapor from off-Site exposure pathways.
13. All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, will be addressed in accordance with all applicable Federal, State, and local rules and regulations
14. Installation of onsite groundwater monitoring wells.
15. If required, employment of a short-term Institutional Control in the form of an Environmental Easement in the event short-term groundwater monitoring at the Site is required compliance with the Monitoring Plan is necessary after the Certificate of Completion is achieved.

REMEDIAL INVESTIGATION/ REMEDIAL ACTION WORK PLAN

1.0 INTRODUCTION

SB Gerard Avenue LLC entered into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) on December 14, 2020, to investigate and remediate a 0.68-acre property located at 580-610 Gerard Avenue in the Borough of Bronx, Bronx County, New York at Tax Block 2353, Lot 1 (Site). The Brownfield Cleanup Program (BCP) Site is also known as the 580 Gerard Former Post Office Vehicle Repair BCP Site No. C203142. SB Gerard Avenue LLC entered the BCP with a Volunteer status. The planned redevelopment of the Site includes the construction of a new residential and commercial mixed-use building with a full basement, which will be a largely unoccupied space. The basement will be used for vehicle parking with access to the utility and mechanical rooms. The proposed building will be approximately 204,476 square feet and will include 30% affordable housing residential rental units. In total, this proposed development will comprise a total of 197 multifamily rental units, approximately 5,000 square feet of retail commercial space, and an estimated 70 parking spaces. Refer to the BCP application for additional details.

This Remedial Investigation Report/Remedial Action Work Plan (RIR/RAWP) summarizes the nature and extent of contamination as determined from data gathered during the Remedial Investigation (RI), performed between June 28, 2021 and July 16, 2021; December 20, 2021; and December 21, 2021 and the plan for remediation. The objectives of the RI were to determine the nature and extent of contamination at the Site, characterize environmental media at the Site, qualitatively assess the potential exposure of receptors to Site contaminants, and generate sufficient data necessary to support the development of a RIR/RAWP, based on the proposed mixed residential and commercial Site use. This RIR/RAWP provides an evaluation of a Track 1 cleanup and other Remedial Action alternatives, their associated costs, and the recommended and preferred remedy. The remedy described in this document is consistent with the procedures defined in DER-10 and complies with all applicable standards, criteria, and guidance. The remedy described in

this document also complies with all applicable Federal, State and local laws, regulations and requirements. The RI for this Site did not identify fish and wildlife resources. The NYSDEC and NYSDOH have reviewed this RIR/RAWP and determined that this Site does not pose a significant threat to human health and the environment. This determination was included in the RAWP Fact Sheet.

A formal Remedial Design document will not be necessary to prepare for this Site.

1.1 SITE LOCATION AND DESCRIPTION

The Site is located in the County and Borough of the Bronx, New York and is identified as Block 2353, Lot 1, on the New York City Bronx Tax Map. A United States Geological Survey (USGS) topographical quadrangle map (Figure 1) shows the Site location. The Site is situated on an approximately 0.68-acre area. Adjacent properties include a one-story warehouse and garage building to the north; a one-story warehouse and garage building to the south; residential apartment buildings to the east; and a two-story commercial building and parking lot to the west. The 0.68-acre property is fully described on the survey map and in Appendix A – Metes and Bounds. A global positioning system coordinate for the starting point is included.

The Site is a rectangular-shaped parcel of land that is currently improved with one single-story garage building with offices that has a footprint of approximately 31,200 square feet. The building has a small partial basement located along the Gerard Avenue side of the building. The building is currently unoccupied and is scheduled to be demolished in the near future to allow for future remedial activities to be performed.

1.2 CONTEMPLATED REDEVELOPMENT PLAN

The Remedial Action to be performed under the RIR/RAWP is intended to make the Site protective of human health and the environment consistent with the contemplated end use. The proposed redevelopment plan and end use is described here to provide the basis for this assessment. However, the Remedial Action contemplated under this RIR/RAWP may be implemented independent of the proposed redevelopment plan.

SB Gerard Avenue LLC is planning to redevelop the BCP Site for residential and commercial mixed-use. The planned redevelopment of the Site is the construction of a new residential and commercial mixed-use building with a full basement, which will be a largely unoccupied space. The basement will be used for vehicle parking with access to the utility and mechanical rooms. The proposed building will be approximately 204,476 square feet and will include 30% affordable housing residential rental units. In total, this proposed development will comprise a total of 197 multifamily rental units, approximately 5,000 square feet of retail commercial space, and an estimated 70 parking spaces. Refer to the BCP application for additional details.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The area surrounding the Site consists of residential buildings, retail businesses, and offices. There are industrial warehouse type buildings in the greater surrounding areas to the west and south of the Site. The table below provides details on surrounding property usage adjacent to the Site.

Surrounding Property Uses	
North	East 151st Street; One-story warehouse and garage building.
South	East 150th Street; One-story warehouse and garage building.
East	Walton Avenue; Residential apartment buildings.
West	Gerard Avenue; Two-story commercial building and parking lot.

The Site is zoned with a C2-4 overlay in a R7A District. Additional detail regarding the zoning around the Site is provided in Exhibit I of the BCP Application.

2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS

The Site was investigated in accordance with the requirements of NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010 (DER-10), as well as the Remedial Investigation Work Plan (RIWP), dated March 5, 2021, and approved by NYSDEC in their letter dated March 16, 2021. The investigation was conducted between June 28, 2021 and July 16, 2021; December 20, 2021; and December 21, 2021 and the results of the RI are included in this RIR/RAWP.

2.1 SUMMARY OF REMEDIAL INVESTIGATIONS PERFORMED

This section presents a detailed description of the RI activities performed to characterize the soil, groundwater and soil vapor at the Site. Detailed discussion of the RI findings and results are provided in subsequent sections of this RIR/RAWP. Investigation activities conducted before the Site was in the BCP are discussed in Section 2.2.2.

2.1.1 Borings and Wells

Beginning on June 28, 2021, a total of fourteen soil borings (RXSB-01 through RXSB-14), six groundwater wells, seven soil vapor, and four sub slab soil vapor points were installed at the locations shown on Figure 2. Roux retained the services of Trinity Environmental Corp. (Trinity) of Deer Park, New York to complete the installation of the soil borings, permanent monitoring wells, soil vapor points, and sub-slab soil vapor points. The permanent monitoring well locations at the Site were surveyed by Fehringer Surveying, P.C. of Seaford, New York on July 15, 2021.

Soil borings (RXSB-01 through RXSB-14) were advanced using a Geoprobe® mobile drilling unit to a maximum depth of 30 feet below land surface (ft bls). Each soil boring location was precleared to 5 ft bls using hand tools and Vactron soft dig equipment to confirm the absence of subsurface utilities. No subsurface utilities were encountered as part of this investigation.

During advancement of all soil borings, lithology was recorded by Roux field staff, and soil was visually inspected for evidence of contamination (e.g., staining and/or odor) and field screened

for volatile organic compounds (VOCs) using a photoionization detector (PID). Soil samples were collected continuously in five-foot increments from the land surface to a maximum depth of 30 ft bls. Soil boring logs are provided in Appendix B.

Six of the 14 soil borings were converted to permanent monitoring wells for collection of water-level elevation measurements and groundwater sampling. The monitoring wells were constructed of 2-inch diameter poly vinyl chloride (PVC) and consist of ten feet of 0.020-inch slotted well screen that intersects the water table and riser to land surface. Monitoring well RXMW-01 was installed to a depth of approximately 25 ft bls; RXMW-02, RXMW-03, and RXMW-06 were installed to a depth of approximately 27 ft bls; and RXMW-04 and RXMW-05 were installed to a depth of approximately 30 ft bls. Monitoring well screen zones were constructed to account for tidal fluctuations in water table elevation. Soil boring and monitoring well construction logs are provided in Appendix B and a summary of the monitoring well and soil vapor point construction details is included in Table 1. All monitoring well locations are shown on Figure 2.

Following monitoring well installation activities, each well was developed to ensure proper hydraulic connection with the aquifer and to reduce/eliminate turbidity of the water. Each monitoring well was developed using a submersible pump and a surge block, which was surged periodically until well yield was consistent and had turbidity below 50 Nephelometric Turbidity Units (NTUs).

Following well installation and development, all six monitoring wells were sampled on July 15, 2021 and July 16, 2021. To ensure groundwater samples collected were representative of the conditions in the surrounding aquifer, monitoring wells were purged prior to sample collection using low flow sampling procedures as outlined in the United States Environmental Protection Agency (USEPA) document entitled “Low Stress (Low Flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells” dated July 30, 1996 (revised September 19, 2017) as well as the NYSDEC Sampling, Analysis, and Assessment of PFAS Guidance of January 2021 (January 2021 PFAS Guidance).

Water-level measurements were recorded for all monitoring wells to further define groundwater flow patterns beneath the Site. The wells were gauged using an electronic oil/water

interface probe capable of detecting an LNAPL thickness of 0.01 feet (note that there was no LNAPL detected at the Site). All water-level depths were measured relative to a surveyed measuring point marked on each well casing. A summary of the water level measurements is included in Table 2.

Seven soil vapor points (RXSV-01 through RXSV-07) and four sub-slab soil vapor points (RXSS-01 through RXSS-04) were installed at the Site. The soil vapor and sub-slab vapor point installation and sampling procedures were completed in accordance with the NYSDOH October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York. The soil vapor and sub-slab vapor sample locations are shown on Figure 2, and results are presented on Figure 8. Roux collected soil vapor samples (RXSV-01 through RXSV-07) from depths varying from 5 to 16 ft bls. Each soil vapor point was installed using pre-fabricated, six-inch long stainless-steel screens, attached to Teflon-lined polyurethane tubing. The borehole was sealed off from ambient air using a bentonite seal at the surface. Roux collected sub-slab soil vapor samples (RXSS-01 through RXSS-04) from depths immediately underneath the floor slab. The sub-slab soil vapor points were installed using a stainless-steel pin secured with a silicone sleeve inside an airtight 5/8" diameter opening. Following installation of each soil vapor and sub-slab vapor point, the integrity of each sampling point seal was checked via a helium gas tracer test. This step was conducted as a quality assurance/quality control (QA/QC) measure to verify that the soil vapor sample was not compromised by inadvertent introduction of ambient air into the sample. Soil vapor was purged from the point using an air pump calibrated to approximately 0.2 liters per minute while the sampling point was covered at the surface with a small enclosure that is partially filled with helium. The soil vapor discharging from the air pump and the air within the enclosure was continuously monitored for helium during purging. Helium was not detected from the sample tubing at a concentration greater than 10% of the helium detected in the enriched area (i.e., within the bucket); therefore, the helium tracer test verified the integrity of the surface seal of each soil vapor point.

Prior to sample collection, each soil vapor point was purged of approximately three volumes of soil vapor using the air pump. The samples were collected using batch certified vacuum canisters equipped with laboratory-supplied, eight-hour regulators.

2.1.2 Samples Collected, Laboratory Analyses, Quality Assurance/Quality Control Sampling and Data Usability Summary Report

A total of 53 discrete soil samples (excluding QA/QC samples) were collected and submitted for laboratory analysis for the following parameters:

- TCL/Part 375 VOCs + 10 highest concentration tentatively identified compound (TIC) List via United States Environmental Protection Agency (USEPA) Method 8260D;
- TCL/Part 375 Base neutral acids (BNA)/Semivolatile organic compounds (SVOCs), including 1,4-Dioxane + 20 highest concentration TIC List via USEPA Method 8270E;
- TCL/Part 375 Pesticides via USEPA Method 8081B;
- TCL/Part 375 Herbicides via USEPA Method 8151A;
- TCL/Part 375 Polychlorinated Biphenyls (PCBs) via USEPA Method 8082A;
- TAL/Part 375 Metals via USEPA Method 6020B including mercury using USEPA Method 7471B;
- Hexavalent chromium and trivalent chromium using USEPA method 7196A;
- Total Cyanide via USEPA Method 9012B; and
- Emerging Contaminants (ECs) List including 1,4-Dioxane via USEPA Method 8270E and the 21 Per- and Polyfluoroalkyl Substances (PFAS) via USEPA Method 537 (modified).

A total of 6 groundwater samples (excluding QA/QC samples) were collected and submitted for laboratory analysis for the following parameters:

- TCL/Part 375 VOCs + 10 highest concentration TIC List via United States Environmental Protection Agency (USEPA) Method 8260D;
- TCL/Part 375 BNA/SVOCs, including 1,4-Dioxane + 20 highest concentration TIC List via USEPA Method 8270E;
- TCL/Part 375 Pesticides via USEPA Method 8081B;
- TCL/Part 375 Herbicides via USEPA Method 8151A;
- TCL/Part 375 Polychlorinated Biphenyls (PCBs) via USEPA Method 8082A;
- TAL/Part 375 Metals (total and dissolved) via USEPA Method 6020B including mercury using USEPA Method 7471B;
- Hexavalent chromium and trivalent chromium using USEPA method 7196A;

- Total Cyanide via USEPA Method 9012B; and
- Emerging Contaminants (ECs) List including 1,4-Dioxane via USEPA Method 8270E SIM and the 21 Per- and Polyfluoroalkyl Substances (PFAS) via USEPA Method 537 (modified).

A total of seven soil vapor samples and four sub-slab soil vapor samples (excluding QA/QC samples) were collected and submitted for laboratory analysis for the following parameter:

- VOCs via USEPA Method TO-15.

All samples collected during the RI were transported under chain of custody procedures to Eurofins TestAmerica (Eurofins) located in Edison, New Jersey, an Environmental Laboratory Approval Program (ELAP)-Certified laboratory.

Quality Assurance/Quality Control sampling during the RI included collection of one duplicate, one field blank and one matrix spike/matrix spike duplicate (MS/MSD) sample per 20 field samples and one trip blank per cooler for soil and groundwater. One equipment blank and one field blank were collected per day when sampling for PFAS, as per the Site-Specific QAPP.

The laboratory reported the results for RI data in Analytical Services Protocol (ASP) Category B deliverable packages. An electronic data deliverable (EDD) in the required NYSDEC format was provided by the laboratory. Analytical data packages are presented in Appendix E. The Data Usability Summary Reports (DUSRs) were prepared by an independent data validator in accordance with Appendix 2B of DER-10 and is provided in Appendix F.

A summary of the sample designation, analytes, and matrices for all samples collected for laboratory analysis is included in Table 3.

2.1.3 Surveying Activities

Fehringer Surveying, P.C. completed the survey of all permanent monitoring well locations on July 15, 2021. Location coordinates were provided in NY State Plan Coordinate System NAD 83 (LI Zone) and elevations were provided in North American Vertical Datum 1988 (NAVD 88).

2.1.4 Significant Threat

The NYSDEC and NYSDOH have reviewed this RIR/RAWP and determined that this Site does not pose a significant threat to human health and the environment. This determination was included in the RAWP Fact Sheet.

2.2 SITE HISTORY

2.2.1 Past Uses and Ownership

Roux reviewed the following information sources to determine historic uses of the Site, which were contained in the GEI September 2018 Phase I ESA:

- Historic Aerial photographs dated between 2007 and 2014;
- Historical Sanborn fire insurance maps dated 1908, 1935, 1946, 1951, 1981, and 1996; and
- Property tax files and zoning records.

According to the sources listed above, the Site was first developed by 1950 as a vehicle maintenance and storage facility for the United States Postal Office. By 2001 through 2007, the building was utilized for automotive service, vehicle repair, and parking. After 2007, the Site was occupied by a construction company for office use and storage. The surrounding area was historically developed with residential, industrial, and commercial properties.

A detailed summary of past site ownership is provided in the BCP Application submitted to NYSDEC.

2.2.2 Environmental Conditions/Results of Previous Environmental Investigations

This section provides an overview of previous environmental-related activities completed at the Site, based on a review of readily available information and the following environmental reports (previously provided to NYSDEC in the RIWP). The data tables generated by GEI are also provided in the RIWP. The following environmental reports were available for review and are summarized below:

- Phase I ESA, prepared by EEA, Inc. (EEA) Sam Schwartz Engineering of New York, New York on behalf of EMMES Asset Management Company Ltd., LLC., dated January 2011;
- Phase I ESA, prepared by GEI on behalf of Hunton Andrews Kurth LLP, dated September 2018;
- Subsurface (Phase II) Investigation, prepared by GEI on behalf of Hunton Andrews Kurth LLP, dated September 2018; and
- Soil Testing/Waste Characterization Report, prepared by DPV Consultants (DPV), on behalf of Silverback Development, dated February 4, 2020.

The data from the previous environmental investigations is included for background information only. The scope performed as part of this RI and approved RIWP was a comprehensive, standalone RI, and does not rely on data generated as part of these previous investigations.

2.2.2.1 Underground Storage Tanks/NYSDEC Spill Incidents

The 2018 Phase I ESA prepared by GEI identified records of underground storage tanks (USTs) at the Site. The Site is listed in the NYSDEC Petroleum Bulk Storage (PBS) database under Facility Identification Numbers 2-333212 and 2-476021. Based on the information in the PBS database, nine 550-gallon gasoline USTs were installed in 1950 and closed and removed in 1993. One 5,000-gallon UST containing #2 fuel oil was installed in 1957 and replaced with a 2,500-gallon UST in 1993.

The Site is listed in the NY Spills database. The following spills were identified at the Site:

- NYSDEC spill number 9007668 was opened on October 13, 1990. The spill was caused by a tank test failure of a 5,000-gallon fuel oil tank. According to the NYSDEC comments, a 5,000-gallon fuel oil UST was removed and replaced with a 2,500-gallon UST in 1993. A subsurface investigation that was performed in 2000 showed no visual, olfactory, or PID Evidence of contamination/release. Soil analysis was non-detect for VOCs and PAHs were consistent with fill material (i.e., coal/asphalt). Groundwater was not encountered before bedrock which was at a depth of approximately 12-feet below ground surface. This spill was closed on May 11, 2001.
- NYSDEC spill number 9213223 was opened on February 27, 1993. The spill is related to gasoline found during the excavation of gasoline tanks. This spill incident indicates that nine 550-gallon gasoline USTs were removed in 1993. In addition, 22 tons of contaminated soil had also been reportedly excavated and removed. Subsurface

investigation indicated no visual or olfactory evidence of contamination. Soil analysis showed non-detect for VOCs and PAH levels were consistent with fill material. Groundwater analysis showed non-detect/trace PAHs and VOCs. The spill was closed on May 11, 2001.

- NYSDEC spill number 1205845 was opened on September 3, 2012. The spill occurred when it was reported that approximately two gallons of heating oil residual/staining was noted next to the fill port area on the east side of the building. The spill was closed on May 24, 2016.

2.2.2.2 EEA Phase I ESA

In January 2011, a Phase I ESA was completed by EEA for the Site, which identified the following Recognized Environmental Conditions (RECs) - gasoline tanks, fuel oil tanks, hydraulic lifts and floor drains. There was no mention in this report that the hydraulic lifts had been removed. However, based on EEA's review of the Toxics Targeting Database Report, EEA concluded that nine gasoline tanks, which had been installed in 1950, were removed in 1993, and subsequent soil sampling showed no evidence of significant contamination. However, the Phase I also states:

- At least nine gasoline tank vent lines were observed running up the length of the wall on the eastern side of the building.
- According to information obtained during the site inspection, an underground 2,500-gallon fuel oil tank is currently located inside the subject building, where a man-way cover and other associated access ports were evident during EEA's site inspection. Allegedly, a 5,000-gallon fuel oil tank was also removed and replaced in 1993 with this present 2,500-gallon fuel oil tank.

EEA also noted that there were two spill numbers associated with this Site:

- Closed Spill Incident Number 9007668 – This spill pertains to a tank test failure of a 3,000-gallon fuel oil tank that occurred on October 13, 1990. There is a note in the spill file that "groundwater" was impacted. *See* Exhibit M including spill file record. EEA notes that according to the NYSDEC spill file comments, a 5,000-gallon fuel oil underground storage tanks was removed and replaced with a 2,500-gallon underground storage tank (UST) in 1993 and that a subsurface investigation that was performed in 2000, which showed no visual, olfactory, or PID Evidence of contamination/release. Soil analysis was non-detect for Volatile Organic Compounds (VOCs) and Poly Aromatic Hydrocarbon (PAHs) were consistent with obvious fill material (i.e., coal/asphalt). Groundwater was not encountered before bedrock which was at a depth of approximately 12-feet below ground surface. This spill incident was closed on May 11, 2001. [NOTE: However, the spill file noted that groundwater was impacted and there was no evidence in this Phase I that groundwater was remediated.]

- Closed Spill Incident Number 9213223 – This spill incident is related to gasoline found during the excavation of gasoline tanks that occurred on February 27, 1993. This spill incident indicates that nine 550-gallon gasoline USTs were removed in 1993. Concurrently, 22 tons of contaminated soil had also been reportedly excavated and removed. Allegedly, the subsurface investigation showed no visual or olfactory evidence of contamination. Soil analysis showed non-detect for VOCs and PAH levels were consistent with obvious fill material. However, groundwater analysis showed non-detect/trace PAHs and VOCs. This spill incident was closed on May 11, 2001.

2.2.2.3 GEI Phase I ESA

In September 2018, a Phase I ESA was completed by GEI for the Site. The findings of the Phase I ESA, as noted by GEI, included the following onsite RECs:

- Historic Gasoline Storage Tanks – GEI's site visit of the subject property, a vacant former automotive garage and service/storage facility for U.S. Postal Service vehicles found evidence of an area within the building where underground gasoline storage tanks had been located. According to information obtained from the Toxics Targeting Database Report, the tanks had been removed in 1993 and that subsequent soil sampling showed no evidence of significant contamination. Relying on the information obtained from the Toxics Targeting Database Report, both EEA and GEI concluded that the nine tanks had been removed in 1993 and that subsequent soil sampling showed no evidence of significant contamination.

- Hydraulic Lift Units – Three large underground hydraulic lift units were observed within the subject building. One was on the north side of the building and the other two were on the eastern side of the building. No staining was observed near the hydraulic lifts.

- Fuel Oil Storage Tank – According to the Toxics Targeting Database Report, an underground 2,500-gallon fuel oil tank is currently buried on the project site. This tank is located inside the subject building. The man-way cover and other associated access ports were available for inspection and no staining was observed. Furthermore, reportedly, a 5,000-gallon fuel oil tank was removed and replaced in 1993 with the present 2,500-gallon fuel oil tank. In 2000, a subsurface investigation was performed, and subsequent soil sampling showed no evidence of significant contamination.

- E-Designation – As part of a zoning change or action, the NYC Department of City Planning and City Council has labeled the project site as part of an E-Designated area of New York City. An E-Designation is a NYC zoning map designation that indicates the presence of an environmental requirement pertaining to potential Hazardous Material Contamination, Window/Wall Noise Attenuation, or Air Quality impacts on a particular tax lot. These environmental requirements are administrated by the NYCOER.

2.2.2.4 GEI Subsurface (Phase II) Investigation

In September 2018, a Subsurface (Phase II) Investigation was completed by GEI to investigate the RECs identified in the Phase I ESA. The Phase II ESA scope of work included:

- A limited ground penetrating radar (GPR) survey;
- The advancement of eight (8) soil borings (SB-1 through SB-8) and collection of fifteen (15) soil samples from various depths;
- The advancement of two (2) soil probes [SB-2 (GW) and SB-5 (GW)] for the collection of grab groundwater samples; and
- The installation of temporary implants beneath the building floor slab for the collection of four (4) sub-slab soil vapor samples (SV-1 through SV-4).

2.2.2.4.1 GEI Limited Geophysical Survey

During the 2018 GEI Phase II Investigation, the limited geophysical survey did not identify any anomalies consistent with the presence of the 550-gallon gasoline USTs in the southwestern portion of the Site; however, the abandoned 2,500-gallon UST appears to still be present at the Site. There are also still nine vent pipes still in place therefore, remnants of the UST tank farm are still present.

2.2.2.4.2 GEI Phase II Soil Conditions

In 2018, GEI performed a Phase II ESA at the Site that included the advancement of 8 soil borings to the maximum depth of 25 ft bls using a Geoprobe® direct-push rig. During completion of soil borings, lithology was recorded, and the soil was screened in the field for the presence of volatile organic vapors using a photoionization detector (PID) and/or for any visual or olfactory evidence of contamination.

Two soil samples were collected from soil borings SB-1 to SB-2 and SB-4 to SB-8. Deep samples from soil borings SB-2, SB-4, and SB-5 were collected above the observed groundwater table. One shallow soil sample was collected from the top 2 feet in SB-3. Refusal was encountered in SB-1, SB-3, SB-7, and SB-8. The soil samples were analyzed for VOCs, SVOCs, PCBs, pesticides and TAL metals.

VOCs: Concentrations of one VOC was detected in soil above Unrestricted Use Soil Cleanup Objectives (SCOs). Acetone was detected above Unrestricted Use SCOs in samples SB-4 (17-19'), SB-5 (10-12'), SB-6 (0-2'), SB-6 (10-12'), SB-7(10-12') at concentrations of ranging from 0.074 milligrams per kilogram (mg/kg) to 0.17 mg/kg.

SVOCs: Analytical data for SVOCs indicated detections above the Unrestricted Use SCOs and above Restricted Residential SCOs for seven SVOCs.

SVOC Commercial Soil Cleanup Objectives (Commercial SCO) exceedances are summarized below:

- Benzo(a)anthracene was detected at concentrations exceeding the Commercial SCO (5.6 mg/kg) in 1 sample at a depth of 0-2 feet bls.
- Benzo(a)pyrene was detected at concentrations exceeding the Commercial SCO (1 mg/kg) in 5 samples at four locations at depths ranging from 0-2 ft bls to 10-12 ft bls.
- Dibenzo(a,h)anthracene was detected at concentrations exceeding the Commercial SCO (.56 mg/kg) in 1 sample at a depth of 0-2 feet bls.

SVOC Restricted Residential SCO exceedances are summarized below:

- Benzo(a)anthracene was detected at concentrations exceeding the Restricted Residential SCO (1 mg/kg) in four samples at four locations at depths ranging from 0-2 ft bls to 10-12 ft bls.
- Benzo(b)fluoranthene was detected at concentrations exceeding the Restricted Residential SCO (1 mg/kg) in two samples at two locations at depths of 0-2 ft bls.
- Benzo(k)fluoranthene was detected at a concentration exceeding the Restricted Residential SCO (3.9 mg/kg) in one sample at a depth of 0-2 ft bls.
- Chrysene was detected at a concentration exceeding the Restricted Residential SCO (3.9 mg/kg) in one sample at a depth of 0-2 ft bls.
- Indeno(1,2,3-cd)pyrene was detected at concentrations exceeding the Restricted Residential SCO (0.5 mg/kg) in five samples at four locations at depths ranging from 0-2 ft bls to 10-12 ft bls.

Metals: Metals were detected at concentrations above Unrestricted Use SCOs in fourteen of the samples. Metals were detected at concentrations in exceedance of Restricted Residential SCOs in eight of the fifteen samples of the six soil borings. Exceedances of Commercial SCOs were detected

in five of the fifteen samples of four soil borings. Analytical data for metals indicated detections above the Restricted Residential SCOs for three metals.

Metal CSO exceedances are summarized below:

- Barium was detected at concentrations exceeding the Commercial SCO (400 mg/kg) in five samples at depths ranging from 0-2, 10-12, and 21-23 ft bls.

Metal Restricted Residential SCO exceedances are summarized below:

- Cadmium was detected at concentrations exceeding the Restricted Residential SCO (2.5 mg/kg) in one sample at a depth of 17-19 ft bls.
- Mercury was detected at concentrations exceeding the Restricted Residential SCO (0.81 mg/kg) in three shallow samples at depths of 0-2 ft bls.

Pesticides and Herbicides: Pesticides and herbicides were detected at concentrations above Unrestricted Use SCOs in SB-1 (0-2'), SB-2 (0-2'), SB-2 (21-23'), SB-6 (0-6'), SB-7 (0-2'), and SB-8 (0-2') including 4,4' – DDE and 4,4' – DDT. There were no detections above Restricted Residential SCOs.

PCBs: PCBs were detected above Unrestricted Use SCOs in SB-7 (0-2') and SB-8 (0-2') and exceeded Commercial SCOs in SB-3 (0-2') and SB-4 (0-2').

2.2.2.4.3 GEI Phase II Groundwater Conditions

A total of two groundwater samples were collected from two temporary wells for laboratory analysis during the GEI Phase II ESA. These two wells were on the north side of the property far from either of the tank locations. Groundwater samples were analyzed for VOCs and SVOCs. This data was compared to the NYSDEC Part 703.5 Class GA Ambient Standards and Guidance Values (AWQSGVs).

VOCs: VOCs were each detected at concentrations above their respective AWQSGVs in two of the samples collected. Chloroform was detected two groundwater samples (SB-2 and SB-5) at concentrations of 10 micrograms per liter (µg/L and 16 µg/L, respectively, which exceeded its AWQSGV (7 µg/L). Seven compounds (including 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Isopropylbenzene, n-Butylbenzene, n-Propylbenzene, p-Isopropyltoluene, and sec-Butylbenzene) were detected above the AWQSGVs in one groundwater sample (SB-2).

SVOCs: Naphthalene was detected above its AWQSGV in one groundwater sample (SB-2) at a concentration of 19.6 µg/L which is above its AWQSGV (10 µg/L).

2.2.2.4.4 GEI Phase II Soil Vapor Conditions

Four soil vapor probes SV-1 through SV-4 were installed to allow for the collection of soil vapor samples. The four samples were installed six inches below the existing concrete slab (sub-slab) inside the building at the Site.

Soil vapor results were compared to the compounds listed in Table 3.1 Air Guidance Values derived by the NYSDOH in the NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006 (Final Guidance) and revised May 2017. There are seven compounds included in the NYSDOH Final Guidance; three of these compounds were detected in one or more soil vapor samples, including 1,1,1-Trichloroethane, Methylene Chloride, and Tetrachloroethene (PCE).

Of these three compounds, PCE was detected in SV-2 at a concentration of 460 micrograms per cubic meter (µg/m3) that would potentially require further action based on the NYSDOH Decision Matrix for the compounds. Additionally, the soil vapor samples showed elevated levels of petroleum-related VOCs. Total concentrations of petroleum-related VOCs (BTEX) ranged from 72.3 to 193 µg/m3. Total Xylenes were the highest detected BTEX compound with a maximum concentration of 101 µg/m3 in soil vapor sample SV-3.

2.2.2.5 DPV Soil Testing/Waste Characterization

A soil testing/waste characterization program for Site development was performed at the Site in December 2019 by DPV. Based on the letter report, the soil testing/waste characterization scope of work included the collection of (25) grab samples from (13) thirteen excavation pits at various depths ranging from 0 to 30’ bls. The samples were analyzed for TAL Metals, TCL VOCs and SVOCs plus thirty non-targeted organic compounds (+ 30), pesticides, herbicides, and PCBs.

VOCs: Concentrations of one VOC was detected in soil above Unrestricted Use SCOs. Acetone was detected above Unrestricted Use SCOs in samples SB-11 (10-11') and SB-12 (12-13') at concentrations of ranging from 0.06 mg/kg to 0.086 mg/kg.

SVOCs: Analytical data for SVOCs indicated detections above Restricted Residential SCOs and Commercial SCOs, which are all polycyclic aromatic hydrocarbons (PAHs) and are commonly associated with historic fill.

SVOC CSO exceedances are summarized below:

- Benzo(a)anthracene was detected at concentrations exceeding the Commercial SCO (5.6 mg/kg) in 1 sample at a depth of 12-13 feet bls.
- Benzo(a)pyrene was detected at concentrations exceeding the Commercial SCO (1 mg/kg) in 3 samples at three locations at depths ranging from 9-10 ft bls to 15-16 ft bls.
- Benzo(b)fluoranthene was detected at concentrations exceeding the Commercial SCO (5.6 mg/kg) in 1 sample at a depth of 12-13 feet bls.
- Dibenzo(a,h)anthracene was detected at concentrations exceeding the Commercial SCO (.56 mg/kg) in 1 sample at a depth of 12-13 feet bls.
- Indeno(1,2,3-cd)pyrene was detected at concentrations exceeding the Commercial SCO (5.6 mg/kg) in 1 sample at a depth of 12-13 feet bls.

SVOC Restricted Residential SCOs exceedances are summarized below:

- Benzo(a)anthracene was detected at concentrations exceeding the Restricted Residential SCO (1 mg/kg) in 2 samples at three locations at depths ranging from 9-10 ft bls to 15-16 ft bls.
- Benzo(b)fluoranthene was detected at concentrations exceeding the Restricted Residential SCO (1 mg/kg) in two samples at two locations at depths ranging from 9-10 ft bls to 15-16 ft bls.
- Benzo(k)fluoranthene was detected at a concentration exceeding the Restricted Residential SCO (3.9 mg/kg) in one sample at a depth of 12-13 ft bls.
- Chrysene was detected at a concentration exceeding the Restricted Residential SCO (3.9 mg/kg) in one sample at a depth of 12-13 ft bls.
- Dibenzo(a,h)anthracene was detected at a concentration exceeding the Restricted Residential SCO (3.3 mg/kg) in two samples at two locations at depths ranging from 9-10 ft bls to 15-16 ft bls.

- Indeno(1,2,3-cd)pyrene was detected at concentrations exceeding the Restricted Residential SCO (0.5 mg/kg) in three samples at three locations at depths ranging from 3-4 ft bls to 15-16 ft bls.

Metals: Metals were detected at concentrations above Unrestricted Use SCOs in twelve of the samples. Metals were detected at concentrations in exceedance of Restricted Residential SCOs in five samples from four soil borings. Exceedances of Commercial SCOs were detected in three samples from three soil borings. Analytical data for metals indicated detections above the Restricted Residential SCOs for three metals.

Metal CSO exceedances are summarized below:

- Copper was detected at concentrations exceeding the CSO (270 mg/kg) in three samples at three locations at depths of 3-4 ft bls, 9-10 ft bls, and 10-11 ft bls.

Metal Restricted Residential SCO exceedances are summarized below:

- Lead was detected at concentrations exceeding the Restricted Residential SCO (400 mg/kg) in three samples at two locations at depths of 3-4 ft bls to 14-15 ft bls.
- Mercury was detected at concentrations exceeding the Restricted Residential SCO (0.81 mg/kg) in two samples at two locations at depths of 3-4 ft bls to 12-13' ft bls.

Pesticides and Herbicides: Pesticides and herbicides were detected at concentrations above Unrestricted Use SCOs in SB-10 (4-5') and SB-12 (14-15') including 4,4' – DDD, 4,4' – DDE and 4,4' – DDT. There were no detections above Restricted Residential SCOs.

PCBs: No PCBs were detected above Unrestricted Use SCOs.

2.3 GEOLOGICAL CONDITIONS

Based on the environmental and geotechnical soil borings completed, the Site consists of historic fill material (brown to dark brown fine to coarse sand with varying amounts of silt, gravel, cobble, brick, slag, and concrete) ranging in thickness of up to 7 to 14 feet throughout most of the Site, and deeper in the southern portion of the Site. This fill layer was underlain by native soil consisting of brown to reddish brown fine to medium sand with varying amounts of course sand, silt, gravel, and cobble. Refusal was encountered at depths ranging from 9 to 30 feet throughout the Site.

The depth to groundwater in the monitoring wells was between approximately 21 and 24 feet measured from top of casing (ft toc). Water-level measurements were collected on July 15, 2021 and July 16, 2021 as summarized in Table 2. Based on this data, groundwater beneath the Site flows to the north-northwest toward the Harlem River. The hydraulic gradient calculated between upgradient monitoring well RXMW-05 and downgradient monitoring well RXMW-02 was 0.0105 feet per foot (ft/ft) in July 2021. A groundwater flow map is shown in Figure 3.

2.4 CONTAMINATION CONDITIONS

2.4.1 Conceptual Model of Site Contamination

This section describes the Conceptual Site Model (CSM) developed for this Site. The CSM is a tool used to evaluate and identify potential sources of contamination, target analytes, potential entry and mechanisms for transport in the subsurface environment and potentially into the Site structures, potential exposure routes, and the environmental media and locations most likely to have been impacted by the target analytes.

Potential Sources, Compounds of Concern, Transport Pathways, and Receptors

Based on information provided in the previously developed environmental investigations (described above in Section 2.2.2), by 1950, the Site was developed as a vehicle maintenance and storage facility for the United States Postal Office. By 2001 through 2007, the building was utilized for automotive service, vehicle repair, and parking. After 2007, the Site was occupied by a construction company for office use and storage.

Based on the historical investigation and the recent RI results, VOCs, SVOCs, PCBs, pesticides, and metals were identified in soil in excess of the Unrestricted Use Soil Cleanup Objectives (SCO) and the Protection of Groundwater SCOs and are considered to be the compounds of concern (COCs) for the Site. Additionally, there were VOC, metal, and PFAS compound exceedances in groundwater identified at the Site.

Historic operations at the Site suggest Site soils are impacted through widespread SVOCs, PCBs, pesticides, and metals related to urban fill materials across the Site. Some VOC exceedances (notably petroleum-related VOCs) were identified in both soil and groundwater in the northeastern

portion of the Site. Deep soil collected from this area had VOC exceedances above Protection of Groundwater SCOs. Groundwater collected from the same area also had similar VOC exceedances above AWQSGVs. Localized soil and groundwater impacts in the northwestern portion of the Site suggests a potential release of petroleum products from an abandoned 2,500-gallon UST, which appears to still be present at the Site. Deep soil impacts indicate that VOCs may have migrated from groundwater to soil in this area of the Site.

The presence of some metal contaminants identified in both soil and groundwater cannot be correlated to Historic Site operations and are likely naturally occurring in the environmental. In soil, these metal contaminants include nickel and chromium compounds, which are likely related to the presence of weathered rock in samples. The soil samples with elevated detections of nickel and chromium were located in close proximity to bedrock, based on most detections occurring from sample intervals near the respective soil boring's refusal depth. In groundwater, these metal contaminants include iron, magnesium, manganese, and sodium, which are commonly occurring natural groundwater contaminants in New York City.

As described in the following sections, the RI activities conducted by Roux (the subject of this report) were intended to provide a more comprehensive investigation of the entire Site. Therefore, most environmental media samples were analyzed for a full suite of parameters, including VOCs, SVOCs, metals, pesticides/herbicides, PCBs, and PFAS. In addition to the COCs described above, there were also detections of VOCs identified in soil vapor and sub-slab soil vapor, however the concentrations were relatively low and not indicative of an on-Site source.

Based on the COCs present and the media in which these contaminants were identified, the following potential transport mechanisms were identified for the Site:

- COCs may potentially remain sorbed to soil (soil impacts); and
- Leaching of COCs from a potential UST release to groundwater (groundwater impacts).
- The following potential exposure routes for COCs have been identified for the Site:
- Dermal contact and incidental ingestion of soil. Minimal risk since the entire site is currently covered.

- Dermal contact with groundwater also considered minimal risk as groundwater is approximately 21 to 24 feet below current Site grade and is not used for drinking water or irrigation purposes.

See the Qualitative Exposure Assessment Section 2.5 for further details.

2.4.2 Description of Areas of Concern

As summarized above, previous investigations performed at the Site have documented the existence of the several AOCs. This RIR/RAWP describes in detail the environmental investigation of soil, groundwater and soil vapor that was performed to evaluate the AOCs, delineate contamination, and the associated remedial design to address Site impacts.

AOCs are categorized by Site media based on the findings of previous investigations (EEA Phase I, GEI Phase I, DPV Soil Characterization). AOCs were determined by comparing parameters in soil to Unrestricted Use SCOs, Restricted Residential Use SCOs or the Protection of Groundwater SCOs and parameters in groundwater to AWQSGVs. Soil vapor data was evaluated based on the NYSDOH Guidance.

The following AOCs were previously identified in historic documents:

- Soil, groundwater and soil vapor contamination from former Site uses;
- Soil and groundwater contamination due to the presence of Site-wide urban fill;
- Hydraulic lifts identified in the Site reconnaissance from the Phase I ESA;
- Potential UST(s) as identified in the Historic Sanborn Maps and PBS Database

Based on the GEI Phase II ESA, the Site (soil, groundwater, and soil vapor) appeared to have been impacted by VOCs, SVOCs, metals, PCBs, and pesticides originating from prior Site operations and contaminated historic urban fill.

Based on the existing data for the Site, the following objectives were identified for the RIWP:

- Further delineate the nature and extent of potential impacts to soil from areas of concern (AOCs) described above;
- Further delineate the nature and extent of impacts to groundwater;
- Evaluate the soil vapor quality within the Site and potential for offsite migration; and
- Fill data gaps from prior investigations (e.g., obtain more data across the Site).

2.4.3 Identification of Standards, Criteria and Guidance

SCGs are promulgated requirements ("standards" and "criteria") and non-promulgated guidance ("guidance") that govern activities that may affect the environment and are used by the NYSDEC at various stages in the investigation and remediation of a site. SCGs incorporate both the concept of "applicable or relevant and appropriate requirements" (ARARs) and the "to be considered" (TBCs) category of non-enforceable criteria or guidance, consistent with USEPA remediation programs. The following table provides a list of SCGs potentially applicable to the Site. Key SCGs are discussed in greater detail below.

Citation	Title	Regulatory Agency
General		
6 NYCRR Part 375	Environmental Remediation Programs	NYSDEC
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response	US Department of Labor, OSHA
29 CFR 1926	Safety and Health Regulations for Construction	US Department of Labor, OSHA
Appendix 1B, DER-10	NYSDEC Fugitive Dust and Particulate Monitoring Program	NYSDEC
No Cite	Analytical Services Protocol	NYSDEC
DER-10	Technical Guidance for Site Investigation and Remediation	NYSDEC
Soil		
6 NYCRR Part 375	Environmental Remediation Programs	NYSDEC
CP-51	Soil Cleanup Guidance	NYSDEC
Groundwater		
6 NYCRR Part 700-705	Surface Water and Ground Water Classification Standards	NYSDEC
TOGS 1.1.1	Ambient Water Quality Standards and Guidance Values (AWQSGVs)	NYSDEC
TOGS 2.1.3	Primary and Principal Aquifer	NYSDEC
Air		
Air Guide No. 1	Guidelines for the control of toxic ambient air contaminants	NYSDEC

Citation	Title	Regulatory Agency
No Cite	Final - Guidance for Evaluating Soil Vapor Intrusion in the State of New York	NYSDOH
Solid Waste		
6 NYCRR 360	Solid Waste Management Facilities	NYSDEC
6 NYCRR 364	Waste Transporters	NYSDEC
Hazardous Waste		
6 NYCRR Part 371	Identification and Listing of Hazardous Wastes	NYSDEC
6 NYCRR 372	Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities	NYSDEC
6 NYCRR 376	Land Disposal Restrictions	NYSDEC
Site Management		
No Cite	Groundwater Monitoring Well Decommissioning Procedures	NYSDEC

Legend:

SCG:	Standards, Criteria and Guidelines
NYCRR:	New York Code of Rules and Regulations
NYSDEC:	New York State Department of Environmental Conservation
NYSDOH:	New York State Department of Health
OSHA:	Occupational Safety and Health Administration
TOGS:	Technical Operational Guidance Series

SCGs for Soil

SCGs for soil at BCP Sites are the numerical soil cleanup objectives presented in 6 NYCRR Section 375-6.8(a-b). The soil cleanup objectives are categorized into Track 1 unrestricted use criteria and Track 2 restricted use (residential, restricted-residential, commercial, or industrial) standards, as well as standards for protection of groundwater and ecological resources. The applicability of each category of soil cleanup objectives is determined based upon the current and reasonably anticipated future use of the Site, as well as cleanup tracks being evaluated.

The unrestricted criteria are applicable if the goal is to implement a Track 1 cleanup. The restricted residential criteria are applicable if the goal is a Track 2 restricted residential use cleanup. If neither Track 1 or 2 standards can be met on all of part of the Site, then a Track 4

remedy protective of the planned use will be implemented in conjunction with long term institutional and engineering controls.

SCGs for soil for the protection of groundwater for COCs also apply to the Site because source areas of contamination are impacting groundwater. The ecological criteria are not applicable because the Harlem River is 1,000 feet to the west of this Site, and this river is in a highly urbanized location. Nevertheless, the planned remedy will be preventing any off-site migration of contamination.

SCGs for Groundwater

The NYSDEC AWQSGVs are applicable for groundwater at the Site.

2.4.4 Soil/Fill Contamination

The following subsections summarize the soil quality based on laboratory analytical data that was generated during this RI.

The soil laboratory analytical results were compared to NYSDEC Part 375 Unrestricted Use SCOs, Part 375 Protection of Groundwater SCOs, and Part 375 Restricted Residential SCOs. Laboratory analytical data for soil are summarized on Tables 4 through 9; sample locations with exceedances of the Unrestricted Use SCOs are shown on Figure 5 and exceedances of the Protection of Groundwater and/or Restricted Residential SCOs are shown on Figure 6.

2.4.4.1 Volatile Organic Compounds in Soil

Table 4 presents a summary of the VOC analytical data for soil samples collected during the RI. As part of the RI, 53 discrete soil samples were collected for VOC analysis, in addition to QA/QC samples. As shown, there were eight VOCs detected above the Protection of Groundwater SCOs, including one VOC detected above the Restricted Residential SCOs. Laboratory analytical data for the soil exceedances for VOCs are summarized below:

- 1,2,4-trimethylbenzene was detected at a concentration exceeding its Restricted Residential SCO (52 mg/kg) in one sample at one location (RXSB-06/23-25). The compound was detected at a concentration exceeding its Protection of Groundwater SCO (3.6 mg/kg) in two samples at two locations (RXSB-05/0-2, RXSB-06/23-25).

- Acetone was detected at a concentration exceeding its Protection of Groundwater SCO (0.05 mg/kg) in one soil sample, RXSB-11/0-2 duplicate (0.051 mg/kg). Acetone is commonly used in laboratories and thus may be introduced into a sample from laboratory cross-contamination, not from the Site.
- 1,3,5-trimethylbenzene (mesitylene) was detected at a concentration exceeding its Protection of Groundwater SCO (8.4 mg/kg) in two samples at two locations (RXSB-05/0-2, RXSB-06/23-25).
- Benzene was detected at a concentration exceeding its Protection of Groundwater SCO (0.06 mg/kg) in one sample, RXSB-05/0-2 (0.086 J mg/kg).
- Methylene chloride was detected at a concentration exceeding its Protection of Groundwater SCO (0.05 mg/kg) in one sample, RXSB-05/0-2 (0.055 J mg/kg).
- N-butylbenzene and n-propylbenzene were both detected at concentrations exceeding their Protection of Groundwater SCOs (12 mg/kg and 3.9 mg/kg, respectively) in one sample, RXSB-06/23-25 (22 mg/kg n-butylbenzene, 15 mg/kg n-propylbenzene).
- Xylenes (total) was detected at a concentration exceeding its Protection of Groundwater SCO (1.6 mg/kg) in one sample, RXSB-05/0-2 (3.6 J mg/kg).

It should be noted that out of the above VOCs, 1,2,4-trimethylbenzene 1,3,5-trimethylbenzene, n-butylbenzene, and n-propylbenzene were also detected above AWQSGVs in one groundwater sample, RXMW-04, collected during the RI.

2.4.4.2 Semivolatile Organic Compounds in Soil

Table 5 presents a summary of the SVOC analytical data for soil samples collected during the RI. A total of 53 discrete soil samples were collected for SVOC analysis (excluding QA/QC samples). As shown, there were four SVOCs (all PAHs) detected above the Protection of Groundwater SCOs and six SVOCs detected above the Restricted Residential SCOs. Laboratory analytical data for the soil exceedances for SVOCs are summarized below:

- Benzo[a]anthracene was detected at a concentration exceeding both its Protection of Groundwater SCO and Restricted Residential SCO (both 1 mg/kg) in six samples at five locations at depths ranging from 0-12 ft bls. The maximum concentration detected was 4.7 mg/kg, which was found in sample RXSB-01/0-2.
- Benzo[a]pyrene was detected at a concentration exceeding its Restricted Residential SCO (1 mg/kg) in eight samples at seven locations at depths ranging from 0-12 ft bls. The maximum concentration detected was 5.0 J mg/kg, which was found in sample RXSB-01/0-2.

- Benzo[b]fluoranthene was detected at a concentration exceeding its Restricted Residential SCO (1 mg/kg) in 11 samples at 8 locations at depths ranging from 0-12 ft bls. Five samples at four locations also had a concentration of benzo[b]fluoranthene that exceeded its Protection of Groundwater SCO (1.7 mg/kg). The maximum concentration detected was 5.6 mg/kg, which was found in sample RXSB-01/0-2.

- Benzo[k]fluoranthene was detected at a concentration exceeding its Protection of Groundwater SCO (1.7 mg/kg) in one sample at one location, RXSB-01/0-2 (2.4 mg/kg). Four samples at four locations also had a concentration of benzo[k]fluoranthene that only exceeded its Unrestricted Use SCO (0.8 mg/kg). The maximum concentration detected was 2.4 mg/kg, which was found in sample RXSB-01/0-2.

- Chrysene was detected at a concentration exceeding its Protection of Groundwater SCO (1 mg/kg) in five samples at five locations at depths ranging from 0-12 ft bls. One sample, RXSB-01/0-2, also had a concentration of chrysene that exceeded its Restricted Residential SCO (3.9 mg/kg), at the maximum concentration detected of 4.4 mg/kg.

- Dibenzo(a,h)anthracene was detected at a concentration exceeding its Restricted Residential SCO (0.33 mg/kg) in four samples at three locations at depths ranging from 0-12 ft bls. The maximum concentration detected was 0.68 mg/kg, which was found in sample RXSB-01/0-2.

- Indeno(1,2,3-cd)pyrene was detected at a concentration exceeding its Restricted Residential SCO (0.5 mg/kg) in 11 samples at 8 locations at depths ranging from 0-12 ft bls. The maximum concentration detected was 2.7 mg/kg, which was found in sample RXSB-01/0-2.

2.4.4.3 Metals in Soil

Table 6 presents a summary of the metals analytical data for soil samples collected during the RI. A total of 53 discrete soil samples were collected for metals analysis (excluding QA/QC samples). As shown, there were 10 metals detected above Unrestricted Use SCOs, the Protection of Groundwater SCOs, and/or the Restricted Residential SCOs. Laboratory analytical data for the soil exceedances for metals are summarized below:

- Barium was detected at a concentration exceeding its Restricted Residential SCO (400 mg/kg) in three samples at three locations at depths ranging from 0-12 ft bls. The maximum detection of barium was 762 mg/kg, found in sample RXSB-10/4-6. Three samples at three locations also had a concentration of barium that only exceeded its Unrestricted Use SCO (350 mg/kg). The maximum concentration detected was 370 mg/kg, which was found in sample RXSB-12/0-2.

- Cadmium was detected at a concentration exceeding its Restricted Residential SCO (4.3 mg/kg) in two samples at two locations at depths ranging from 10-12 ft bls with a maximum concentration of 5.2 mg/kg in sample RXSB-10/10-12.

- Lead was detected at a concentration exceeding its Restricted Residential SCO and/or Protection of Groundwater SCO (400 mg/kg and 450 mg/kg, respectively) in seven samples from five locations at depths ranging from 0-12 ft bls. The maximum detection of lead was 1,110 mg/kg, found in sample RXSB-10/10-12. Twenty samples at fourteen locations also had a concentration of lead that exceeded its Unrestricted Use SCO (63 mg/kg). The maximum concentration detected was 370 mg/kg, which was found in sample RXSB-13/4-6.

- Mercury was detected at a concentration exceeding both its Protection of Groundwater SCO (0.73 mg/kg) and Restricted Residential SCO (0.81 mg/kg) in four samples at three locations at depths ranging from 0-12 ft bls. The highest concentration of mercury detected was 2 mg/kg in sample RXSB-02/4-6. Nineteen samples at twelve locations also had a concentration of mercury that only exceeded its Unrestricted Use SCO (0.18 mg/kg). The maximum concentration detected was 0.73 mg/kg, which was found in samples RXSB-04/10-12 and RXSB-10/10-12.

- Zinc was detected at a concentration exceeding its Protection of Groundwater SCO (2480 mg/kg) in one sample at one location, RXSB-10/10-12 (3010 mg/kg). Twenty-nine samples at fourteen locations also had a concentration of zinc that exceeded its Unrestricted Use SCO (109 mg/kg). The maximum concentration detected was 2330 mg/kg, which was found in sample RXSB-03/10-12.

- Trivalent chromium was detected at a concentration exceeding its Unrestricted Use SCO (30 mg/kg) in eleven samples at eight locations at depths ranging from 0-12 ft bls. The highest concentration of trivalent chromium detected was 79.3 mg/kg in sample RXSB-02/10-12.

- Hexavalent chromium was detected at a concentration exceeding its Unrestricted Use SCO (1 mg/kg) in two samples at two locations at depths ranging from 4-6 ft bls and 23-25 ft bls. The highest concentration of hexavalent chromium detected was 5.1 mg/kg in sample RXSB-06/23-25.

- Total chromium was detected at a concentration exceeding its Unrestricted Use SCO (30 mg/kg) in two samples at nine locations at depths ranging from 0-12 ft bls. The highest concentration of total chromium detected was 79.3 mg/kg in sample RXSB-02/10-12.

- Copper was detected at a concentration exceeding its Unrestricted Use SCO (50 mg/kg) in thirteen samples at eight locations at depths ranging from 0-12 ft bls. The highest concentration of copper detected was 134 mg/kg in sample RXSB-04/10-12.

- Nickel was detected at a concentration exceeding its Unrestricted Use SCO (30 mg/kg) in eight samples at seven locations at depths ranging from 0-12 ft bls. The highest concentration of nickel detected was 78 mg/kg in sample RXSB-13/0-2.

2.4.4.4 Polychlorinated Biphenyls in Soil

Table 7 presents a summary of the PCB soil analytical data. A total of 53 discrete soil samples were collected for PCB analysis (excluding QA/QC samples). Concentrations of PCBs exceeding Unrestricted Use SCO (0.1 mg/kg), Restricted Residential SCO (1 mg/kg), and/or Protection of Groundwater SCO (3.2 mg/kg) were detected in twelve samples at nine locations. Laboratory analytical data for the exceedances are summarized below:

- PCBs were detected at a concentration exceeding both its Protection of Groundwater SCO (3.2 mg/kg) and Restricted Residential SCO (1 mg/kg) in two samples at one location at depths ranging from 4-12 ft bls. The highest concentration of PCBs detected was 39 mg/kg in sample RXSB-04/4-6. PCBs were detected at a concentration exceeding its Restricted Residential SCO (1 mg/kg) in two samples at two locations at depths ranging from 0-2 ft bls. The highest concentration of PCBs detected was 1.3 mg/kg in sample RXSB-11/0-2. PCBs were detected at a concentration exceeding its Unrestricted Uses SCO (0.1 mg/kg) in eight samples at eight locations at depths ranging from 0-2 ft bls. The highest concentration of PCBs detected was 0.88 mg/kg in duplicate sample RXSB-11/0-2.

2.4.4.5 Pesticides and Herbicides in Soil

Table 8 presents a summary of the pesticide and herbicide soil analytical data from the RI. A total of 53 discrete soil samples were collected for pesticide and herbicide analysis (excluding QA/QC samples). Pesticides were detected at concentrations exceeding their Unrestricted Use SCOs in several samples, but no detections exceeded Restricted Residential SCOs or Protection of Groundwater SCOs. Laboratory analytical data for the Unrestricted Use SCO exceedances are summarized below:

- P,P'-DDE was detected at a concentration exceeding its Unrestricted Use SCO (0.0033 mg/kg) in four samples at three locations at depths ranging from 0-6 ft bls. The highest concentration detected was 0.014 mg/kg in sample RXSB-06/0-2.
- P,P'-DDT was detected at a concentration exceeding its Unrestricted Use SCO (0.0033 mg/kg) in six samples at five locations at depths ranging from 0-6 ft bls. The highest concentration detected was 0.06 mg/kg in sample RXSB-09/0-2.

2.4.4.6 Per-and Polyfluoroalkyl Substances in Soil

Table 9 presents a summary of the PFAS soil analytical data. A total of 53 discrete soil samples were collected for PFAS analysis (excluding QA/QC samples). All detections were below all applicable SCOs.

2.4.5 Groundwater Contamination

The following subsections summarize the groundwater quality based on laboratory analytical data that was generated during this RI. A total of six groundwater samples (excluding QA/QC samples) were collected from permanent monitoring wells during this RI. Groundwater samples were collected on July 15, 2021 and July 16, 2021. Laboratory analytical data for groundwater samples are summarized in Tables 10 through 15 and are compared to NYSDEC AWQSGVs for Class GA groundwater. Exceedances of the AWQSGVs are shown on Figure 7. Note that both unfiltered and field filtered groundwater samples were collected and submitted for metals analysis.

2.4.5.1 Volatile Organic Compounds in Groundwater

A summary of laboratory analytical data for VOCs in groundwater is presented in Table 10. VOC exceedances were identified in three groundwater samples (RXMW-04, RXMW-05, RXMW-06). A total of seven VOCs, including 1,2,4-trimethylbenzene (maximum concentration of 360 µg/L in RXMW-04); 1,3,5-trimethylbenzene (maximum concentration of 140 µg/L in RXMW-04); chloroform (maximum concentration of 7.5 µg/L in RXMW-05); isopropylbenzene (maximum concentration of 24 µg/L in well RXMW-04); n-butylbenzene (maximum concentration of 29 µg/L in RXMW-04); n-propylbenzene (maximum concentration of 55 µg/L in RXMW-04); and sec-butylbenzene (maximum concentration of 9.8 µg/L in RXMW-04) were found exceeding their AWQSGVs.

2.4.5.2 Semivolatile Organic Compounds in Groundwater

Table 11 presents a summary of SVOC analytical data in groundwater collected as part of this RI. SVOCs were not detected above AWQSGVs in this RI.

2.4.5.3 Metals in Groundwater

Laboratory analytical data for metals detected in groundwater samples are summarized in Table 12. Four metals were detected in unfiltered groundwater samples at concentrations above AWQSGVs, including iron (maximum detection of 682 µg/L found in RXMW-01); magnesium (maximum detection of 42,600 µg/L found in RXMW-03); manganese (maximum detection of 534 µg/L found in RXMW-04); and sodium (maximum detection of 222,000 µg/L found in RXMW-01). Magnesium, manganese, and sodium were also detected in filtered groundwater samples at concentrations exceeding AWQSGVs. Magnesium was detected at a maximum concentration of 41,100 µg/L in dissolved sample RXMW-03; manganese was detected at a maximum concentration of 488 µg/L in dissolved sample RXMW-04; and sodium was detected at a maximum concentration of 225,000 µg/L in dissolved sample RXMW-01. Note that these are all naturally occurring metals, commonly found in groundwater. Laboratory analysis for the field filtered and unfiltered samples yielded fairly consistent results.

2.4.5.4 Polychlorinated Biphenyls in Groundwater

Table 13 presents a summary of PCB analytical data in groundwater collected as part of this RI. As shown on Table 13, PCBs were not detected in any of the groundwater samples collected during this RI.

2.4.5.5 Pesticides and Herbicides in Groundwater

Table 14 presents a summary of pesticide analytical data in groundwater collected as part of this RI. As shown on Table 14, pesticides were not detected in any of the groundwater samples collected during this RI.

2.4.5.6 Emergent Contaminants in Groundwater

Table 15 presents a summary of PFAS analytical data and Table 11 presents a summary of 1,4-Dioxane analytical data in groundwater collected as part of this RI. 1,4-Dioxane was not detected in any of the groundwater samples. A total of 10 PFAS compounds were detected in groundwater. The NYSDEC maximum contaminant level (MCL) for Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS) is 10 nanograms per liter (ng/L). PFOA exceedances were

identified in all six of the groundwater samples (maximum concentration of 22.9 ng/L in RXMW-02). PFOS exceedances were identified in four of the groundwater samples (maximum concentration of 18.2 ng/L in RXMW-05). Although PFAS compounds were detected in all groundwater samples collected during the RI, there were no detections of PFAS compounds in soil exceeding Unrestricted Use screening levels provided in the NYSDEC's January 2021 PFAS Guidance Document. Based on this information, it appears PFAS detections in groundwater are attributed to an off-Site source or regional impacted groundwater.

2.4.6 Soil Vapor Contamination

Seven soil vapor samples (RXSV-01 through RXSV-07) and four sub-slab soil vapor samples (RXSS-01 through RXSS-04) were collected from locations beneath the existing warehouse building, as shown on Figure 2 and submitted for VOC analysis. The results of the soil vapor and sub-slab soil vapor samples are summarized on Table 16 and VOC detections are shown on Figure 8. In total, 41 VOC compounds were detected in the seven soil vapor samples and four sub-slab soil vapor samples collected as part of this RI.

There are currently no standards for soil vapor established by either NYSDEC or the NYSDOH. The NYSDOH has established guidance for evaluating soil vapor intrusion in which the results of soil vapor and sub-slab soil vapor samples are compared to corresponding indoor air quality results. The guidance is presented in Matrix A, Matrix B, and Matrix C from the NYSDOH Center for Environmental Health (CEH) Bureau of Environmental Exposure Investigation (BEEI) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006 (matrices were updated in May 2017). The matrices provide guidance relative to eight common VOC contaminants including, carbon tetrachloride, cis-1,2-dichloroethene, 1,1-dichloroethene, trichloroethene (TCE), tetrachloroethene (PCE), 1,1,1-trichloroethane, methylene chloride, and vinyl chloride.

<u>Matrix A Compounds: carbon tetrachloride, cis-1,2-dichloroethene, 1,1-dichloroethene, TCE</u>

- Carbon tetrachloride was detected in two sub-slab soil vapor samples (RXSS-01 and RXSS-02) at concentrations of 0.51 $\mu g/m^3$ and 0.46 $\mu g/m^3$, respectively.

- Cis-1,2-dichloroethene was detected in one soil vapor sample (RXSV-03) at a concentration of 0.64 µg/m^3.
- TCE was detected in one sub-slab soil vapor sample (RXSS-04) at a concentration of 0.23 D µg/m^3 and one soil vapor sample (RXSV-03) at a concentration of 47 µg/m^3.
- 1,1- Dichloroethene was not detected in any of the soil vapor or sub-slab soil vapor samples.

Matrix B Compounds: PCE, 1,1,1-trichloroethane, methylene chloride

- PCE was detected in three sub-slab soil vapor samples (RXSS-01, RXSS-03, and RXSS-04) ranging in concentrations from 3.6 D µg/m^3 to 7.8 µg/m^3 and all of the soil vapor samples (RXSV-01 through RXSV-07) ranging in concentrations from 11 µg/m^3 to 86 µg/m^3.
- 1,1,1-Trichloroethane was detected in three soil vapor samples (RXSV-02, RXSV-04, and RXSV-06) ranging in concentrations from 0.56 J µg/m^3 to 3.8 J µg/m^3, with the maximum detection in soil vapor sample RXSV-06.
- Methylene chloride was detected in one sub-slab soil vapor sample (RXSS-02) at a concentration of 4.4 µg/m^3 and one soil vapor sample (RXSV-07) at a concentration of 3.1 D µg/m^3.

Matrix C Compound: vinyl chloride

- Vinyl chloride was not detected in any of the soil vapor or sub-slab soil vapor samples.

2.5 ENVIRONMENTAL AND PUBLIC HEALTH ASSESSMENTS

2.5.1 Qualitative Human Health Exposure Assessment

As described in Appendix 3B of DER-10, "The overall purpose of the Qualitative Human Health Exposure Assessment (or the exposure assessment) is to evaluate and document how people might be exposed to site related contaminants, and to identify and characterize the potentially exposed population(s) now and under the reasonably anticipated future use of the site." The following section details the exposure assessment based on data collected during the RI.

2.5.1.1 Soil Exposure

As described above in Section 2.4.4, soil samples collected during the RI indicated the presence of VOCs, SVOCs, metals, PCBs, and pesticides at concentrations above the NYSDEC

Part 375 Unrestricted Use SCOs, and in some instances above the Restricted Residential SCOs, and Part 375 Protection of Groundwater SCOs. An individual could be exposed to these contaminants through direct contact with Site soil during ground intrusive work at the Site. Direct contact without the use of proper personal protective equipment (PPE) and personal hygiene measures could lead to dermal contact and incidental ingestion of these compounds. Since the Site is currently completely covered by the Site buildings and/or concrete and asphalt, potential contact with Site soil is restricted to slab demolition, remedial and construction contract workers at the Site performing ground intrusive activities. The general public is not currently exposed to direct contact with Site soil, which is currently covered by the historic industrial building. A community air monitoring program (CAMP) will be implemented during intrusive activities to minimize the potential for off-Site exposures from soil/dust leaving the Site.

The planned future use of the Site is residential and commercial mixed-use. The proposed remedy for the Site is a Track 1, which includes source removal of Site soil in exceedance of the NYSDEC Part 375 Unrestricted Use SCOs, as described in the RAWP portion of this document.

2.5.1.2 Groundwater Exposure

As described above in Section 2.4.5, groundwater samples collected during the RI indicated the presence of VOCs and metals that exceeded AWQSGVs and PFAS compounds that exceeded MCLs. Groundwater is not used for drinking or irrigation (the area is connected to the public water supply), therefore, there is no direct contact with or ingestion of groundwater by the general public (on-Site or off-Site). Individuals who perform groundwater sampling or remedial activities may come into contact with contaminated groundwater if proper PPE and personal hygiene measures are not used, which could lead to dermal contact and the potential for incidental ingestion of these compounds.

The planned future use of the Site is residential and commercial mixed use. The building will be serviced by the public water supply. The proposed remedy to address VOCs in the Site groundwater is described in the RAWP. Once the planned remediation is implemented, the potential for public exposure by direct contact with contaminated groundwater will be reduced or eliminated.

2.5.1.3 Soil Vapor Exposure

As described above in Section 2.4.6, soil vapor samples collected during the RI indicated the presence of VOCs in soil vapor at the Site. The future Site use will be residential and commercial mixed-use, and the proposed new building will be constructed with a robust vapor barrier system, which should eliminate the concern for possible vapor intrusion into the building.

The existence of the building over the entire Site footprint, where contaminants were detected in soil vapor samples, results in the potential for soil vapor intrusion to building occupants if present. The building is currently vacant. However, the proposed remedy will be designed to eliminate or mitigate this potential exposure on-Site impact. With regard to off-Site, RI data demonstrates that there is no vapor exposure pathway.

2.5.1.4 Exposure Assessment Summary

The following table summarizes the exposure assessment.

Environmental Media and Exposure Route	Human Exposure Assessment
Direct contact with subsurface soils (and incidental ingestion)	• Remedial workers can come into contact with soil if they perform ground intrusive work at the Site. • During remediation, remedial workers, trespassers, passersby, and utility workers could come into contact with contaminated soil contained in dust through inhalation, incidental ingestion, and dermal contact, however, these potential exposure scenarios will be controlled through implementation of the Health & Safety Plan (HASP), Soil Management Plan (SMP) and Community Air Monitoring Plan (CAMP) during remediation to avoid these exposure scenarios. • For off-site, there is currently no potential for exposure by direct contact with contaminated on-Site soils that were sampled during the RI. • Future exposure will be eliminated through addressing contaminated soil as described in the RAWP portion of this document.
Ingestion of groundwater	• Contaminated groundwater is not used for drinking water, as the Site is connected to the public water supply, therefore, there is no potential for human contact with groundwater.

Environmental Media and Exposure Route	Human Exposure Assessment
Direct contract with groundwater (and incidental ingestion)	• Remedial workers could come into contact with contaminated groundwater through dermal contact and incidental ingestion during groundwater remediation and sampling activities, however, these potential exposure scenarios will be controlled through implementation of the HASP, SMP, and CAMP during the remediation to avoid these exposure scenarios. • For off-Site, there is currently no potential for exposure by direct contact with contaminated on-Site groundwater that was sampled during the RI. Future exposure will be reduced or eliminated by addressing contaminated soil that is acting as a source of contamination to groundwater and addressing groundwater contamination as described in the RAWP portion of this document.
Inhalation of air (exposures related to soil vapor intrusion)	• Remedial workers, trespassers, and utility workers may be exposed to contaminated soil vapor inside the building or within open excavations, however, these potential exposure scenarios will be controlled through implementation of the HASP, SMP, and CAMP during the remediation to avoid these exposure scenarios. • For off-Site, there is currently no potential for exposure through soil vapor migration and intrusion with contaminated on-Site soil vapor that was sampled during the RI. • Future exposure and the potential for vapor intrusion will be mitigated since the current building is being demolished, sources of contamination under the current building will be remediated, and the new foundation will be constructed with a minimum of a sub-slab vapor barrier.

2.6 INTERIM REMEDIAL ACTION

An interim remedial measure (IRM) Work Plan dated January 19, 2022 was prepared to remove an existing in-ground hydraulic lift and install a 421a foundation element at the Site. The IRM Work Plan was approved by the NYSDEC in a letter dated February 18, 2022. Remedial activities related to the implementation of the IRM Work Plan were performed between April 4, 2022 and April 21, 2022.

2.7 REMEDIAL ACTION OBJECTIVES

Based on the results of the RI, the following Remedial Action Objectives (RAOs) have been identified for this Site.

2.7.1 Groundwater

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

2.7.2 Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota due to ingestion/direct contact with contaminated soil that would cause toxicity or bioaccumulation through the terrestrial food chain.

2.7.3 Soil Vapor

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

3.0 DESCRIPTION OF REMEDIAL ACTION PLAN

This section of the RIR/RAWP was prepared in accordance with regulations in 6 NYCRR Subpart 375 – 3.8(f), Subpart 375 – 1.8(f), and Section 4.3 of NYSDEC Guidance Document DER-10. As required, a minimum of two remedial alternatives (one being an unrestricted use scenario) are evaluated, as follows:

- One alternative (Remedial Alternative 1) that will achieve an unrestricted use remedy relative to on-Site soil based on the achievement of Track 1 soil cleanup objectives (SCOs) and dewatering with some subsequent *in-situ* groundwater treatment without the use of long-term Institutional Controls (ICs) or Engineering Controls (ECs) or with the use of a short-term institutional control if short-term (i.e. less than five years) groundwater monitoring is required; and
- One alternative (Remedial Alternative 2) assuming a partial Track 1 unrestricted use remedy relative to on-Site soil and a partial Track 2 restricted use (restricted residential) cleanup to achieve the Track 2 SCOs scenario for on-Site areas coupled with the use of long-term institutional controls (ICs) and ECs.

The following is a detailed description of the alternatives analysis and remedy selection process to address impacted media at the Site. Note that under either alternative, a supplemental soil vapor intrusion investigation will be completed prior to the completion of the remedy. Details of this supplemental soil vapor intrusion investigation will be provided to NYSDEC under separate cover, at a future time.

Remedial Alternative 1: Track 1 Unrestricted Use Cleanup (Figure 9):

- Site preparation activities including abatement of all asbestos containing material (ACM) associated with the exiting building structure to enable building demolition to occur, which in turn will enable the subsurface remediation to occur.
- Demolition of building structures to enable implementation of the subsurface Remedial Alternative 1 excavation.
- Demolition, decommissioning, and removal of existing infrastructure associated with the former Site usage that could have contributed to Site contamination (i.e., abandoned 2,500-gallon UST, existing truck/hydraulic lifts, floor drains and associated drainpipes, etc.).
- Excavation and removal of contaminated soil/fill exceeding Track 1 Unrestricted Use SCOs across the entire BCP Site. Soil/fill will be excavated to a minimum depth of 16

ft bls and deeper, if necessary, to meet Track 1 Unrestricted Use SCOs and to remove any soil acting as a source of groundwater contamination.

- Excavation, and removal of two soil hotspots where exceedances of Unrestricted Use SCOs were identified at 23 to 25 ft bls.
- Groundwater remediation consisting of the in-situ treatment of VOC-impacted groundwater by placing and mixing a chemical reagent directly into groundwater during hot spot excavations.
- Collection of post-remediation confirmation samples to confirm that the remedial objectives for soil and groundwater were met.
- Appropriate off-Site disposal of soil/fill and construction and demolition debris (C&D) in accordance with all federal, state, and local rules and regulations for handling, transport, and disposal.
- Dewatering (as required), in compliance with federal, state, and local laws and regulations. Extracted groundwater will be containerized, pre-treated on-Site, and discharged to the city sewer system under applicable permits from New York City Department of Environmental Protection (NYCDEP) and NYSDEC.
- Importation of clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) for use as backfill to establish redevelopment design grades, as necessary.
- Installation of a vapor barrier system (minimum thickness 20 mil) under the building foundation's slab and up the foundation walls to prevent soil vapor intrusion and any potential exposure to soil vapor from off-Site exposure pathways.
- Installation of onsite groundwater monitoring wells.
- If required, employment of a short-term Institutional Control in the form of an Environmental Easement to require compliance with a short-term Groundwater Monitoring Plan.

Remedial Alternative 2: Track 2 Restricted Residential Cleanup (Figure 10):

- Site preparation abatement of all ACM associated with the exiting building structure to enable building demolition to occur, which in turn will enable the subsurface remediation to occur.
- Demolition of building structures to enable implementation of the subsurface Remedial Alternative 2 excavation.
- Demolition, decommissioning, and removal of existing infrastructure associated with the former Site usage that could have contributed to Site contamination (i.e., abandoned 2,500-gallon UST, existing truck/hydraulic lifts, floor drains and associated drainpipes, etc.).

- Excavation and removal of soil/fill to 15 ft bls across the entire BCP Site.
- Collection of excavation bottom documentation samples to document the quality of soil remaining at depth. The results of documentation sampling will determine the cleanup Track achieved in each area of the Site.
- Appropriate off-Site disposal of soil/fill and construction and demolition debris (C&D) in accordance with all federal, state, and local rules and regulations for handling, transport, and disposal.
- Dewatering (as required), in compliance with federal, state, and local laws and regulations. Extracted groundwater will be containerized, pre-treated on-Site, and discharged to the city sewer system under applicable permits from New York City Department of Environmental Protection (NYCDEP) and/or NYSDEC.
- Installation of a vapor barrier system (minimum thickness 20 mil) under the building foundation's slab and up the foundation walls to prevent soil vapor intrusion and any potential exposure to soil vapor contaminants from off-Site exposure pathways.
- Importation of clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) for use as backfill to establish redevelopment design grades, as necessary. Clean fill requiring testing will meet the lower of the Restricted Residential and Protection of Groundwater Use SCOs.
- Preparation of a Site Management Plan (SMP) to establish long-term management requirements for any contaminated soil remaining at depth. The SMP will include a plan for groundwater and soil vapor monitoring.
- Imposition of an IC in the form of an Environmental Easement, for the portions of the Site that do not achieve Unrestricted Use SCOs. The Environmental Easement will impose the following:
    - requires the remedial party or Site owner to complete and submit a periodic certification of institutional and engineering controls to the NYSDEC in accordance with Part 375-1.8 (h)(3);
    - allows the continued use and development of the controlled property for restricted residential (or less restrictive uses) as defined by Part 375-1.8(g), subject to land use local zoning laws;
    - restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or Article 141 of the NYCDOH code (groundwater restriction applies to the entire Site); and
    - requires compliance with the Department-approved SMP.

3.1 EVALUATION OF REMEDIAL ALTERNATIVES

The goal of the remedy selection process under the BCP is to select a remedy that is protective of human health and the environment taking into consideration the current, intended, and reasonably anticipated future use of the property. Each remedial alternative is evaluated based on the factors listed below:

- Protection of human health and the environment;
- Compliance with standards, criteria, and guidelines (SCGs);
- Short-term effectiveness and impacts;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume of contaminated material;
- Implementability;
- Cost effectiveness;
- Community Acceptance; and
- Land use.

SCGs applicable to the Site are discussed in Section 2.4.3 of this RI/RAWP and are described briefly below.

- 6 NYCRR Part 375-6.8(a-b) Soil Cleanup Objectives: The unrestricted use, protection of groundwater and restricted residential use SCOs listed in the regulations were used to evaluate soils, delineate areas with impacts and specify cleanup objectives.
- New York State Groundwater Quality Standards – 6 NYCRR Part 703: The standards listed in the guidance were used to evaluate groundwater quality, delineate areas with impacts, and specify cleanup objectives.
- NYSDEC Ambient Water Quality Standards and Guidance Values – TOGS 1.1.1: The standards listed in the guidance were used to evaluate groundwater quality, delineate areas with impacts, specify cleanup objectives.
- NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation: May 2010: The proposed remedial alternatives were developed in accordance with the abovementioned document.
- NYSDEC CP-51 Soil Cleanup Guidance: The standards listed in the guidance were used to evaluate groundwater quality, delineate areas with impacts, and specify cleanup objectives.

- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York – October 2006, Updated May 2017: The screening values listed in the guidance were used to evaluate soil vapor quality and specify cleanup objectives.
- NYSDEC Fugitive Dust and Particulate Monitoring – Appendix 1B, DER-10: This guidance was used when preparing the Community Air Monitoring Plan (CAMP), which will be implemented during the remedial action.
- US Department of Labor Occupational Safety and Health Administration (OSHA) – Safety and Health Regulations for Construction: Compliance with these requirements is applicable during implementation of the remedial action.
- NYS Waste Transporter Permits – 6 NYCRR Part 364: These rules and regulations will apply during the implementation of the remedial action.
- NYS Solid Waste Management Requirements – 6 NYCRR Part 360 and Part 364: These rules and regulations will apply during the implementation of the remedial action.
- 6 NYCRR Part 371 – Identification and Listing of Hazardous Waste: These rules and regulations would be applicable if hazardous waste was encountered during remedial action.
- 6 NYCRR Part 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities: These rules and regulations would be applicable if hazardous waste was encountered during remedial action.

3.1.1 Overall Protection of Human Health and the Environment

This criterion is an evaluation of the ability of each alternative or the remedy to protect public health and the environment.

Remedial Alternative 1 (**Track 1)** - will be protective of human health and the environment by:

1. Eliminating the potential for ingestion, direct contact, or exposure to contaminants in soil and preventing inhalation of, or exposure to, contaminants volatilizing from soil by removing all soil/fill that exceeds the most stringent Unrestricted Use SCOs.
2. Eliminating the migration of contaminants to groundwater by excavating and removing soil/fill that is a source to groundwater contamination.
3. Eliminating the migration of contaminants in groundwater by reducing contaminants concentrations with a chemical reagent.
4. Preventing contact with, or inhalation of, volatiles emanating from contaminated groundwater by employing short-term ICs and significantly reducing the concentrations of groundwater contaminants within 5 years of remedial construction.

5. Mitigating impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at the Site by installing a vapor barrier (minimum 20 mil) under the building foundation's slab and up the foundation walls.

Remedial Alternative 2 (Track 2) - will be protective of human health and the environment by eliminating the potential for ingestion, direct contact, or exposure to contaminants and by preventing the migration of contaminants to groundwater through the following actions:

1. Eliminating the potential for ingestion, direct contact, or exposure to contaminants in soil and preventing inhalation of, or exposure to, contaminants volatilizing from soil by either:
2. Removing the majority of soil/fill that exceeds the lower of the Restricted-Residential and Protection of Groundwater SCOs; or
3. Employing long-term ICs and ECs.
4. Providing a bulk reduction of contaminant migration in groundwater by excavating and removing soil that is a source to groundwater contamination.
5. Preventing contact with, or inhalation of, volatiles emanating from contaminated groundwater by employing long-term ICs and ECs.
6. Mitigating impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at the Site by installing a vapor barrier (minimum 20 mil) under the building foundation's slab and up the foundation walls.

3.1.2 Standards, Criteria, and Guidance

The remedy must conform to officially promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance as appropriate.

Remedial Alternative 1 will achieve a Track 1 cleanup by removing all contaminated soils and will therefore result in a permanent remedy. Removal of soil exceeding Unrestricted Use SCOs, dewatering and subsequent *in-situ* groundwater remediation are expected to result in significant reductions of on-Site groundwater concentrations that will meet AWQSGVs or contain only residual contamination demonstrating there has been a bulk reduction in groundwater contamination to asymptotic conditions.

Remedial Alternative 2 will remove most, if not all, of on-Site soils exceeding the lower of the Restricted Residential and Protection of Groundwater SCOs to 15 ft bls. Removal of soil to

15 ft bls is expected to result in a significant reduction of on-Site groundwater concentrations over time.

3.1.3 Long-Term Effectiveness and Permanence

This criterion is an evaluation of the long-term effectiveness and permanence of an alternative or remedy after implementation.

Remedial Alternative 1 would achieve long-term effectiveness by providing a permanent cleanup of on-Site soil and groundwater contamination through removal of all contaminated soil/ fill material and soil acting as a source to groundwater contamination. The vapor barrier foundation system will be a permanent barrier against off-Site migration of contaminants contaminated by soil vapor. Therefore, incremental risk will be eliminated, ECs and ICs are not necessary (except for a restriction on the use of on-Site groundwater), and the remedy will continue to meet RAOs in the future, thus providing a permanent long-term remedy for the Site.

Remedial Alternative 2 would achieve long-term effectiveness by removing the majority of contaminated soil/fill material or by preventing exposure to contaminants remaining at depth through the implementation of an SMP and Environmental Easement in perpetuity. The SMP will ensure long-term effectiveness of all ECs and ICs by requiring periodic inspection and certification that these controls and restrictions continue to be in place and are functioning as intended.

3.1.4 Reduction in Toxicity, Mobility, or Volume of Contamination Through Treatment

This criterion is an evaluation of the ability of an alternative or remedy to reduce the toxicity, mobility, and volume of Site contamination. Preference should be given to remedies that permanently or significantly reduce the toxicity, mobility, or volume of the contamination at the Site. The ways to achieve this includes:

- removal and/or treatment;
- containment;
- elimination of exposure; and
- treatment of source at the point of exposure.

Remedial alternatives that use treatment or removal to eliminate contaminants at a site, reduce the total mass of toxic contaminants, cause irreversible reduction in contaminants mobility, or reduce of total volume of contaminated media are preferable.

Remedial Alternative 1 permanently eliminates the toxicity, mobility, and volume of contaminants within the Site by removing all contaminated soil/fill and providing treatment of groundwater contaminants to allow for unrestricted use of the Site.

Remedial Alternative 2 significantly reduces the toxicity, mobility, and volume of contaminants for majority of the Site removing contaminated soil/fill and eliminates the expose to contaminants on the remaining portions of the Site through the implementation of ICs and ECs where a Track 1 Unrestricted Use Cleanup is not achieved.

3.1.5 Short-Term Impacts and Effectiveness

This criterion is an evaluation of the potential short-term adverse environmental impacts and human exposures during the construction and/or implementation of an alternative or remedy.

Both **Remedial Alternative 1** and **Remedial Alternative 2** would employ appropriate measures to prevent short term impacts, including a CAMP and a Soil Management Plan (SoMP), during all on-Site soil disturbance activities and would effectively prevent the release of significant contaminants into the environment. Both alternatives provide short term effectiveness in protecting the surrounding community by decreasing the risk of contact with on-Site contaminants with ECs (i.e., dust suppression and traffic control).

Potential worker exposure to soil and groundwater during remediation activities will be mitigated through the required Occupational Safety and Health Administration (OSHA) HazWoper training and appropriate Health and Safety Plans (HASPs). Construction workers operating under appropriate management procedures and a HASP will be protected from on-Site contaminants (personal protective equipment would be worn consistent with the documented risks within the respective work zones). Other potential risks include material handling, electrical shock, general trip hazards, and noise. These potential impacts are addressed in the Site-specific HASP, CAMP, and the SoMP, which detail monitoring during the construction and describe ECs to be implemented as necessary (e.g., dust suppression and traffic control).

3.1.6 Implementability

This criterion is an evaluation of the technical and administrative feasibility of implementing an alternative or remedy.

The techniques, materials, and equipment to implement **Remedial Alternative 1** and **Remedial Alternative 2** are readily available and have been proven effective in remediating the contaminants associated with the Site. Standard materials, services, and well-established technologies will be implemented. There are no specific difficulties associated with either of the Alternatives proposed, which utilize standard construction methods.

3.1.7 Cost Effectiveness

This criterion is an evaluation of the overall cost effectiveness of an alternative or remedy. Cost estimates for each alternative are shown in Tables 17 and 18.

The total cost for **Remedial Alternative 1** is estimated at approximately $6,760,000. The total cost for **Remedial Alternative 2** is estimated at approximately $5,490,000.

The costs associated with Remedial Alternative 1 are higher than Remedial Alternative 2 due to the additional excavation and additional *in-situ* groundwater treatment, backfill materials, and off-Site transportation and disposal that will be required to achieve Track 1 Unrestricted Use SCOs.

3.1.8 Community Acceptance

This criterion is evaluated after the public review of the remedy selection process as part of the final NYSDEC and NYSDOH selection/approval of a remedy for a site.

1. Any public comment relative to these criteria will be considered by NYSDEC and NYSDOH after the close of the public comment period.
2. Documentation of the public comments received is to be consistent with the Citizen Participation Plan (CPP) identified for a remedial program in accordance with applicable NYSDEC policy.

While a full evaluation of this criterion cannot be made until after the public comment period is complete, the community is likely to favor Remedial Alternative 1 because it would entail a full cleanup to allow unrestricted use of the Site. The community would likely also be accepting

of Remedial Alternative 2 as it would achieve an unrestricted remedy on most of the Site and the restricted Track 2 areas would include ICs and ECs to prevent exposure to the public and environment.

3.1.9 Land Use

This criterion is an evaluation of the current, intended, and reasonably anticipated future use of the Site and its surroundings, as it relates to an alternative or remedy, when unrestricted levels would not be achieved.

This evaluation has considered reasonably anticipated future uses of the Site and takes into account:

- current use and historical and/or recent development patterns;
- applicable zoning laws and maps;
- NYS Department of State's Brownfield Opportunity Areas (BOA) pursuant to section 970-r of the general municipal law;
- applicable land use plans;
- proximity to real property currently used for residential use, and to commercial, industrial, agricultural, and/or recreational areas;
- environmental justice impacts, Federal or State land use designations;
- population growth patterns and projections;
- accessibility to existing infrastructure;
- proximity of the Site to important cultural resources and natural resources, potential vulnerability of groundwater to contamination that might emanate from the Site, proximity to flood plains, geography and geology; and
- current ICs applicable to the Site.

Remedial Alternative 1 would render the Site available for unrestricted use following remedial construction.

Remedial Alternative 2 is compatible with the planned future use of the new Site buildings as mixed-use commercial/ residential use based on implementation of long-term ICs and ECs that will be recorded and will run with the land so that future owners are aware that land use options are restricted as described in the Environmental Easement.

Improvements in the current condition of the Site achieved by both cleanup alternatives are also consistent with New York City's goals for cleanup of contaminated land, bringing such properties to productive reuse, and making such properties protective of natural and cultural resources.

3.2 SELECTION OF THE PREFERRED REMEDY

The Preferred Remedy for the Site is Remedial Alternative 1. This alterative was selected for implementation since it adequately meets each of the evaluation criteria. In summary, the Preferred Remedy for the Site:

- Is protective of public health and the environment;
- Complies with the most stringent Track 1 Unrestricted Use SCOs;
- Provides long term effectiveness and permanence through source removal of all soil exceeding the Track 1 Unrestricted Use SCOs;
- Addresses residual groundwater contamination;
- Reduces the toxicity, mobility, or volume of impacted material through source removal;
- Provides short-term effectiveness, including minimal impacts to workers or the surrounding neighborhood through the implementation of ECs during construction;
- Is readily implementable;
- Is compatible with land use; and
- Should be acceptable to the community.

The Preferred Remedy for the Site is consistent with the approach for Track 1 Unrestricted Use scenario as described in 6 NYCRR Part 375-3.8(e). If a Track 1 remedy for the Site cannot be achieved due to the presence of soil above Track 1 Unrestricted Use SCOs or long-term ECs, the Site will defer to a Track 2 contingency.

3.2.1 Zoning

As discussed in the BCP application, the Site is currently zoned as a residential district of R7A with a commercial overlay of C2-4 (see Exhibit I in the BCP application). R7A zoning districts permit medium-density apartment housing, and the C2-4 overlays permit commercial uses limited to one or two floors located below the residential use.

3.2.2 Applicable Comprehensive Community Master Plans or Land Use Plans

As depicted in the Land Use Map (Exhibit I of the BCP Application), the use of the Site as mixed residential and commercial use is consistent with the Vision 2020 NYC Comprehensive Waterfront Plan, which intends to increase mixed-use development and affordable housing in waterfront neighborhoods.

3.2.3 Surrounding Property Uses

As described in the BCP application, the Site is located in the Borough of Bronx, City of New York in a primarily urban neighborhood comprised of commercial and multi-family residential use parcels and limited light manufacturing use parcels. The historical and recent development patterns in the areas surrounding the Site have increasingly rezoned areas from nonresidential to mixed-use residential and commercial uses in neighborhoods on or near the waterfront, including the Bronx River. The Site is also located in an area that was recently rezoned to mixed-use in 2013. There are no agricultural areas in the vicinity of the Site. Surrounding land use is depicted on Exhibit I of the BCP application.

3.2.4 Citizen Participation

Citizen participation will be pursued throughout the remedial process in accordance with the BCP guide and the Citizen Participation Plan (CPP) for the Site.

3.2.5 Environmental Justice Concerns

As presented in the BCP application, and as established in DEC Commissioner Policy 29 on Environmental Justice (EJ) and Permitting (CP-29), potential EJ areas are U.S. Census block groups of 250 to 500 households each that, in the 2020 Census had populations that met or exceeded at least one of the following statistical thresholds:

- At least 51.1% of the population in an urban area reported themselves to be members of minority groups; or
- At least 33.8% of the population in a rural area reported themselves to be members of minority groups; or
- At least 23.59% of the population in an urban or rural area had household incomes below the federal poverty level.

Based on the 2020 Census data for the Bronx census tract number 63, the Site is located in a neighborhood that exceeds at least one of the above statistical thresholds and is therefore in a

potential environmental justice area (PEJA). However, this project will benefit this EJ community by providing some affordable housing and other commercial uses that will benefit the neighborhood and remove this blighted former industrial building.

3.2.6 Land Use Designations

There are no federal or state land use designations related to the Site.

3.2.7 Population Growth Patterns

The population in NYC is projected to continue to grow. Therefore, more affordable and market rate housing is required to accommodate this growth.

3.2.8 Accessibility to Existing Infrastructure

The Site's location in the Bronx is accessible to existing infrastructure, however, new infrastructure will be constructed during this project and old infrastructure may be removed.

3.2.9 Proximity to Cultural Resources

There are no cultural resources, including federal or state historic or heritage sites or Native American religious sites within ½ mile of the Site.

3.2.10 Proximity to Natural Resources

The Harlem River, a tidal estuary, is located approximately 0.21 miles west of the Site. Removal of contaminated soil/fill and in turn, any source to groundwater contamination, will eliminate any potential impacts to the Harlem River. Natural resources will not be endangered by the preferred remedy for the Site.

3.2.11 Off-Site Groundwater Impacts

There are no known wellhead protection areas or specifically designated groundwater recharge areas in the vicinity of the Site. Based on information generated during the RI, contamination migrating from the Site would likely flow north-northwest towards the Harlem

River. The proposed remedy will reduce the potential of groundwater contaminant migration from occurring.

3.2.12 Proximity to Floodplains

The Site is not located within the 500-year flood zone based upon data from Federal Emergency Management Association (FEMA) maps.

3.2.13 Geography and Geology of the Site

Geography and geology of the Site are discussed in Section 2.3.

3.2.14 Current Institutional Controls

As described in the BCP Application, there are currently no ICs on the property.

3.3 SUMMARY OF SELECTED REMEDIAL ACTIONS

The elements of the remedy are:

1. Site preparation to abatement of all ACM associated with the exiting building structure for the purpose of preparing the site for the demolition of the building, to facilitate remediation.
2. Demolition of building structures to enable implementation of the subsurface Remedial Alternative 1 excavation.
3. Demolition, decommissioning, and removal of existing infrastructure associated with the former Site usage that could have contributed to contamination (i.e., abandoned 2,500-gallon UST, existing truck/hydraulic lifts, floor drains and associated drainpipes, etc.).
4. Excavation of soil/fill exceeding Unrestricted Use SCOs to achieve a Track 1 remedy. Soil/fill will be excavated to a depth of 16 ft bls across the Site and extend deeper in two hotspot areas (Figure 9). The hotspot areas will be excavated to a depth of 27 ft bls or to bedrock, whichever is encountered first.
5. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work.
6. Construction dewatering (as required) and handling of extracted groundwater by containerizing for on-Site pre-treatment prior to discharge to the city sewer system under the appropriate permits.
7. *In-situ* chemical oxidation (ISCO) of VOCs in groundwater to achieve a bulk reduction in groundwater contaminant concentrations and to further remediate deep soil contamination in the VOC hotspot area.

8. Collection and analysis of post-excavation confirmation samples to evaluate the performance of the remedy for soil within the general excavation area and the chromium hot spot excavation area.
9. Collection and analysis of post-ISCO confirmation samples to evaluate the performance of the remedy for groundwater and for soil within the VOC hot spot excavation area.
10. Appropriate off-Site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal.
11. Importation of clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) for use as backfill to establish redevelopment design grades, as necessary. Clean fill requiring testing will meet the Unrestricted Use SCOs.
12. Installation of a vapor barrier system (minimum thickness 20 mil) under the building foundation's slab and up the foundation walls to prevent soil vapor intrusion and any potential exposure to soil vapor from off-Site exposure pathways.
13. All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, will be addressed in accordance with all applicable Federal, State, and local rules and regulations
14. Installation of onsite groundwater monitoring wells.
15. If required, employment of a short-term Institutional Control in the form of an Environmental Easement in the event short-term groundwater monitoring at the Site is required compliance with the Monitoring Plan is necessary after the Certificate of Completion is achieved.

Remedial activities will be performed at the Site in accordance with this NYSDEC-approved RIR/RAWP and the Department-issued Decision Document. All deviations from the RIR/RAWP and/or Decision Document will be promptly reported to NYSDEC for approval and fully explained in the FER.

4.0 REMEDIAL ACTION PROGRAM

The following sections describe the Remedial Action program.

4.1 GOVERNING DOCUMENTS

The applicable documents governing the remedial action are described below.

4.1.1 Standards, Criteria and Guidance

SCGs were discussed in Section 3.1.2.

4.1.2 Site-Specific Health & Safety Plan (HASP)

The Site-specific Health and Safety Plan (HASP) is included in Appendix H and the CAMP is included in Appendix I. All remedial work performed under this plan will be in full compliance with governmental requirements, including Site and worker safety requirements mandated by Federal OSHA.

The Volunteer and associated parties preparing the remedial documents submitted to the State and those performing the construction work, are completely responsible for the preparation of an appropriate HASP and for the appropriate performance of work according to that plan and applicable laws.

The HASP and requirements defined in this RIR/RAWP pertain to all remedial and invasive work performed at the Site until the issuance of a Certificate of Completion.

The Roux Site Safety Coordinator will be determined prior to implementation of the Remedial Action. A resume will be provided to NYSDEC prior to the start of remedial construction.

Though not anticipated, if required, confined space entry will comply with all OSHA requirements to address the potential risk posed by combustible and toxic gasses.

4.1.3 Quality Assurance Project Plan (QAPP)

The Quality Assurance Project Plan (QAPP), attached as Appendix G, includes all procedures to be followed for sampling and analysis during the remedial action. The QAPP includes all requirements outlined in DER-10 Section 2.4.

4.1.4 Construction Quality Assurance Plan (CQAP)

Quality assurance/quality control procedures for all construction activities associated implementation of the remedial action construction are established in the Construction Quality Assurance Plan (CQAP), which is included in this section of the RIR/RAWP. The CQAP describes the site-specific construction quality assurance and control measures that will be performed during remediation that will be implemented at the Site during implementation of the RIR/RAWP. The CQAP includes a program for construction observation and testing to verify performance of the remedial construction in accordance with the RIR/RAWP.

4.1.4.1 Organization/ Personnel

The implementation of the remedial action construction will be sequenced based on construction requirements, environmental considerations, and logistic limitations posed by the size of the Site and proximity of adjacent structures. The project team is comprised of the Owner/Volunteer (SB Gerard Avenue LLC), contractors, and consultants specializing in one or more critical aspects of the project. It is understood by the project team that close coordination and proper sequencing of all activities occurring on the Site will be crucial to the success of the remediation. The project team and associated responsibilities are as follows. If changes are made the project team, the CQAP will be amended.

4.1.4.2 Owner/ Volunteer – Site Redevelopment and Regulatory Interaction

Steven Wilkowski, *Project Coordination*

As a representative of the Site owner, SB Gerard Avenue LLC's, Steven Wilkowski will coordinate communications with regulatory agencies and will provide general oversight of all aspects of the remediation. Mr. Wilkowski will be responsible for the review of all documents,

reports, correspondence, etc., required by the RIR/RAWP and/or the BCA with the NYSDEC dated January 8, 2021.

SB Gerard Avenue LLC's Project Manager will be responsible for community notifications and addressing concerns with the adjacent property owners and local community on all remediation-related issues. Mr. Wilkowski will be immediately notified by the onsite team of any complaints or concerns regarding the work raised by the adjacent property owners and or the general public.

4.1.4.3 General Contractor/ Construction Manager

Personnel To Be Determined, *Project Quality Control Officer*

The General Contractor/ Construction Manager and will be responsible for the quality assurance of all of the tasks being implemented and will be determined at a later date. The General Contractor/ Construction Manager will confirm that all components of the Site activities are conducted according to the requirements of the RIR/RAWP. The General Contractor/ Construction Manager will be responsible for verifying that the daily Site construction activities are in compliance with all of the safety requirements and regulations governing the Site activity, however, each subcontractor is responsible for the health and safety of their own personnel.

4.1.4.4 Roux Environmental Engineering and Geology, D.P.C. – RIR/RAWP and Environmental Monitoring Compliance

Rob Kovacs, P.G., *Project Principal-In Charge*
Brian Morrissey, P.E., *Remedial Engineer of Record*
Jessica Lam, *Project Manager*
Rachel Henke, *Quality Assurance Officer*
Personnel To Be Determined*, Field Manager/ Site Safety Officer (SSO)*

Roux will coordinate all Site activities being implemented to achieve the remedial objectives defined in the RIR/RAWP and will act as the SSO. Roux will provide continual review of all quality control measures implemented by the contractors to ensure compliance with the Site's remedial objectives and the Site-specific HASP. As such, Roux will provide oversight services for

the duration of the remedial activities. Roux will be responsible for managing the transportation and disposal of contaminated waste and materials generated during the construction, including:

- fill/soil;
- contaminated concrete, bricks or other construction debris; and
- personal protective equipment and other miscellaneous debris.

Roux will implement the CAMP. CAMP monitoring data will be reported daily to the SSO and will be maintained onsite. Action level exceedances will be reported to the SSO, SB Gerard Avenue LLC's project manager, and appropriate communication and action taken. All CAMP monitoring records will be included in the overall FER that will be submitted to the NYSDEC and NYSDOH and will include all of the CAMP data collected, daily monitoring station location maps, and copies of the action limit reports (if any). If an action limit report is generated due to VOC exceedances, the NYSDEC and NYSDOH will be notified within 24 hours of the exceedance. Action limit exceedances for dust, if any, will be discussed in the daily report. A brief summary of CAMP activities, including any action limit reports generated, will be provided in the daily report.

All on-Site quality control persons identified in the QAPP will provide daily briefings and/or reports to Roux onsite personnel, identifying the tasks completed, the remedial measures achieved, and any other issues of concern. Additionally, Mr. Brian Morrissey, the "Remedial Engineer", a professional engineer licensed in the State of New York, will be responsible for certifying that the remediation construction was completed in substantial conformance with the approved RIR/RAWP and/or any NYSDEC-approved field changes.

4.1.4.5 TBD – Soil Remedial Contractor

Personnel To Be Determined, *Construction Quality Control*

The soil Remedial Contractor is responsible for the excavation of portions of the Site to the required depths, coordination with the General Contractor for disposal of the contaminated excavated materials, contaminated construction and demolition debris and all other contaminated wastes generated, transportation and disposal of non-contaminated construction and demolition debris (if any), and decontamination of equipment. The primary environmental obligations of the

soil Remedial Contractor include safely managing all excavated materials, preventing the contaminated Site soils from leaving the Site, and decontaminating equipment, as necessary.

4.1.4.6 Environmental Laboratory

Eurofins TestAmerica will be utilized for all remediation construction-related analytical requirements. Eurofins TestAmerica is a NYSDOH ELAP-certified laboratory. All results will be reported in EDDs prepared in accordance with NYSDEC requirements (Category B). Formal laboratory qualifications and QA/QC information packages for TestAmerica and any other analytical laboratories proposed for the project will be submitted to the NYSDEC, if requested.

4.1.4.7 Surveying Firm

A NYS-licensed surveying firm, will be contracted by SB Gerard Avenue LLC to provide lines, grades, boundaries, benchmarks, topographic surveys, as-built drawings, and any other survey work required for the proper execution and documentation of the work as required by the RIR/RAWP.

4.1.4.8 Waste Disposal Facilities

Waste from the Site will be transported to appropriately permitted waste disposal facilities. This CQAP will be updated with the names of the facility or facilities, as required. If any is generated, non-impacted construction debris will be transported to a registered construction and demolition disposal facility.

4.1.4.9 Waste Transporter and Disposal Facility Qualifications

As required, a qualifications package will be provided by each vendor contracted to transport waste from the Site to the designated soil disposal facilities and each designated disposal facility. The package shall include the following:

- proof of insurance and all current necessary waste transport permits for the waste type(s) being transported.
- Letters of Commitment or other appropriate documentation from all waste haulers and from all transfer, treatment, storage and disposal facilities to be used for the project. The letters of commitment shall specifically identify the types and quantities of waste that

the facility will be able to accept, the permit numbers for all facilities at which the waste will be accepted and all waste characterization requirements, if additional to waste characterization samples already collected. In the event that a facility (such as a privately-owned treatment works) is prohibited from issuing a letter of commitment without a sample of the waste, a conditional type letter will be acceptable. Such a conditional letter shall specifically state what types and quantities of waste the facility will accept.

- For each waste hauler:
  - Name and federal and state identification numbers, as applicable.
  - Address.
  - Name of responsible contact for the hauler.
  - Telephone number for the contact.
  - List of types and sizes of all transport vehicles and equipment to be used.
  - A description of proposed transportation route, method and procedures for hauling waste material, including type of vehicles that will be used for each type of waste.
  - Copies of any and all necessary permits and authorizations for each type of waste transported.
- For each transfer, treatment, storage and disposal facility, the Contractor shall submit the following information:
  - Facility name and federal and state identification numbers.
  - Facility location.
  - Name of responsible contact for the facility.
  - Telephone number for contact.
  - Signed letter of agreement to accept waste.
  - Unit of measure utilized at facility for costing purposes.
  - Copies of all permits, licenses, letters of approval, and other authorizations to operate, held by the proposed facility as they pertain to receipt and management of waste derived from this Contract.

4.1.4.10 Construction Quality Control Testing

Implementation of quality control testing and measurement will be performed by the contractors conducting the specific Site tasks, as required. The quality control officers, defined in Section 4.1.4.4, will be responsible for providing documentation of all testing and measurement

results to Roux. Roux will be responsible for verifying that all quality control testing has been conducted in compliance with the RIR/RAWP and as specified herein.

Prior to initial quality control testing procedures:

1. Verify that the testing procedures are within the manufacturer's recommendations.
2. Verify that the facilities' testing equipment is available and comply with testing standards.
3. Check testing instrument calibrations against certified standards.
4. Verify the recording forms, including all the test documentation requirements have been prepared.

Specific task-driven testing/certification obligations as they relate to environmental aspects of the project are as follows:

- A New York State-licensed surveyor will conduct all of the necessary measurements.
- Excavated soil will require waste characterization analyses prior to disposal. Waste characterization analysis parameters and frequency for waste leaving the Site, if any, are determined by the waste disposal facility's acceptance requirements. As required, waste will be tested in accordance with the soil disposal facility's analytical acceptance requirements. Results will be provided to the disposal facility for review.
- The CAMP requires continuous real-time monitoring of VOCs and particulates during all intrusive Site activities. This monitoring equipment will be inspected periodically throughout each day to check and manually record the concentrations of VOCs and particulates and to ensure that the equipment is working properly. The equipment will be repaired, recalibrated, or replaced, as necessary. The periodic measurements will be used to identify any potential risks of offsite migration. This monitoring data will be collected and logged for review daily by Roux and made available for regulatory agency review. Action Limit Reports will be completed to document any and all action level exceedances, as defined in the CAMP.

All testing data will be managed in accordance with the above requirements and will be included in the FER to be prepared by Roux upon completion of all remedial objectives defined in the RIR/RAWP.

4.1.4.11 Project Coordination

During implementation of the remedial action construction, progress meetings/conference calls will be conducted periodically to assess the progress of the work, overall progress to date, quality control requirements, environmental and construction health and safety requirements, and future progress expectations. Those in attendance will include representatives from the

Owner/Contractor, Roux and other subcontractors, as necessary. The NYSDEC and NYSDOH will attend the progress meetings at their discretion. This will provide the opportunity for all Site tasks to be integrated and discussed collectively and provide for coordination of all Site activities to maintain the overall construction schedule. Routine task meetings will also be conducted on an as-needed basis to insure proper communication between the contractors, tradesman, and supervisory personnel.

4.1.5 Soil/Materials Management Plan (SoMP)

The SoMP is included in Section 5.4 of this RIR/RAWP.

4.1.6 Storm-Water Pollution Prevention Plan (SWPPP)

A Stormwater Pollution Prevention Plan (SWPPP) is required for the Remedial Action since the area of disturbance will be greater than one acre. The need for erosion control measures during the Remedial Action will be required and are described in Section 4.3.4.

The erosion and sediment controls will be in conformance with requirements presented in the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016 and the New York State Stormwater Design Manual, dated January 2015.

4.1.7 Community Air Monitoring Plan (CAMP)

All invasive work will be completed in accordance with the CAMP that is included as Appendix I.

4.1.8 Contractors Site Operations Plan (SOP);

Contractor plans for remediation have not been prepared at this time. The Remedial Engineer has reviewed all completed plans and submittals for this remedial project (including those listed above and contractor and sub-contractor document submittals) and confirms that they are in compliance with this RIR/RAWP. The Remedial Engineer is responsible to ensure that all later document submittals for this remedial project, including contractor and sub-contractor document

submittals, are in compliance with this RIR/RAWP. All remedial documents will be submitted to NYSDEC and NYSDOH in a timely manner and prior to the start of work.

4.1.9 Citizen Participation Plan (CPP)

A certification of mailing will be sent by the Volunteer to the NYSDEC project manager following the distribution of all Fact Sheets and notices that includes: (1) certification that the Fact Sheets were mailed, (2) the date they were mailed; (3) a copy of the Fact Sheet, (4) a list of recipients (contact list); and (5) a statement that the repository was inspected on (specific date) and that it contained all of applicable project documents.

No changes will be made to approved Fact Sheets authorized for release by NYSDEC without written consent of the NYSDEC. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

The approved Citizen Participation Plan for this project is currently under review by NYSDEC.

Document repositories have been established at the following locations and contain all applicable project documents:

Macomb's Bridge Public Library
2633 Adam Clayton Powell Jr Blvd
New York, New York 10039
(212) 281-4900

Bronx Community Board Four
1650 Selwyn Avenue, Suite 11A
Bronx, New York 10457
Telephone: (718) 299-0800

4.2 GENERAL REMEDIAL CONSTRUCTION INFORMATION

4.2.1 Project Organization

The Remedial Contractors have not been selected to date. Once established, a listing of key personnel involved in the Remedial Action will be provided to the NYSDEC. A copy of

professional profiles for the Project Principal and Remedial Engineer for Roux and for the data validator are presented in Appendix J.

4.2.2 Remedial Engineer

The Remedial Engineer for this project will be Mr. Brian Morrissey. The Remedial Engineer is a registered professional engineer licensed by the State of New York. The Remedial Engineer will have primary direct responsibility for implementation of the remedial program for the 580-610 Gerard Avenue Site (NYSDEC BCA Index No. C203142-12-20 Site No. C203142). The Remedial Engineer will certify in the Final Engineering Report that the remedial activities were observed by qualified environmental professionals under his supervision and that the remediation requirements set forth in the Remedial Action Work Plan and any other relevant provisions of ECL 27-1419 have been achieved in full conformance with that Plan. Other Remedial Engineer certification requirements are listed later in this RIR/RAWP.

The Remedial Engineer will coordinate the work of other contractors and subcontractors involved in all aspects of remedial construction, including soil excavation, stockpiling, characterization, removal and disposal, air monitoring, emergency spill response services, import of back fill material, and management of waste transport and disposal. The Remedial Engineer will be responsible for all appropriate communication with NYSDEC and NYSDOH.

The Remedial Engineer will review all pre-remedial plans submitted by contractors for compliance with this Remedial Action Work Plan and will certify compliance in the Final Engineering Report.

The Remedial Engineer will provide the certifications listed in Section 10.1 in the Final Engineering Report.

4.2.3 Remedial Action Construction Schedule

A schedule for the major elements of the remedial construction and the redevelopment construction are presented below in Section 11.0.

4.2.4 Work Hours

The hours for operation of remedial construction will conform to the New York City Department of Buildings construction code requirements or according to specific variances issued by that agency. DEC will be notified by the Volunteer of any variances issued by the Department of Buildings. NYSDEC reserves the right to deny alternate remedial construction hours.

4.2.5 Site Security

Security for the work, equipment, materials, supplies, facilities, personnel, and incidentals will be provided throughout the performance of the work at the Site. The existing garage is currently locked and secured. A construction fence will be installed, as appropriate, by the Volunteer during implementation of the remedial action and redevelopment. Roux will maintain a sign in/sign out sheet for all visitors to the Site.

4.2.6 Traffic Control

All construction work will occur between 7 A.M. and 6 P.M. from Monday to Friday. The General Contractor may work longer hours and/or weekends, as permitted by the proper authorities. If work beyond these hours or on weekends is required, the proper authorities will be notified. Disturbances to the local community will be minimized to the extent practical.

Trucking for waste disposal from the Site and for backfill materials into the Site is expected to be minimal based on the preferred remedy described in this RIR/RAWP. For any trucking required, the proposed truck routes for ingress and egress to the Site are shown in Figure 4.

The inbound truck route to the Site is:

- From I-87 S, take Exit 5 for Macombs Dam Br and merge onto Major Deegan Service Road;
- Take Major Deegan Service Road south for approximately 1 mile and turn south onto Exterior Street (left turn);
- Take Exterior Street south for approximately 0.4 miles and turn east onto E 149th Street (left turn);
- Take E 149th Street east for approximately 360 feet and turn north onto Gerard Avenue (left turn); and

- Take Gerard Avenue north for approximately 0.1 miles and the Site is located on the right.

The outbound truck route from the Site is:

- Exit the Site onto Gerard Avenue (right turn)
- Take Gerard Avenue north for approximately 0.2 miles and turn northwest onto E 153rd Street (left turn);
- Take E 153rd Street northwest for approximately 0.3 miles and turn west onto E 157th Street (slight left turn);
- Take E 157th Street west for approximately 260 feet and turn north onto Major Deegan Service Road (right turn); and
- Take Major Deegan Service Road north for approximately 0.2 miles and stay left to merge onto I-87 N.

All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes. These are the most appropriate routes and take into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting offsite queuing of trucks entering the facility, to the extent practicable; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site, to the extent practical.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation.

The contractors operating on the Site will be responsible for providing all necessary personnel and materials (i.e., traffic lanes, safety cones, etc.) to control traffic entering and exiting the Site and for coordinating traffic control measures with the New York City Police Department, as necessary. Contractors operating on the Site shall be responsible for all applicable New York City Department of Transportation (NYCDOT) traffic control and notification requirements and incorporating those elements into this Traffic Control Plan.

4.2.7 Contingency Plan

The Contingency Plan is described in Section 9.0.

4.2.8 Worker Training and Monitoring

All general Site workers (as defined in OSHA 1910.120 (e)(3)(i)) that will be involved with earth disturbance activities will have received a minimum of 40 hours of initial health and safety training for hazardous waste site operations (40-Hour HAZWOPER training) and meet the medical surveillance requirements included in the HASP.

4.2.9 Agency Approvals

All permits or government approvals required for remedial construction have been, or will be, obtained prior to the start of remedial construction.

The planned end use for the Site is in conformance with the 2013 rezoning of the area and is thus consistent with current zoning for the property as determined by New York City Department of Planning. A Certificate of Completion will not be issued for the project unless conformance with zoning designation is demonstrated.

A complete list of all local, regional and national governmental permits, certificates or other approvals or authorizations required to perform the remedial and development work is attached in Table 19. This list includes a citation of the law, statute or code to be complied with, the originating agency, and a contact name and phone number in that agency. This list will be updated in the Final Engineering Report.

All planned remedial or construction work in regulated wetlands and adjacent areas will be specifically approved by the NYSDEC Division of Natural Resources to ensure that it meets the requirements for substantive compliance with those regulations prior to the start of construction. Nothing in the approved Remedial Action Work Plan or its approval by NYSDEC should be construed as an approval for this purpose.

4.2.10 NYSDEC BCP Signage

A project sign is no longer required for sites undergoing remediation through the BCP.

4.2.11 Pre-Construction Meeting with NYSDEC

A project kick-off meeting will be conducted with the Volunteer, Roux, and the major subcontractors prior to the commencement of any intrusive remedial activities proposed in this RAWP. The NYSDEC and NYSDOH will be notified at least seven days in advance of the proposed meeting date and will attend the pre-construction meeting at their discretion.

4.2.12 Emergency Contact Information

An emergency contact sheet with names and phone numbers is included in Table 21. That document will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency.

4.2.13 Remedial Action Costs

The total estimated cost of the Remedial Action is $6,760,000. An itemized and detailed summary of estimated costs for all remedial activity is attached as Table 17. This will be revised based on actual costs and submitted as an Appendix to the Final Engineering Report.

4.3 SITE PREPARATION

The following sections describe the Site preparation activities associated with the preferred remedy for the Site.

4.3.1 Demolition

Prior to demolition, ACM abatement will be completed at the Site. Following ACM abatement, all Site structures and features will be demolished to facilitate remedial activities. ACM and C&D generated from the demolition will be disposed off-Site in accordance with applicable federal, state, and local rules and regulations for handling, transport, and disposal. The proposed demolition plans are included as Appendix K.

4.3.2 Mobilization

Mobilization and Site preparation activities include:

1. Mobilization of equipment to the work area.
2. Traffic control measures.
3. Work zone demarcation.
4. Installation of erosion and sediment control measures in accordance with the New York Guidelines for Urban Erosion and Sediment Control.
5. Set-up of decontamination facilities.
6. Installation of temporary facilities.
7. Installation of perimeter air monitoring system.

4.3.3 Monitoring Well Decommissioning/ Vapor Probe Decommissioning

Existing groundwater monitoring wells will either be protected during remediation and development for use in post-remedial monitoring or will be properly decommissioned in accordance with NYSDEC policy CP-43 and replaced if required in locations to be approved by the NYSDEC.

4.3.4 Erosion and Sedimentation Controls

Soil erosion and sediment control measures for management of storm water will be installed in accordance with the SWPPP. Silt fence and/or hay bales will be placed by the Remedial Contractor along the perimeter fencing surrounding the excavation area, to control storm water runoff and surface water from entering or exiting the excavation. Catch basin inlets immediately adjacent to the work area will be protected to prevent disturbed soil from entering. These control measures will be installed prior to initiating the soil excavation.

4.3.5 Stabilized Construction Entrance(s)

Stabilized construction entrances will be installed at the egress points from the Site. Any soil spilled on the sidewalk or street immediately adjacent to the Site will be promptly removed and the street will be cleaned.

4.3.6 Utility Marker and Easements Layout

The Volunteer and its contractors are solely responsible for the identification of utilities that might be affected by work under the RIR/RAWP and implementation of all required, appropriate, or necessary health and safety measures during performance of work under this RIR/RAWP. The Volunteer and its contractors are solely responsible for safe execution of all invasive and other work performed under this RIR/RAWP. The Volunteer and its contractors must obtain any local, State or Federal permits or approvals pertinent to such work that may be required to perform work under this RIR/RAWP. Approval of this RIR/RAWP by NYSDEC does not constitute satisfaction of these requirements.

The presence of utilities and easements on the Site will be investigated by the Volunteer or the Remedial Engineer.

4.3.7 Sheeting and Shoring

Appropriate management of structural stability of on-Site or off-Site structures during on-Site activities include excavation is the sole responsibility of the Volunteer and its contractors. Sheeting and shoring will be required to implement this remedial action. The Volunteer and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan. The Volunteer and its contractors must obtain any local, State or Federal permits or approvals that may be required to perform work under this Plan. Further, the Volunteer and its contractors are solely responsible for the implementation of all required, appropriate, or necessary health and safety measures during performance of work under the approved Plan. The proposed support of excavation plans are included as Appendix L.

4.3.8 Equipment and Material Staging

Equipment and materials for the remedial construction will be onsite in a designated area.

4.3.9 Decontamination Area

A temporary decontamination pad will be constructed to decontaminate excavation equipment prior to leaving the Site. The decontamination pad will be constructed using

polyethylene liner sloped to a low-lying sump to collect any liquids. All decontamination material will be collected and properly disposed of off-Site.

4.3.10 Site Fencing

The fences and gates will be closed and locked when there is no activity on the Site and any breaks or gaps will be repaired immediately. Temporary fencing (e.g., cones, caution tape, etc.) will supplement the perimeter fencing to delineate and secure the area of ongoing remediation activities within the Site such as soil stockpiles, and health and safety exclusion zones.

4.3.11 Demobilization

The Demobilization plan should address:

- Restoration of areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management area[s], and access area);
- Removal of temporary access areas (whether on-Site or off-Site) and restoration of disturbed access areas to pre-remediation conditions;
- Removal of sediment and erosion control measures and disposal of materials in accordance with acceptable rules and regulations;
- Equipment decontamination;
- General refuse disposal.

4.4 REPORTING

All daily and monthly Reports will be included in the Final Engineering Report.

4.4.1 Daily Reports

Daily reports will be submitted to NYSDEC and NYSDOH Project Managers by the end of each day following the reporting period and will include:

- An update of progress made during the reporting day;
- Locations of work and quantities of material imported and exported from the Site;
- References to alpha-numeric map for Site activities;

- A summary of any and all complaints with relevant details (names, phone numbers);
- A summary of CAMP finding, including excursions;
- An explanation of notable Site conditions.

Daily reports are not intended to be the mode of communication for notification to the NYSDEC of emergencies (accident, spill), requests for changes to the RAWP or other sensitive or time critical information. However, such conditions must also be included in the daily reports. Emergency conditions and changes to the RIR/RAWP will be addressed directly to NYSDEC Project Manager via personal communication.

Daily Reports will include a description of daily activities keyed to an alpha-numeric map for the Site that identifies work areas. These reports will include a summary of air sampling results, odor and dust problems and corrective actions, and all complaints received from the public. The NYSDEC assigned project number will appear on all reports.

4.4.2 Monthly Reports

Monthly reports will be submitted to NYSDEC and NYSDOH Project Managers within ten days following the end of the month of the reporting period and will include:

- Activities relative to the Site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (i.e. tons of material exported and imported, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- Sampling results received following internal data review and validation, as applicable; and,
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays.

4.4.3 Other Reporting

Photographs will be taken of all remedial activities and submitted to NYSDEC in digital (JPEG) format. Photos will illustrate all remedial program elements and will be of acceptable quality. Representative photos of the Site prior to any Remedial Actions will be provided. Representative photos will be provided of each contaminant source, source area and Site structures before, during

and after remediation. Photos will be included in the daily reports as needed, and a comprehensive collection of photos will be included in the Final Engineering Report.

Job-site record keeping for all remedial work will be appropriately documented. These records will be maintained on-Site at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.

4.4.4 Complaint Management Plan

If an odor or dust complaint is received, the following procedure will be implemented:

1. Work in the affected area will be halted, and the source of odors/dust will be identified.
2. NYSDEC, NYSDOH, and the Volunteer will be notified of the complaint.
3. Nuisance odors, if any, will be abated through covering/containerizing excavated materials, backfilling open excavations in a timely manner; and/or using a foam unit or other appropriate measures.
4. Nuisance dust, if any, will be abated through covering/containerizing excavated materials, and/or using water on excavations.
5. Work will resume in the affected area when the nuisance odors/dust have been abated, as determined by the Roux on-Site personnel.

Noise complaints will be handled through the City of New York.

4.4.5 Deviations from the Remedial Action Work Plan

Deviations from the RIR/RAWP will be reported to NYSDEC for approval and fully explained in the FER. At a minimum, this section should include the following:

- Reasons for deviating from the approved RIR/RAWP;
- Approval process to be followed for changes/editions to the RIR/RAWP; and
- Effect of the deviations on overall remedy.

5.0 REMEDIAL ACTION IMPLEMENTATION

The Remedial Action selected for implementation is Remedial Alternative 1. An overview of the key remedial action elements is presented on Figure 9. Remedial activities are described in more detail below.

5.1 MATERIAL REMOVAL FROM SITE

5.1.1 Soil/Fill Removal

Soil containing COCs exceeding the Track 1 Unrestricted Use SCOs will be excavated and disposed off-Site. The remedial excavation will extend to a depth of 16 ft bls across the Site to ensure the removal of all soil existing above the groundwater table that exceeds Unrestricted Use SCOs (see Figure 5). Following the initial excavation, soil within two hotspot areas will be excavated to 27 ft bls or bedrock, whichever is encountered first, to remove deep soil with contaminants that exceed Unrestricted Use SCOs. Additional areas may also require excavation deeper than 16 ft bls to remove any soil acting as a source of groundwater contamination.

The actual extent of excavations will depend on field observations, technical practicability based on excavation shoring limitations and the risk of undermining adjacent sidewalks and structure, and post excavation samples.

The excavation will be performed by the Soil Remedial Contractor. The excavations will be conducted in a manner that protects the integrity of the adjacent structure. Soil excavation will generally be conducted using traditional excavation equipment. If any underground utilities or other subsurface piping are encountered, the excavation will be performed by hand as required to safely expose and support the utilities.

All trucks removing contaminated material from the Site will be loaded on-Site and properly decontaminated before leaving the Site.

Excavated unsaturated soil may be used as backfill provided it meets soil reuse criteria as noted in DER-10 Table 5.4 and with subsequent approval of NYSDEC. The soil must be inspected prior to reuse and must be free from odors or staining. Excavated material to be used for backfill

will be stockpiled on Site in accordance with Section 5.4. Any soils that are removed from parcels that were not previously investigated will be laboratory analyzed prior to any on-Site reuse.

Material excavated from the Site and slated for off-Site disposal will be disposed in accordance with the SoMP.

5.1.2 Groundwater Removal

Dewatering will be required during some excavation activities to facilitate work below the groundwater table (located in general at depths of 21-24 ft toc). Extracted groundwater will either be containerized and treated as necessary. The groundwater will be extracted through the use of drainage sumps, perimeter well points, or other similar systems to maintain dry conditions within the excavation. Drainage sumps will be installed within the excavation, as necessary, to dewater the excavation area. The water from the drainage sumps will be pumped to either an on-Site wastewater storage tank or an on-Site treatment system. The water will be sampled to determine if treatment is required prior to discharge to the city sewer system. If required, the treatment system will entail a settling tank, oil/water separator, bag filters, and carbon filter vessels, respectively, as appropriate. The Soil Remedial Contractor will identify the means and methods for dewatering and treatment, and the Remedial Engineer and NYSDEC will approve the method.

The quantity of groundwater to be extracted and treated will be determined based upon the following factors:

- Duration of excavation work below the water table;
- Depth of excavation beneath the water table; and
- Hydrogeologic factors including hydraulic permeability, hydraulic gradient, and rate of recharge into the excavation.

Extracted and treated contaminated groundwater, if any, will serve to reduce the toxicity, mobility, and volume of contaminated groundwater beneath the Site.

5.2 *IN-SITU* CHEMICAL OXIDATION (ISCO)

An *in-situ* chemical oxidation (ISCO) injection program will be implemented during the Remedial Action to further address VOCs in groundwater and within deep saturated soil (i.e., the

VOC hot spot area). The *in-situ* groundwater remediation will be performed by placing and mixing a chemical oxidant directly into groundwater following source removal and hot spot excavation. The approximate location of the ISCO treatment area is shown on Figure 9. The final design for the *in-situ* groundwater treatment will be provided to NYSDEC as a separate work plan. Prior to preparation of the work plan, a bench-scale treatability study will be performed to determine the type and total load of oxidant required to achieve a bulk reduction in VOC concentrations. The work plan will include the following:

- Selection of an appropriate chemical oxidant based on the results of the bench-scale treatability study;
- Product specification and Safety Data Sheets for the selected chemical oxidant;
- Chemical oxidant dosage and treatment calculations;
- A Site Plan showing the proposed chemical oxidation placement locations;
- A summary of the means and methods for implementation of the remedial activity, including health and safety, equipment decontamination, and waste disposal procedures; and
- A post-ISCO performance monitoring plan.

5.3 SOIL CLEANUP OBJECTIVES

The Soil Cleanup Objectives for this Site are listed in Table 20 and include the Unrestricted Use SCOs as set forth in Table 375-6.8(a) of 6 NYCRR Part 375.

Soil and materials management on-Site and off-Site will be conducted in accordance with the Soil Management Plan as described below.

Tables 4 through 8 summarize all soil samples that exceed the SCOs proposed for this Remedial Action. A spider map that shows all soil samples that exceed the SCOs proposed for this Remedial Action is shown in Figure 5.

UST closures, if any, will, at a minimum, conform to criteria defined in DER-10.

5.4 REMEDIAL PERFORMANCE EVALUATION

End-point sampling and reporting will be conducted in accordance with the DER-10 and the QAPP and is discussed in the sections below.

5.4.1 Post Excavation End-Point Sampling

End-point samples will be collected to evaluate the performance of the remedy with respect to the attainment of Track 1 SCOs (Table 20). Proposed end-point sample locations are presented on Figure 9. In the general remedial excavation area, bottom confirmation samples will be collected at a frequency of one sample per 1,500 square feet of the excavation bottom. This sampling frequency is adequate due to large remedial excavation area. Sidewall confirmation sampling will not be required around the general excavation perimeters due to the excavation extending to the BCP Site Boundary. The end-point samples will be analyzed for the full-suite of NYSDEC Part 375 parameters, to demonstrate compliance with the Unrestricted Use SCOs, and for the emerging contaminants of concern.

Hotspot excavations are anticipated to extend well beneath the groundwater table, to a depth of 27 ft bls or bedrock, whichever is encountered first. In the chromium hotspot excavation area, bottom confirmation samples will be collected at a frequency of 900 square feet of the excavation bottom and sidewall confirmation samples at a frequency of 30 linear feet of sidewall. If bedrock is encountered, bottom confirmation samples will not be required. In the VOC hot spot excavation area, collection of confirmation samples during the remedial excavation may not be representative of final contaminant concentrations due to soil being in the saturated zone and the on-going treatment of groundwater from ISCO. Therefore, performance of the remedy in the VOC hotspot excavation area will be assessed with post-ISCO performance monitoring.

Confirmation sampling in hot spot excavation areas will be technically challenging due to support of excavation and dewatering. The feasibility of collecting confirmation samples will be assessed by the Remedial Engineer during the excavation activities and will be dependent on the lowering the groundwater table to achieve a dry excavation bottom. If confirmation sampling is determined to be impractical, NYSDEC will be notified immediately, and an alternative performance evaluation method will be proposed.

Note that although not anticipated, should a buried tank be uncovered during excavation activities, the Volunteer will follow all applicable regulations associated with registering and addressing tanks, as well as revert back to the higher sampling frequency discussed in the NYSDEC DER-10 (i.e., 1/900 square feet for bottom samples and 1/30 linear feet for sidewall samples) within the relevant area(s).

5.4.2 Methodology

Each sample will be inspected for visual evidence of contamination (i.e., staining, presence of petroleum or odors) and field screened for VOCs using a portable photoionization detector (PID). If samples are free from visual evidence of contamination and PID indicates soil is not contaminated, the sample will be sent to a lab. Soil samples to be submitted for analysis will be place into a laboratory sample jar and transported to the laboratory in an iced container. Laboratory analysis will be performed by a NYSDOH ELAP-approved laboratory.

5.4.3 Reporting of Results

The laboratory will report analytical results for post-excavation confirmation samples in ASP Category B deliverable packages. An EDD in the required NYSDEC format will also be provided by the laboratory.

All end-point confirmation sample data generated for the Remedial Action will be logged in a database and organized to facilitate data review and evaluation. The electronic dataset will include the data flags provided in accordance with USEPA Laboratory Data Validation Functional Guidelines for Evaluating Organic Analysis and Inorganic Analyses, as well as additional comments of the data review for ASP/CLP analyses. The data flags include such items as: 1) concentration below required detection limit, 2) estimated concentration due to poor recovery below required detection limit, 3) estimated concentration due to poor spike recovery, and 4) concentration of chemical also found in laboratory blank.

5.4.4 QA/QC

Quality control (QC) samples serve as checks on both the sampling and measurements systems and assist in determining the overall data quality with regard to representation, accuracy, and precision. The QAPP, included as Appendix G to this RIR/RAWP, describes QA/QC procedures and sampling for the project.

5.4.5 DUSR

A DUSR will be prepared to evaluate the pre-excavation confirmation samples by a party independent from the laboratory performing the analysis in accordance with Appendix 2B of DER-10. The QAPP, included as Appendix G to this RIR/RAWP, describes the DUSR to be prepared for the project.

5.4.6 Reporting of End-Point Data in FER

Chemical labs used for all end-point sample results and contingency sampling will be NYSDOH ELAP certified. The FER will provide a tabular and map summary of all end-point sample results and exceedances of SCOs.

5.5 ESTIMATED MATERIAL REMOVAL QUANTITIES

The estimated quantity of soil/fill to be removed from the Site is 20,500 cubic yards. Reuse/relocation of soil/fill excavated as part of the Remedial Action is not anticipated.

5.6 Soil/Materials Management Plan

The following sections provide the Soil/Material Management Plan (SoMP) to be implemented during the Remedial Action, as necessary.

5.6.1 Soil Screening Methods

Visual, olfactory and PID soil screening and assessment will be performed by a qualified environmental professional or experienced field geologist under the direction of the Remedial Engineer during all remedial and development excavations into known or potentially contaminated material. Soil screening will be performed regardless of when the invasive work is done and will

include all excavation and invasive work performed during the remedy and during development phase, such as excavations for foundations and utility work, prior to issuance of the COC.

All primary contaminant sources (including but not limited to tanks and hotspots) identified during Site Characterization, Remedial Investigation, and Remedial Action will be surveyed by a surveyor licensed to practice in the State of New York. This information will be provided on maps in the Final Engineering Report.

Screening will be performed by qualified environmental professionals. Resumes will be provided for all personnel responsible for field screening (i.e. those representing the Remedial Engineer) of invasive work for unknown contaminant sources during remediation and development work.

5.6.2 Stockpile Methods

Stockpiles, if any, 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 NYSDEC.

Stockpiles, if any, will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Soil stockpiles, if any, will be continuously encircled with silt fences. Compost filter socks, or an equivalent approved by the Remedial Engineer, will be used as needed near catch basins, surface waters and other discharge points.

Water will be available on-site at suitable supply and pressure for use in dust control.

5.6.3 Materials Excavation and Load Out

The Remedial Engineer or a qualified environmental professional under his/her supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The Volunteer and its contractors are solely 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 Volunteer or the Remedial Engineer.

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).

Vehicles leaving the Site will not be overloaded. The Remedial Engineer's representative will make reasonable efforts to ensure that vehicles are not loaded beyond their NYSDOT weight rating and that all material is secured beneath the truck bed cover.

A truck wash will be operated on-Site. The Remedial Engineer will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the remedial construction is complete.

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-Site sediment tracking.

The Remedial Engineer or a qualified environmental professional under his/her supervision will be responsible for ensuring that all egress points for truck and equipment transport from the Site will be clean of dirt and other materials derived from the Site during Site remediation and development. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site -derived materials.

The Volunteer and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations and bridge footings).

The Remedial Engineer will ensure that Site development activities will not interfere with, or otherwise impair or compromise, remedial activities proposed in this Remedial Action Work Plan.

Each hotspot, and structure to be remediated (USTs, vaults and associated piping, transformers, etc.) will be removed and end-point remedial performance sampling completed before excavations related to Site development commence proximal to the hotspot or structure.

Development-related grading cuts and fills will not be performed without NYSDEC approval and will not interfere with, or otherwise impair or compromise, the performance of remediation required by this plan.

Mechanical processing of historical fill and contaminated soil on-Site is prohibited.

All primary contaminant sources (including but not limited to tanks and hotspots) identified during Site Characterization, Remedial Investigation, and Remedial Action will be surveyed by a surveyor licensed to practice in the State of New York. The survey information will be shown on maps to be reported in the Final Engineering Report.

5.6.4 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.

Truck transport routes are as described in Section 4.2.6. All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes.

Proposed in-bound and out-bound truck routes to the Site are shown in Figure 4. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off- Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Queuing of trucks will be performed on-Site in order to minimize off-Site disturbance. Off-Site queuing will be prohibited.

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.

All trucks will be washed prior to leaving the Site. Truck wash waters will be collected and disposed of off-Site in an appropriate manner.

5.6.5 Materials Disposal Off-Site

The disposal locations have not yet been determined. Disposal location established at a later date will be reported to the NYSDEC Project Manager.

The total quantity of material expected to be disposed off-Site is estimated to be 20,500 cy.

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated off-Site management of materials from this Site is prohibited without formal NYSDEC approval.

Material that does not meet Track 1 Unrestricted Use SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

As necessary, the following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Site conforms with all applicable laws: (1) a letter from the Remedial Engineer or BCP Volunteer to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation Site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data

for the material being transported (including Site Characterization data); and (2) a letter from all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material. These documents will be included in the FER.

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.

Historical fill and contaminated soils from the Site are prohibited from being disposed at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities).

Soils that are contaminated but non-hazardous and are being removed from the Site are considered by the Division of Materials Management (DMM) in NYSDEC to be Construction and Demolition (C/D) materials with contamination not typical of virgin soils. These soils may be sent to a permitted Part 360 landfill. They may be sent to a permitted C/D processing facility without permit modifications only upon prior notification of NYSDEC Region 2 DMM. This material is prohibited from being sent or redirected to a Part 360-16 Registration Facility. In this case, as dictated by DMM, special procedures will include, at a minimum, a letter to the C/D facility that provides a detailed explanation that the material is derived from a DER remediation Site, that the soil material is contaminated and that it must not be redirected to on-Site or off-Site Soil Recycling Facilities. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported.

The Final Engineering Report will include an accounting of the destination of all material removed from the Site during this Remedial Action, including excavated soil, contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. This information will also be presented in a tabular form in the FER.

Bill of Lading system or equivalent will be used for off-Site movement of non-hazardous wastes and contaminated soils. This information will be reported in the Final Engineering Report.

Hazardous wastes derived from on-Site will be stored, transported, and disposed of in full compliance with applicable local, State, and Federal regulations.

Appropriately licensed haulers will be used for material removed from this Site and will be in full compliance with all applicable local, State and Federal regulations.

Waste characterization will be performed for off-Site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the FER. All data available for soil/material to be disposed at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

5.6.6 Materials Reuse On-Site

Although not anticipated, on-site soil may be reused for backfill. In the event this occurs, chemical criteria for on-Site reuse of material has been approved by NYSDEC. This criteria is listed in Table 20. The Remedial Engineer will ensure that procedures defined for materials reuse in this RIR/RAWP are followed and that unacceptable material will not remain on-Site.

Acceptable demolition material proposed for reuse on-Site, if any, will be sampled for asbestos.

Concrete crushing or processing on-Site is prohibited.

Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site is prohibited for reuse on-Site.

Contaminated on-Site material, including historic fill and contaminated soil, removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. This will be expressed in the final Site Management Plan.

5.6.7 Fluids Management

Construction wastewater will be generated from localized dewatering to reach proposed excavation depths, for personnel/equipment decontamination, and to remove stormwater from bermed soil stockpile and excavation areas. Construction wastewater will be collected and stored on-Site in leak-tight drums, vacuum trucks or temporary storage tanks. The wastewater will be sampled and submitted for analysis for disposal/discharge characterization. Based on the

laboratory analytical results, the construction wastewater will be disposed off-Site at a permitted disposal/recycling facility or discharged (after treatment, if necessary) to the public sewer system.

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Liquids discharged into the New York City sewer system will be addressed through approval by NYCDEP.

Dewatered fluids will not be recharged back to the land surface or subsurface of the Site. Dewatering fluids will be managed off-Site.

Discharge of water generated during remedial construction to surface waters (i.e. a local pond, stream or river) is prohibited without a SPDES permit.

5.6.8 Demarcation

Residual contaminated soil is not expected to be present after completion of the remedial excavation. In the event that residual contamination is remaining, after the completion of soil removal and any other invasive remedial activities and prior to backfilling, a land survey will be performed by a New York State licensed surveyor. This survey will define the top of the 'Residuals Management Zone', the zone that requires adherence to special conditions for disturbance of contaminated residual soils defined in the Site Management Plan. The survey will measure the grade covered by the demarcation layer before the placement of cover soils, pavement and sub-soils, structures, or other materials. This survey and the demarcation layer placed on this grade surface will constitute the physical and written record of the upper surface of the 'Residuals Management Zone' in the Site Management Plan. A map showing the survey results will be included in the Final Engineering Report and the Site Management Plan.

5.6.9 Backfill from Off-Site Sources

All materials proposed for import onto the Site will be approved by the Remedial Engineer and will be in compliance with provisions in this RIR/RAWP prior to receipt at the Site.

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

The Final Engineering Report will include the following certification by the Remedial Engineer: "I certify that all import of soils from off-Site, including source evaluation, approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan".

All imported soils will meet NYSDEC approved backfill or cover soil quality objectives for this Site. These NYSDEC approved backfill or cover soil quality objectives are the Unrestricted Use SCOs as set forth in Table 375-6.8(a) of 6 NYCRR Part 375 and listed in Table 20. Non-compliant soils will not be imported onto the Site without prior approval by NYSDEC. Nothing in the approved Remedial Action Work Plan or its approval by NYSDEC should be construed as an approval for this purpose.

A "Request to Import/Reuse Fill Material" form will be filed with the NYSDEC project manager for review and approval prior to import to the site. A copy of the form is presented in Appendix M.

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. Nothing in this Remedial Action Work Plan should be construed as an approval for this purpose.

Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers.

5.6.10 Stormwater Pollution Prevention

Silt fencing, filter socks, or approved equal will be installed around the entire perimeter of the remedial construction area. Drop-inlet protection will be installed at stormwater catch basins adjacent to ingress/egress points at the Site. All erosion and sediment controls will be 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 NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the erosion and sediment controls 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.

5.6.11 Contingency Plan for Unidentified Contaminant Source

If underground tanks or other previously unidentified contaminant sources are found during on-Site remedial excavation or development related construction, sampling will be performed on product, sediment and surrounding soils, etc. Chemical analytical work will be for full scan parameters (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs). These analyses will not be limited to CP-51 Table 2 and 3 parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval.

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. These findings will be also included in daily and periodic electronic media reports.

5.6.12 Community Air Monitoring Plan

The CAMP is included as Appendix I. Exceedances observed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers and included in the Daily Report.

5.6.13 Odor, Dust and Nuisance Control Plan

The Final Engineering Report will include the following certification by the Remedial Engineer: "I certify that all invasive work during the remediation and all invasive development

work were conducted in accordance with dust and odor suppression methodology defined in the Remedial Action Work Plan."

5.6.13.1 Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-Site. Specific odor control methods to be used on a routine basis will include limiting open excavation areas and covering excavated soil. If nuisance odors are identified, 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 all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Volunteer's Remedial Engineer, who is responsible for certifying the Final Engineering Report.

All necessary means will be employed to prevent on- and off-Site nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (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.

Where odor nuisances have developed during remedial work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering excavation and handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

5.6.13.2 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:

- Water will be available on-site at suitable supply and pressure for use in dust control.
- 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 spraying.

5.6.13.3 Other Nuisances

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

A plan will be developed and utilized by the contractor for all remedial work and will conform, at a minimum, to NYCDEP noise control standards.

6.0 RESIDUAL CONTAMINATION TO REMAIN ON-SITE

The remedial action is designed to eliminate the concentrations of Site contaminants in soil through soil excavation to achieve the Track 1 SCOs. Residual contaminants in groundwater and/or soil vapor may exist immediately following the remedial action due to previous contaminant contributions to groundwater from the former source material. Short-term ICs may be employed to protect public health and the environment if the bulk reduction of groundwater contamination does not achieve the AWQSGVs. The short-term institutional period is not anticipated to exceed 5 years consistent with the Track 1 cleanup requirements described in 6 NYCRR Part 375-3.8(e).

The FER will report residual contamination on the Site if a Track 1 remedy cannot be achieved in tabular and map form. This will include presentation of any groundwater exceedances that remain on the Site.

7.0 ENGINEERING CONTROLS

Engineering Controls (ECs) will be employed to address any potential residual groundwater contamination remaining at the Site. The one primary preventative measure EC that will be constructed during the remedial action is a sub-slab vapor barrier system. The sub-slab vapor barrier system's primary purpose is to protect subgrade floor level from soil vapor intrusion and prevent any potential human exposure to soil vapor contaminants. Soil vapor contaminants may derive from contaminants volatizing from groundwater in the short-term (i.e., during the groundwater MNA period) or from unknown off-Site sources in the long-term. A sub-slab depressurization system was evaluated as an engineering control but determined to be infeasible due to the groundwater table being in close proximity to the cellar slab.

The FER will include photographs (maximum of two photos per page) of the installation, manufacturer's information on the products installed, and as-built plans showing all components of the EC.

7.1 SUB-SLAB VAPOR BARRIER

The sub-slab vapor barrier will be a flexible sheet membrane constructed of polyolefin and barrier resins. The vapor barrier will be a minimum thickness of 20-mil and meet ASTM E1745 standards for permeance, tensile strength, and puncture resistance. The vapor barrier will not deteriorate, decompose, or degrade below concrete slabs when buried and has an indefinite life expectancy. The proposed vapor barrier for under slab applications is Grace Preprufe® 300R or approved equal. The vapor barrier system will also be installed for the subgrade walls according to manufacturer specifications and depending on foundation construction methods. The proposed vapor barrier for vertical application is Grace Preprufe® 160R, Grace Bituthene® or approved equal. All vapor barriers will be installed in accordance with Manufacturer's recommendations including, but not limited to, recommended overlapping distance, tape seam installation, tape seam products, subbase layer preparation, and material. Appropriate subbase layer will include sand, pea gravel, or mud-slab concrete to prevent punctures during installation.

8.0 CRITERIA FOR COMPLETION OF REMEDIATION

8.1 END-POINT SOIL SAMPLING

The criterion used to evaluate completion of the soil remedy are the Track 1 Unrestricted Use SCOs (Table 20). Evidence of compliance with the Track 1 remedy will be achieved through the collection and analysis of end-point samples, as described in Section 5.4.1. The soil remediation shall be considered complete when the vast majority of end-point confirmation samples indicate that the SCOs for the Site have been achieved and those that do not achieve the SCOs exceed it only by a small amount, as determined by the NYSDEC.

8.2 POST-ISCO GROUNDWATER SAMPLING

The criterion that will be used to evaluate performance of the groundwater remedy will be presented in the ISCO work plan and provided to NYSDEC under separate cover. If post-ISCO groundwater sampling does not demonstrate a bulk reduction in groundwater contaminants, groundwater monitoring will continue at the Site, as described in Section 9.1.1.

9.0 CONTINGENCY PLAN

A contingency plan was developed for implementation in the event that the remedial goals cannot be achieved. The following subsections present alternate remedial action plans for soil and/or groundwater.

9.1 CONTINGENT TRACK 1 GROUNDWATER REMEDY

If post-remediation monitoring does not indicate a bulk reduction in groundwater contamination following the Remedial Action, a contingent remedy will be implemented to achieve remedial goals for groundwater within 5 years. The contingent remedy will consist of the employment of short-term ICs and additional *in-situ* groundwater injections.

9.1.1 Groundwater Monitoring

Groundwater monitoring activities to assess the performance of the remedy, or natural attenuation following the removal of contaminant sources, may continue, as determined by NYSDOH and NYSDEC, until residual groundwater concentrations are found to be below NYSDEC standards or have become asymptotic over an extended period. If required, monitoring will continue until permission to discontinue is granted in writing by NYSDEC and NYSDOH. Monitoring activities will be outlined in the Monitoring Plan (see Section 9.1.2.2).

9.1.2 Institutional Controls

After remedial construction is complete, the Remedial Site may have residual contaminants in groundwater and soil vapor until natural attenuation of groundwater contamination is achieved. Short-term ICs for the residual contamination will be incorporated into the remedy to render the overall Site remedy protective of public health and the environment, until remedial goals are achieved.

9.1.2.1 Environmental Easement

As part of this remedy, an Environmental Easement approved by NYSDEC will be filed and recorded with the Bronx County Office of the City Register. The Environmental Easement will be submitted as part of the Final Engineering Report.

The Environmental Easement will render the Remedial Site a Controlled Property as defined by a survey and metes and bonds description. The Environmental Easement must be recorded with the Bronx County Office of the City Register before the Certificate of Completion can be issued by NYSDEC.

The Site restrictions that apply to the Controlled Property are:

- Compliance with a Monitoring Plan until remedial goals for groundwater are achieved;
- Grantor agrees to submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the Monitoring Plan. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow. This annual statement must be certified by an expert that the NYSDEC finds acceptable.

9.1.2.2 Monitoring Plan

A Monitoring Plan will be prepared to describe the measures for monitoring the performance and effectiveness of the groundwater remedy. The Monitoring Plan will provide measures for implementation of a groundwater monitoring program following the Remedial Action. The groundwater monitoring program will include baseline monitoring and performance monitoring of on-Site groundwater and consist of groundwater sampling and analysis of groundwater contaminants identified during the RI (see Section 2.4.5). It is anticipated that, following remediation, a minimum of eight (8) quarterly monitoring events will be performed for the first two years following completion of remedial construction.

The Monitoring Plan will be last phase of remediation and will be implemented upon approval of the Final Engineering Report and issuance of the Certificate of Completion (COC) for

the Remedial Action. The Monitoring Plan will be submitted as part of the FER but will be written in a manner that allows its removal and use as a complete and independent document. Monitoring continues in perpetuity or until released in writing by NYSDEC. The property owner is responsible to ensure that all Monitoring responsibilities defined in the Environmental Easement a are performed on the Controlled Property.

9.1.3 In-Situ Groundwater Injections

The goal for the additional in-situ groundwater injections will be to achieve remedial goals for groundwater within five years of the Remedial Action. If necessary, additional ¬in-situ groundwater injections will be completed in the area with VOC-impacted groundwater, located in the northeastern portion of the Site. Groundwater injections will consist of the installation of temporary injection wells and the injection of a chemical reagent to promote the reduction in concentration of groundwater contaminants. The final design for the in-situ groundwater injections, if necessary, would be provided to NYSDEC as a separate work plan.

9.2 ALTERNATE TRACK 2 REMEDY

9.2.1 Soil

An alternate Track 2 remedy for soil will be implemented in the event that the Track 1 Unrestricted Use SCOs cannot be achieved in a given area of the Site, and/or construction-related constraints prevent further excavation to achieve such SCOs, and/or a bulk reduction in groundwater contamination is not achieved within five years of the Remedial Action. The alternate remedy will be consistent with Remedial Alternative 2, described in Section 3.1, and will consist of a Track 2 cleanup in areas where Track 1 SCOs were not met. Remedial action in alternate Track 2 areas will conform with the requirements of this RIR/RAWP, but include the following deviations:

- The SCOs will consist of the lower of the Restricted Residential Use SCOs and Protection of Groundwater SCOs, as shown in Table 20.
- Soil/fill that exceeds the Track 2 SCOs will be excavated to a maximum depth of 15 ft bls and removed from the Site for appropriate off-Site disposal.

- Endpoint samples will consist of excavation bottom documentation samples to document that the SCOs were met. The results of documentation sampling will delineate the extent of Track 2 cleanup areas.
- Preparation of an SMP to establish long-term management requirements for any contaminated soil remaining at depth.
- Addition of long-term ICs to the Environmental Easement, for the portions of the Site that do not achieve a Track 1 cleanup (i.e. Track 2 areas), that:
    - allows the continued use and development of the controlled property for restricted residential (or less restrictive uses) as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
    - requires compliance with the Department-approved SMP; and
    - requires the remedial party or Site owner to complete and submit a periodic certification of institutional and engineering controls to the NYSDEC in accordance with Part 375-1.8 (h)(3).

9.2.2 Groundwater

An alternate Track 2 remedy for groundwater will be implemented in the event that remedial goals for groundwater are not met within 5 years of the Remedial Action. The alternate remedy for groundwater will conform with the requirements of this RIR/RAWP, but include the following deviations:

- Preparation of an SMP to establish long-term management requirements for groundwater contamination remaining on-Site.
- Addition of long-term ICs to the Environmental Easement that:
    - restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or Article 141 of the NYCDOH code (groundwater restriction applies to the entire Site);
    - requires compliance with the Department-approved SMP; and
    - requires the remedial party or Site owner to complete and submit a periodic certification of institutional and engineering controls to the NYSDEC in accordance with Part 375-1.8 (h)(3).

10.0 FINAL ENGINEERING REPORT

A Final Engineering Report (FER) will be submitted to NYSDEC following implementation of the Remedial Action defined in this RIR/RAWP. The FER provides the documentation that the remedial work required under this RIR/RAWP has been completed and has been performed in compliance with this plan. The FER will provide a comprehensive account of the locations and characteristics of all material removed from the Site including the surveyed map(s) of all sources. The Final Engineering Report will include as-built drawings for all constructed elements, calculation and manufacturer documentation for treatment systems, certifications, manifests, bills of lading as well as a Groundwater Monitoring Plan if required. The FER will provide a description of the changes in the Remedial Action from the elements provided in the RIR/RAWP and associated design documents. The FER will provide a tabular summary of all performance evaluation sampling results and all material characterization results and other sampling and chemical analysis performed as part of the Remedial Action. The FER will provide test results demonstrating that all mitigation and remedial systems are functioning properly. The FER will be prepared in conformance with DER-10.

Where determined to be necessary by NYSDEC, a Financial Assurance Plan will be required to ensure the sufficiency of revenue to perform short-term monitoring tasks defined in the Monitoring Plan and long-term tasks defined in the Environmental Easement. This determination will be made by NYSDEC in the context of the Final Engineering Report review.

The Final Engineering Report will include written and photographic documentation of all remedial work performed under this remedy.

The FER will include an itemized tabular description of actual costs incurred during all aspects of the Remedial Action.

The FER will provide a thorough summary of all residual contamination left on the Controlled Property on the Site after the remedy is complete, if any. Residual contamination includes all contamination that exceeds the Track 1 Unrestricted Use SCO in 6 NYCRR Part 375-6. A table that shows exceedances from Track 1 Unrestricted SCOs for all soil/fill remaining at the Site after the Remedial Action and a map that shows the location and summarizes exceedances

from Track 1 Unrestricted SCOs for all soil/fill remaining at the Site after the Remedial Action will be included in the FER.

The FER will provide a thorough summary of all residual contamination that exceeds the SCOs defined for the Site in the RIR/RAWP and must provide an explanation for why the material was not removed as part of the Remedial Action. A table that shows residual contamination in excess of Site SCOs and a map that shows residual contamination in excess of Site SCOs will be included in the FER.

The Final Engineering Report will include an accounting of the destination of all material removed from the Site, including excavated contaminated soil, historic fill, solid waste, hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. It will provide an accounting of the origin and chemical quality of all material imported onto the Site.

Before approval of a FER and issuance of a Certificate of Completion, all project reports must be submitted in digital form on electronic media (PDF).

10.1 CERTIFICATIONS

The following certification will appear in front of the Executive Summary of the Final Engineering Report. The certification will be signed by the Remedial Engineer, Brian P. Morrissey, who is a Professional Engineer registered in New York State This certification will be appropriately signed and stamped. The certification will include the following statements:

I, Brian P. Morrissey, am currently a registered professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the 580-610 Gerard Avenue Site (NYSDEC BCA Index No. C203142-12-20 Site No. C203142).

I certify that the Site description presented in this FER is identical to the Site descriptions presented in the Environmental Easement and the Brownfield Cleanup Agreement for the 580-610 Gerard Avenue Site and related amendments.

I certify that the Remedial Action Work Plan dated [month day year] and Stipulations [if any] in a letter dated [month day year] and approved by the NYSDEC were implemented and that all requirements in those documents have been substantively complied with.

I certify that the remedial activities were observed by qualified environmental professionals under my supervision and that the remediation requirements set forth in the Remedial Action Work Plan and any other relevant provisions of ECL 27-1419 have been achieved.

I certify that all use restrictions, Institutional Controls, Engineering Controls, and all operation and maintenance requirements applicable to the Site are contained in an Environmental Easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

I certify that the export of all contaminated soil, fill, water or other material from the property was performed in accordance with the Remedial Action Work Plan, and were taken to facilities licensed to accept this material in full compliance with all Federal, State and local laws.

I certify that all import of soils from off-Site, including source approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan.

I certify that all invasive work during the remediation and all invasive development work were conducted in accordance with dust and odor suppression methodology and soil screening methodology defined in the Remedial Action Work Plan.

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

It is a violation of Article 130 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 130, New York State Education Law.

11.0 SCHEDULE

A proposed schedule of Remedial Actions is presented below.

Remedial Action Element or Deliverable	Duration (Months)	Cumulative Duration (Months)
NYSDEC Approval of RIR/RAWP (after 45-day public comment period)	3	3
Building Asbestos Abatement/Building Demolition (contractor specifications, bid awards, and permitting for excavation to happen concurrently)	3	6
Contractor Mobilization and Support of Excavation (SOE) Construction	0.75	6.75
Soil Excavation, Confirmation Sampling, and Backfill	2.5	9.25
Preparation and Submittal of Draft FER	2	11.25
Monthly BCP Reporting, NYSDEC Approval of FER, and issuance of Certificate of Completion	3	14.25

TABLES

Notes Utilized Throughout Tables	
Soil Tables	
J -	Estimated value
U -	Indicates that the compound was analyzed for but not detected
B -	The analyte was found in an associated blank as well as in the sample
P -	The RPD between the results for the two columns exceeds the method-specified criteria
RPD -	Relative Percent Difference
T -	Indicates that a quality control parameter has exceeded laboratory limits
ft bls -	Feet below land surface
FD -	Duplicate sample
µg/kg -	Micrograms per kilogram
mg/kg -	Milligrams per kilogram
NYSDEC -	New York State Department of Environmental Conservation
SCO -	Soil Cleanup Objectives
--	No SCO available
Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use SCO	
Shaded data indicates that parameter was detected above the NYSDEC Part 375 Restricted Residential SCO	
Red data indicates that parameter was detected above the NYSDEC Part 375 Protection of Groundwater SCO	
Per- and Polyfluoroalkyl Substances	
GV -	Guidance Values
Bold data indicates that parameter exceeded the NYSDEC Unrestricted Use Guidance Values	
Shaded data indicates that parameter exceeded the NYSDEC Restricted Residential Guidance Values	
Red data indicates that parameter exceeded the NYSDEC Protection of Groundwater Guidance Values	
Undetected results reflect Minimum Detection Limits	
Groundwater Tables	
J -	Estimated Value
U -	Compound was analyzed for but not detected
T -	Indicates that a quality control parameter has exceeded laboratory limits
FD -	Duplicate
µg/L -	Micrograms per liter
ng/L -	Nanogram per liter
NYSDEC -	New York State Department of Environmental Conservation
AWQSGVs -	Ambient Water-Quality Standards and Guidance Values
--	No NYSDEC AWQSGV available
Bold data indicates that parameter was detected above the NYSDEC AWQSGVs	
Per- and Polyfluoroalkyl Substances	
MCL -	Maximum Contaminant Levels
Bold data indicates that parameter exceeded the NYSDEC Drinking Water MCL	
Undetected results reflect Minimum Detection Limits	

Notes Utilized Throughout Tables	
Soil Vapor/Ambient Air	
J	Estimated value
D -	Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte
U -	Indicates that the compound was analyzed for but not detected
J -	The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased low.
UJ -	The analyte was analyzed for, but was not detected. The associated reported quantitation limit is approximate and may be inaccurate or imprecise.
ug/m3 -	Micrograms per cubic meter
Bold data indicates that parameter was detected	

Table 1. Summary of Groundwater Monitoring Well and Soil Vapor Point Construction
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Monitoring Well / Soil Vapor Point	Installation Date	Surface Elevation (ft NAVD88)	Top of Well Pipe Elevation (ft NAVD88)	Sample Screen Material	Sample Screen Interval (ft bcs* or ft bls**)	Sample Screen Interval (ft NAVD88)	Comments
RXMW-01	6/28/2021	26.43	26.12	20- slot PVC	15 to 25	11.12 to 1.12	
RXMW-02	7/1/2021	26.48	26.20	20- slot PVC	17.5 to 27.5	8.7 to -1.3	
RXMW-03	7/2/2021	26.48	26.18	20- slot PVC	17.5 to 27.5	8.68 to -1.32	
RXMW-04	7/7/2021	26.53	26.22	20- slot PVC	20 to 30	6.22 to -3.78	
RXMW-05	7/8/2021	26.66	26.24	20- slot PVC	20 to 30	6.24 to -3.76	
RXMW-06	7/8/2021	26.51	26.28	20- slot PVC	17 to 27	9.28 to -0.72	
RXSV-01	6/28/2021	-	-	SS Mesh	8 to 8.5	-	
RXSV-02	6/30/2021	-	-	SS Mesh	12.5 to 13	-	
RXSV-03	6/29/2021	-	-	SS Mesh	15.5 to 16	-	
RXSV-04	7/6/2021	-	-	SS Mesh	15.5 to 16	-	
RXSV-05	7/6/2021	-	-	SS Mesh	5 to 5.5	-	
RXSV-06	7/9/2021	-	-	SS Mesh	15.5 to 16	-	
RXSS-01	7/2/2021	-	-	SS Mesh	Sub-Slab	-	
RXSS-02	7/2/2021	-	-	SS Mesh	Sub-Slab	-	
RXSS-03	7/2/2021	-	-	SS Mesh	Sub-Slab	-	

ft bcs - Feet below concrete slab

ft bls - Feet below land surface

ft NAVD88 - Feet relative to North American Vertical Datum of 1988

PVC - Polyvinyl chloride

SS - Stainless Steel (6-inch length)

Table 2. Summary of Water Level Measurements
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Monitoring Well	Date	Measuring Point Elevation* (ft NAVD88)	Depth to Product (ft bls)	Depth To Water (ft bls)	Groundwater Elevation (ft NAVD88)	Comments
RXMW-01	7/16/2021	26.12	-	21.14	4.98	
RXMW-02	7/16/2021	26.20	-	21.20	5.00	
RXMW-03	7/15/2021	26.18	-	21.22	4.96	
RXMW-04	7/15/2021	26.22	-	22.26	3.96	
RXMW-05	7/15/2021	26.24	-	23.30	2.94	
RXMW-06	7/15/2021	26.28	-	21.58	4.70	

ft - Feet

ft bls - Feet below land surface

ft NAVD88 - Feet relative to North American Vertical Datum of 1988

* - Top of well casing

Table 3. Summary of Soil, Groundwater, and Soil Vapor Sampling Performed
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Sample ID/ Location	Sample Matrix	# of Samples	Sample Date(s)	Depths (ft bls)	Analyte(s)
RXSB-01	Soil	4	6/28/2021	0-2, 4-6, 10-12, and 14-16	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-02	Soil	3	6/30/2021	0-2, 4-6, and 10-12	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-03	Soil	5	7/1/2021	0-2, 4-6, 10-12, 14-16, and 23-25 (most impact)	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-04	Soil	5	7/1/2021	0-2, 4-6, 10-12, 14-16, and 23-25 (most impact)	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-05	Soil	2	7/6/2021	0-2 and 4-6	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-06	Soil	5	7/7/2021	0-2, 4-6, 10-12, 14-16, and 23-25 (most impact)	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-07	Soil	5	7/9/2021	0-2, 4-6, 10-12, 14-16, and 23-25 (most impact)	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-08	Soil	2	6/28/2021	0-2 and 4-6	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-09	Soil	4	6/29/2021	0-2, 4-6, 10-12, and 14-16	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-10	Soil	4	6/29/2021	0-2, 4-6, 10-12, and 14-16	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-11	Soil	1	7/2/2021, 7/8/2021	0-2	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-12	Soil	4	7/6/2021	0-2, 4-6, 10-12, and 14-16	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-13	Soil	5	7/7/2021	0-2, 4-6, 10-12, 14-16, and 23-25 (most impact)	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSB-14	Soil	4	7/8/2021	0-2, 4-6, 10-12, and 14-16	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXSV-01	Vapor	1	7/16/2021	8.5 ft bls	TO-15 VOC
RXSV-02	Vapor	1	7/15/2021	13 ft bls	TO-15 VOC
RXSV-03	Vapor	1	7/15/2021	16 ft bls	TO-15 VOC
RXSV-04	Vapor	1	7/15/2021	16 ft bls	TO-15 VOC
RXSV-05	Vapor	1	7/16/2021	5.5 ft bls	TO-15 VOC
RXSV-06	Vapor	1	7/16/2021	16 ft bls	TO-15 VOC
RXSS-01	Vapor	1	7/15/2021	Immediately beneath concrete slab	TO-15 VOC
RXSS-02	Vapor	1	7/15/2021	Immediately beneath concrete slab	TO-15 VOC
RXSS-03	Vapor	1	7/15/2021	Immediately beneath concrete slab	TO-15 VOC
RXMW-01	Water	1	7/16/2021	GW interface	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXMW-02	Water	1	7/16/2021	GW interface	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXMW-03	Water	1	7/15/2021	GW interface	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXMW-04	Water	1	7/15/2021	GW interface	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXMW-05	Water	1	7/15/2021	GW interface	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)
RXMW-06	Water	1	7/15/2021	GW interface	VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-01	RXSB-01	RXSB-01	RXSB-01
				Sample Date:	06/28/2021	06/28/2021	06/28/2021	06/28/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0013 U	0.0012 U	0.0017	0.0011 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
2-Hexanone	--	--	--	MG/KG	0.0064 U	0.0058 U	0.0054 U	0.0054 U
Acetone	**0.05**	100	0.05	MG/KG	0.0077 U	0.007 U	0.0068	0.0065 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.0013 U	0.0012 U	0.0063	0.0011 U
Bromochloromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Bromodichloromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Bromoform	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Bromomethane	--	--	--	MG/KG	0.0026 U	0.0023 U	0.0022 U	0.0022 U
Carbon Disulfide	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Chloroethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Chloroform	0.37	49	0.37	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Chloromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-01	RXSB-01	RXSB-01	RXSB-01
				Sample Date:	06/28/2021	06/28/2021	06/28/2021	06/28/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Cyclohexane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.00052 J	0.0011 U
Dibromochloromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Ethylbenzene	1	41	1	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
m,p-Xylene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.00084 J	0.0011 U
Methyl Acetate	--	--	--	MG/KG	0.0064 U	0.0058 U	0.0054 U	0.0054 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0064 U	0.0058 U	0.0054 U	0.0054 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0064 U	0.0058 U	0.0054 U	0.0054 U
Methylcyclohexane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.001 J	0.0011 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0026 U	0.0023 U	0.0022 U	0.0022 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0003 J	0.0011 U
Sec-Butylbenzene	11	100	11	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Styrene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.0073	0.0053	0.00095 J	0.0011 U
Toluene	0.7	100	0.7	MG/KG	0.0013 U	0.0012 U	0.0023	0.00037 J
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0013 U	0.0012 U	0.0011 U	0.0011 U
Xylenes	**0.26**	100	1.6	MG/KG	0.0026 U	0.0023 U	0.0011 J	0.0022 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-02	RXSB-02	RXSB-02	RXSB-03
				Sample Date:	06/30/2021	06/30/2021	06/30/2021	06/30/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
2-Hexanone	--	--	--	MG/KG	0.0067 U	0.0055 U	0.0058 U	0.0061 U
Acetone	**0.05**	100	0.05	MG/KG	0.013	0.0066 U	0.0069 U	0.0073 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Bromochloromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Bromodichloromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Bromoform	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Bromomethane	--	--	--	MG/KG	0.0027 U	0.0022 U	0.0023 U	0.0024 U
Carbon Disulfide	--	--	--	MG/KG	0.0013 U	0.0004 J	0.0012 U	0.0012 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Chloroethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Chloroform	0.37	49	0.37	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Chloromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-02	RXSB-02	RXSB-02	RXSB-03
				Sample Date:	06/30/2021	06/30/2021	06/30/2021	06/30/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Cyclohexane	--	--	--	MG/KG	0.0013 U	0.0014	0.0012 U	0.0012 U
Dibromochloromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Ethylbenzene	1	41	1	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
m,p-Xylene	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Methyl Acetate	--	--	--	MG/KG	0.0067 U	0.0055 U	0.0058 U	0.0061 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0067 U	0.0055 U	0.0058 U	0.0061 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0067 U	0.0055 U	0.0058 U	0.0061 U
Methylcyclohexane	--	--	--	MG/KG	0.0013 U	0.0016	0.0012 U	0.0012 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0027 U	0.0022 U	0.0023 U	0.0024 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Sec-Butylbenzene	11	100	11	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Styrene	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Toluene	0.7	100	0.7	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Xylenes	**0.26**	100	1.6	MG/KG	0.0027 U	0.0022 U	0.0023 U	0.0024 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-03	RXSB-03	RXSB-03	RXSB-03
				Sample Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	14 - 16	23 - 25
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,2-Dichloropropane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
2-Hexanone	--	--	--	MG/KG	0.0051 U	0.0056 U	0.0058 U	0.005 U
Acetone	**0.05**	100	0.05	MG/KG	0.0061 U	0.0068 U	0.0069 U	0.006 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.001 U	0.00063 J	0.0012 U	0.001 U
Bromochloromethane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Bromodichloromethane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Bromoform	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Bromomethane	--	--	--	MG/KG	0.002 U	0.0023 U	0.0023 U	0.002 U
Carbon Disulfide	--	--	--	MG/KG	0.001 U	0.00036 J	0.0012 U	0.00083 J
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Chloroethane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Chloroform	0.37	49	0.37	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Chloromethane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-03	RXSB-03	RXSB-03	RXSB-03
				Sample Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	14 - 16	23 - 25
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Cyclohexane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Dibromochloromethane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Ethylbenzene	1	41	1	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
m,p-Xylene	--	--	--	MG/KG	0.001 U	0.00056 J	0.0012 U	0.001 U
Methyl Acetate	--	--	--	MG/KG	0.0051 U	0.0056 U	0.0058 U	0.005 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0051 U	0.0056 U	0.0058 U	0.005 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0051 U	0.0056 U	0.0058 U	0.005 U
Methylcyclohexane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.002 U	0.0023 U	0.0023 U	0.002 U
N-Butylbenzene	**12**	100	12	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.001 U	0.00024 J	0.0012 U	0.001 U
Sec-Butylbenzene	11	100	11	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Styrene	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Toluene	0.7	100	0.7	MG/KG	0.001 U	0.00057 J	0.0012 U	0.001 U
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Trichlorofluoromethane	--	--	--	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.001 U	0.0011 U	0.0012 U	0.001 U
Xylenes	**0.26**	100	1.6	MG/KG	0.002 U	0.0008 J	0.0023 U	0.002 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-04	RXSB-04	RXSB-04	RXSB-04
				Sample Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.0011 U	0.0008 J	0.0014	0.0011 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0011 U	0.0014 U	0.0014	0.0011 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.0011 U	0.0018	0.00078 J	0.0011 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
2-Hexanone	--	--	--	MG/KG	0.0053 U	0.007 U	0.0061 U	0.0057 U
Acetone	**0.05**	100	0.05	MG/KG	0.0064 U	0.0084 U	0.0073 U	0.0068 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.0011 U	0.0018	0.0017	0.0011 U
Bromochloromethane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Bromodichloromethane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Bromoform	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Bromomethane	--	--	--	MG/KG	0.0021 U	0.0028 U	0.0024 U	0.0023 U
Carbon Disulfide	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Chloroethane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Chloroform	0.37	49	0.37	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Chloromethane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-04	RXSB-04	RXSB-04	RXSB-04
				Sample Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Cyclohexane	--	--	--	MG/KG	0.0011 U	0.0015	0.0012 U	0.0011 U
Dibromochloromethane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Ethylbenzene	1	41	1	MG/KG	0.0011 U	0.0014 U	0.0003 J	0.0011 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
m,p-Xylene	--	--	--	MG/KG	0.0011 U	0.0023	0.005	0.0004 J
Methyl Acetate	--	--	--	MG/KG	0.0053 U	0.007 U	0.0061 U	0.0057 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0053 U	0.007 U	0.0061 U	0.0057 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0053 U	0.007 U	0.0061 U	0.0057 U
Methylcyclohexane	--	--	--	MG/KG	0.0011 U	0.0058	0.0012 U	0.0011 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0021 U	0.0028 U	0.0024 U	0.0023 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0011 U	0.0013 J	0.0027	0.0011 U
Sec-Butylbenzene	11	100	11	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Styrene	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.0011 U	0.00076 J	0.00091 J	0.0011 U
Toluene	0.7	100	0.7	MG/KG	0.0011 U	0.002	0.0043	0.0011 U
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Xylenes	**0.26**	100	1.6	MG/KG	0.0021 U	0.0036	0.0077	0.0023 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-04	RXSB-05	RXSB-05	RXSB-06
				Sample Date:	07/01/2021	07/06/2021	07/06/2021	07/07/2021
				Sample Depth (ft bls):	23 - 25	0 - 2	4 - 6	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.00032 J	**47 J**	0.0007 J	0.0011 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.0011 U	**21 J**	0.0012 U	0.0011 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
2-Hexanone	--	--	--	MG/KG	0.0056 U	0.76 U	0.0059 U	0.0055 U
Acetone	**0.05**	100	0.05	MG/KG	0.0067 U	0.76 U	0.007 U	0.0066 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.0011 U	**0.086 J**	0.0012 U	0.0011 U
Bromochloromethane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Bromodichloromethane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Bromoform	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Bromomethane	--	--	--	MG/KG	0.0022 U	0.15 U	0.0023 U	0.0022 U
Carbon Disulfide	--	--	--	MG/KG	0.0089	0.15 U	0.0012 U	0.0011 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Chloroethane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Chloroform	0.37	49	0.37	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Chloromethane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-04	RXSB-05	RXSB-05	RXSB-06
				Sample Date:	07/01/2021	07/06/2021	07/06/2021	07/07/2021
				Sample Depth (ft bls):	23 - 25	0 - 2	4 - 6	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Cyclohexane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Dibromochloromethane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Ethylbenzene	1	41	1	MG/KG	0.0011 U	0.21 J	0.0012 U	0.0011 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0011 U	0.62 J	0.0012 U	0.0011 U
m,p-Xylene	--	--	--	MG/KG	0.0011 U	2.6 J	0.00023 J	0.0011 U
Methyl Acetate	--	--	--	MG/KG	0.0056 U	0.24 J	0.0059 U	0.0055 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0056 U	0.76 U	0.0059 U	0.0055 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0056 U	0.76 U	0.0059 U	0.0055 U
Methylcyclohexane	--	--	--	MG/KG	0.0011 U	4.7 J	0.0012 U	0.0011 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0022 U	**0.055 J**	0.0023 U	0.0022 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0011 U	11 J	0.0012 U	0.0011 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.0011 U	2.8	0.0012 U	0.0011 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0011 U	1 J	0.0012 U	0.0011 U
Sec-Butylbenzene	11	100	11	MG/KG	0.0011 U	2.4	0.0012 U	0.0011 U
Styrene	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0011 U	0.16	0.0012 U	0.0011 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.0011 U	0.15 U	0.0012 U	0.00083 J
Toluene	0.7	100	0.7	MG/KG	0.0011 U	0.33 J	0.0012 U	0.0011 U
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0011 U	0.15 U	0.0012 U	0.0011 U
Xylenes	**0.26**	100	1.6	MG/KG	0.0022 U	**3.6 J**	0.0023 U	0.0022 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-06	RXSB-06	RXSB-06	RXSB-06
				Sample Date:	07/07/2021	07/07/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	14 - 16	23 - 25
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.0011 U	0.0011 U	0.0012 U	**96**
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.0011 U	0.0011 U	0.0012 U	**40**
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
2-Hexanone	--	--	--	MG/KG	0.0057 U	0.0056 U	0.006 U	2.6 U
Acetone	**0.05**	100	0.05	MG/KG	0.0079	0.0068 U	0.0072 U	2.6 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Bromochloromethane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Bromodichloromethane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Bromoform	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Bromomethane	--	--	--	MG/KG	0.0023 U	0.0023 U	0.0024 U	0.51 U
Carbon Disulfide	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Chloroethane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Chloroform	0.37	49	0.37	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Chloromethane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-06	RXSB-06	RXSB-06	RXSB-06
				Sample Date:	07/07/2021	07/07/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	14 - 16	23 - 25
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Cyclohexane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Dibromochloromethane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Ethylbenzene	1	41	1	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	4.3
m,p-Xylene	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.2 J
Methyl Acetate	--	--	--	MG/KG	0.0057 U	0.0056 U	0.006 U	2.6 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0057 U	0.0056 U	0.006 U	2.6 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0057 U	0.0056 U	0.006 U	2.6 U
Methylcyclohexane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	88
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0023 U	0.0023 U	0.0024 U	0.51 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0011 U	0.0011 U	0.0012 U	**22**
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.0011 U	0.0011 U	0.0012 U	**15**
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Sec-Butylbenzene	11	100	11	MG/KG	0.0011 U	0.0011 U	0.0012 U	5.2
Styrene	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.00056 J	0.0011 U	0.0012 U	0.51 U
Toluene	0.7	100	0.7	MG/KG	0.0011 U	0.00027 J	0.0012 U	0.51 U
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0011 U	0.0011 U	0.0012 U	0.51 U
Xylenes	**0.26**	100	1.6	MG/KG	0.0023 U	0.0023 U	0.0024 U	0.2 J

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-07	RXSB-07	RXSB-07
				Sample Date:	07/08/2021	07/09/2021	07/09/2021	07/09/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0014 UJ	0.0011 U	0.001 U	0.0011 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0014 UJ	0.0011 U	0.001 U	0.0011 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
2-Hexanone	--	--	--	MG/KG	0.0071 U	0.0054 U	0.0052 U	0.0055 U
Acetone	**0.05**	100	0.05	MG/KG	0.0085 U	0.0064 U	0.0062 U	0.0066 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Bromochloromethane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Bromodichloromethane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Bromoform	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Bromomethane	--	--	--	MG/KG	0.0028 U	0.0021 U	0.0021 U	0.0022 U
Carbon Disulfide	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Chloroethane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Chloroform	0.37	49	0.37	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Chloromethane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-07	RXSB-07	RXSB-07
				Sample Date:	07/08/2021	07/09/2021	07/09/2021	07/09/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Cyclohexane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Dibromochloromethane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Ethylbenzene	1	41	1	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
m,p-Xylene	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Methyl Acetate	--	--	--	MG/KG	0.0071 U	0.0054 U	0.0052 U	0.0055 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0071 U	0.0054 U	0.0052 U	0.0055 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0071 U	0.0054 U	0.0052 U	0.0055 U
Methylcyclohexane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0028 U	0.0021 U	0.0021 U	0.0022 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Sec-Butylbenzene	11	100	11	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Styrene	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.0031 J	0.00066 J	0.001 UJ	0.0011 UJ
Toluene	0.7	100	0.7	MG/KG	0.0014 UJ	0.0011 U	0.001 U	0.0011 U
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0014 U	0.0011 U	0.001 U	0.0011 U
Xylenes	**0.26**	100	1.6	MG/KG	0.0028 U	0.0021 U	0.0021 U	0.0022 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-08	RXSB-08	RXSB-08
				Sample Date:	07/09/2021	06/28/2021	06/28/2021	06/28/2021
				Sample Depth (ft bls):	23 - 25	0 - 2	4 - 6	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	FD
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.92	0.0012 U	0.0011 U	0.0011 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,2-Dichloropropane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.98	0.0012 U	0.0011 U	0.0011 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
2-Hexanone	--	--	--	MG/KG	0.6 U	0.0062 U	0.0055 U	0.0057 U
Acetone	**0.05**	100	0.05	MG/KG	0.6 U	0.0075 U	0.0066 U	0.0068 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Bromochloromethane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Bromodichloromethane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Bromoform	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Bromomethane	--	--	--	MG/KG	0.12 U	0.0025 U	0.0022 U	0.0023 U
Carbon Disulfide	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Chloroethane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Chloroform	0.37	49	0.37	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Chloromethane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-08	RXSB-08	RXSB-08
				Sample Date:	07/09/2021	06/28/2021	06/28/2021	06/28/2021
				Sample Depth (ft bls):	23 - 25	0 - 2	4 - 6	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	FD
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Cyclohexane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Dibromochloromethane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Ethylbenzene	1	41	1	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.065 J	0.0012 U	0.0011 U	0.0011 U
m,p-Xylene	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Methyl Acetate	--	--	--	MG/KG	0.6 U	0.0062 U	0.0055 U	0.0057 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.6 U	0.0062 U	0.0055 U	0.0057 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.6 U	0.0062 U	0.0055 U	0.0057 U
Methylcyclohexane	--	--	--	MG/KG	0.74	0.0012 U	0.0011 U	0.0011 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.12 U	0.0025 U	0.0022 U	0.0023 U
N-Butylbenzene	**12**	100	12	MG/KG	1.5	0.0012 U	0.0011 U	0.0011 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.23	0.0012 U	0.0011 U	0.0011 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Sec-Butylbenzene	11	100	11	MG/KG	1.3	0.0012 U	0.0011 U	0.0011 U
Styrene	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.12	0.0012 U	0.0011 U	0.0011 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Toluene	0.7	100	0.7	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Trichlorofluoromethane	--	--	--	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.12 U	0.0012 U	0.0011 U	0.0011 U
Xylenes	**0.26**	100	1.6	MG/KG	0.24 U	0.0025 U	0.0022 U	0.0023 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-09	RXSB-09	RXSB-09	RXSB-09
				Sample Date:	06/29/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
2-Hexanone	--	--	--	MG/KG	0.0067 U	0.0059 U	0.006 U	0.006 U
Acetone	**0.05**	100	0.05	MG/KG	0.008 U	0.0071 U	0.0072 U	0.0072 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Bromochloromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Bromodichloromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Bromoform	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Bromomethane	--	--	--	MG/KG	0.0027 U	0.0024 U	0.0024 U	0.0024 U
Carbon Disulfide	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Chloroethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Chloroform	0.37	49	0.37	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Chloromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-09	RXSB-09	RXSB-09	RXSB-09
				Sample Date:	06/29/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Cyclohexane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Dibromochloromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Ethylbenzene	1	41	1	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
m,p-Xylene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Methyl Acetate	--	--	--	MG/KG	0.0067 U	0.0059 U	0.006 U	0.006 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0067 U	0.0059 U	0.006 U	0.006 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0067 U	0.0059 U	0.006 U	0.006 U
Methylcyclohexane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0027 U	0.0024 U	0.0024 U	0.0024 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Sec-Butylbenzene	11	100	11	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Styrene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.00053 J
Toluene	0.7	100	0.7	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0013 U	0.0012 U	0.0012 U	0.0012 U
Xylenes	**0.26**	100	1.6	MG/KG	0.0027 U	0.0024 U	0.0024 U	0.0024 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-10	RXSB-10	RXSB-10	RXSB-10
				Sample Date:	06/29/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
2-Hexanone	--	--	--	MG/KG	0.0061 U	0.008 U	0.0062 U	0.006 U
Acetone	**0.05**	100	0.05	MG/KG	0.0073 U	0.0097 U	0.0074 U	0.0072 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.0012 U	0.0016 U	0.00053 J	0.0012 U
Bromochloromethane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Bromodichloromethane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Bromoform	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Bromomethane	--	--	--	MG/KG	0.0024 U	0.0032 U	0.0025 U	0.0024 U
Carbon Disulfide	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Chloroethane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Chloroform	0.37	49	0.37	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Chloromethane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-10	RXSB-10	RXSB-10	RXSB-10
				Sample Date:	06/29/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Cyclohexane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Dibromochloromethane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Ethylbenzene	1	41	1	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
m,p-Xylene	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Methyl Acetate	--	--	--	MG/KG	0.0061 U	0.008 U	0.0062 U	0.006 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0061 U	0.008 U	0.0062 U	0.006 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0061 U	0.008 U	0.0062 U	0.006 U
Methylcyclohexane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0024 U	0.0032 U	0.0025 U	0.0024 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Sec-Butylbenzene	11	100	11	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Styrene	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Toluene	0.7	100	0.7	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0012 U	0.0016 U	0.0012 U	0.0012 U
Xylenes	**0.26**	100	1.6	MG/KG	0.0024 U	0.0032 U	0.0025 U	0.0024 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-11	RXSB-11	RXSB-12	RXSB-12
				Sample Date:	07/02/2021	07/02/2021	07/06/2021	07/06/2021
				Sample Depth (ft bls):	0 - 2	0 - 2	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.029	0.029	0.0013 U	0.0012 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.01	0.011	0.0013 U	0.0012 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
2-Hexanone	--	--	--	MG/KG	0.0063 U	0.0056 U	0.0064 U	0.006 U
Acetone	**0.05**	100	0.05	MG/KG	0.044	**0.051**	0.0077 U	0.0071 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.005	0.0049	0.0013 U	0.0012 U
Bromochloromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Bromodichloromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Bromoform	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Bromomethane	--	--	--	MG/KG	0.0025 U	0.0022 U	0.0026 U	0.0024 U
Carbon Disulfide	--	--	--	MG/KG	0.0014	0.0017	0.0013 U	0.0012 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Chloroethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Chloroform	0.37	49	0.37	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Chloromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-11	RXSB-11	RXSB-12	RXSB-12
				Sample Date:	07/02/2021	07/02/2021	07/06/2021	07/06/2021
				Sample Depth (ft bls):	0 - 2	0 - 2	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Cyclohexane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Dibromochloromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Ethylbenzene	1	41	1	MG/KG	0.0017	0.0021	0.0013 U	0.0012 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
m,p-Xylene	--	--	--	MG/KG	0.03	0.038	0.0013 U	0.0012 U
Methyl Acetate	--	--	--	MG/KG	0.0063 U	0.0056 U	0.0064 U	0.006 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0063 U	0.0056 U	0.0064 U	0.006 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0063 U	0.0056 U	0.0064 U	0.006 U
Methylcyclohexane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0025 U	0.0022 U	0.0026 U	0.0024 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.00056 J	0.00048 J	0.0013 U	0.0012 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0076	0.011	0.0013 U	0.0012 U
Sec-Butylbenzene	11	100	11	MG/KG	0.00045 J	0.0005 J	0.0013 U	0.0012 U
Styrene	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.00045 J	0.0011 U	0.0013 U	0.0012 U
Toluene	0.7	100	0.7	MG/KG	0.016	0.019	0.0013 U	0.0012 U
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0013 U	0.0011 U	0.0013 U	0.0012 U
Xylenes	**0.26**	100	1.6	MG/KG	0.037	0.048	0.0026 U	0.0024 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-12	RXSB-12	RXSB-13	RXSB-13
				Sample Date:	07/06/2021	07/06/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	10 - 12	14 - 16	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0018
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.00095 J
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
2-Hexanone	--	--	--	MG/KG	0.0058 U	0.006 U	0.0057 U	0.0062 U
Acetone	**0.05**	100	0.05	MG/KG	0.0069 U	0.0072 U	0.009	0.0074 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.0012 U	0.0012 U	0.0006 J	0.00085 J
Bromochloromethane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Bromodichloromethane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Bromoform	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Bromomethane	--	--	--	MG/KG	0.0023 U	0.0024 U	0.0023 U	0.0025 U
Carbon Disulfide	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Chloroethane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Chloroform	0.37	49	0.37	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Chloromethane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-12	RXSB-12	RXSB-13	RXSB-13
				Sample Date:	07/06/2021	07/06/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	10 - 12	14 - 16	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Cyclohexane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.003
Dibromochloromethane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Ethylbenzene	1	41	1	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.00026 J
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
m,p-Xylene	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0018
Methyl Acetate	--	--	--	MG/KG	0.0058 U	0.006 U	0.0057 U	0.0062 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0058 U	0.006 U	0.0057 U	0.0062 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0058 U	0.006 U	0.0057 U	0.0062 U
Methylcyclohexane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0041
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0023 U	0.0024 U	0.0023 U	0.0025 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0014
Sec-Butylbenzene	11	100	11	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Styrene	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.0012 U	0.0012 U	0.00044 J	0.00074 J
Toluene	0.7	100	0.7	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.00093 J
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Xylenes	**0.26**	100	1.6	MG/KG	0.0023 U	0.0024 U	0.0023 U	0.0032

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-13	RXSB-13	RXSB-13	RXSB-14
				Sample Date:	07/07/2021	07/07/2021	07/07/2021	07/08/2021
				Sample Depth (ft bls):	10 - 12	14 - 16	23 - 25	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 UJ
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.0011 U	0.0012 U	0.0012 J+	0.0011 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 UJ
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.0011 U	0.0012 U	0.0019 J+	0.0011 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
2-Hexanone	--	--	--	MG/KG	0.0056 U	0.0062 U	0.0043 U	0.0055 U
Acetone	**0.05**	100	0.05	MG/KG	0.0067 U	0.0074 U	0.013 J+	0.0067
Benzene	**0.06**	4.8	0.06	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Bromochloromethane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Bromodichloromethane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Bromoform	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Bromomethane	--	--	--	MG/KG	0.0022 U	0.0025 U	0.0017 U	0.0022 U
Carbon Disulfide	--	--	--	MG/KG	0.0011 U	0.0012 U	0.001 J+	0.0011 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Chloroethane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Chloroform	0.37	49	0.37	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Chloromethane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-13	RXSB-13	RXSB-13	RXSB-14
				Sample Date:	07/07/2021	07/07/2021	07/07/2021	07/08/2021
				Sample Depth (ft bls):	10 - 12	14 - 16	23 - 25	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Cyclohexane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Dibromochloromethane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Ethylbenzene	1	41	1	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
m,p-Xylene	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Methyl Acetate	--	--	--	MG/KG	0.0056 U	0.0062 U	0.0043 U	0.0055 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.0056 U	0.0062 U	0.0043 U	0.0055 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.0056 U	0.0062 U	0.0043 U	0.0055 U
Methylcyclohexane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.14 J+	0.0011 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0022 U	0.0025 U	0.0017 U	0.0022 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0011 U	0.0012 U	0.05 J+	0.0011 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Sec-Butylbenzene	11	100	11	MG/KG	0.0011 U	0.0012 U	0.016 J+	0.0011 U
Styrene	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0011 U	0.0012 U	0.00054 J	0.0011 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Toluene	0.7	100	0.7	MG/KG	0.0011 U	0.0012 U	0.00027 J	0.0011 UJ
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0011 U	0.0012 U	0.00086 U	0.0011 U
Xylenes	**0.26**	100	1.6	MG/KG	0.0022 U	0.0025 U	0.0017 U	0.0022 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-14	RXSB-14	RXSB-14	RXSB-14
				Sample Date:	07/08/2021	07/08/2021	07/08/2021	07/08/2021
				Sample Depth (ft bls):	4 - 6	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,1,1-Trichloroethane (TCA)	0.68	100	0.68	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,1,2,2-Tetrachloroethane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,1,2-Trichloroethane	--	--	--	MG/KG	0.0012 UJ	0.0011 UJ	0.0012 UJ	0.0012 UJ
1,1-Dichloroethane	0.27	26	0.27	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,1-Dichloroethene	0.33	100	0.33	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,2,3-Trichlorobenzene	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,2,4-Trichlorobenzene	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,2,4-Trimethylbenzene	**3.6**	52	3.6	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,2-Dibromo-3-Chloropropane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,2-Dibromoethane (Ethylene Dibromide)	--	--	--	MG/KG	0.0012 UJ	0.0011 UJ	0.0012 UJ	0.0012 UJ
1,2-Dichlorobenzene	1.1	100	1.1	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,2-Dichloroethane	0.02	3.1	0.02	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,2-Dichloropropane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	52	8.4	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,3-Dichlorobenzene	2.4	49	2.4	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
1,4-Dichlorobenzene	1.8	13	1.8	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
2-Hexanone	--	--	--	MG/KG	0.006 U	0.0057 U	0.0058 U	0.0059 U
Acetone	**0.05**	100	0.05	MG/KG	0.0072 U	0.0068 U	0.007 U	0.0071 U
Benzene	**0.06**	4.8	0.06	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Bromochloromethane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Bromodichloromethane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Bromoform	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Bromomethane	--	--	--	MG/KG	0.0024 U	0.0023 U	0.0023 U	0.0024 U
Carbon Disulfide	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Carbon Tetrachloride	0.76	2.4	0.76	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Chlorobenzene	1.1	100	1.1	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Chloroethane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Chloroform	0.37	49	0.37	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Chloromethane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Cis-1,2-Dichloroethylene	0.25	100	0.25	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U

Table 4. Summary of Volatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-14	RXSB-14	RXSB-14	RXSB-14
				Sample Date:	07/08/2021	07/08/2021	07/08/2021	07/08/2021
				Sample Depth (ft bls):	4 - 6	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Cis-1,3-Dichloropropene	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Cyclohexane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Dibromochloromethane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Dichlorodifluoromethane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Ethylbenzene	1	41	1	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Isopropylbenzene (Cumene)	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
m,p-Xylene	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Methyl Acetate	--	--	--	MG/KG	0.006 U	0.0057 U	0.0058 U	0.0059 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	MG/KG	0.006 U	0.0057 U	0.0058 U	0.0059 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	--	--	MG/KG	0.006 U	0.0057 U	0.0058 U	0.0059 U
Methylcyclohexane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Methylene Chloride	**0.05**	100	0.05	MG/KG	0.0024 U	0.0023 U	0.0023 U	0.0024 U
N-Butylbenzene	**12**	100	12	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
N-Propylbenzene	**3.9**	100	3.9	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
O-Xylene (1,2-Dimethylbenzene)	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Sec-Butylbenzene	11	100	11	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Styrene	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
T-Butylbenzene	5.9	100	5.9	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Tert-Butyl Methyl Ether	0.93	100	0.93	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Tetrachloroethylene (PCE)	1.3	19	1.3	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Toluene	0.7	100	0.7	MG/KG	0.0012 UJ	0.0011 UJ	0.0012 UJ	0.0012 UJ
Trans-1,2-Dichloroethene	0.19	100	0.19	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Trans-1,3-Dichloropropene	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Trichloroethylene (TCE)	0.47	21	0.47	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Trichlorofluoromethane	--	--	--	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Vinyl Chloride	0.02	0.9	0.02	MG/KG	0.0012 U	0.0011 U	0.0012 U	0.0012 U
Xylenes	**0.26**	100	1.6	MG/KG	0.0024 U	0.0023 U	0.0023 U	0.0024 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-01	RXSB-01	RXSB-01	RXSB-01
				Sample Date:	06/28/2021	06/28/2021	06/28/2021	06/28/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.036 U	0.035 U	0.035 U	0.036 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.29 U	0.28 U	0.28 U	0.29 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U
2-Chloronaphthalene	--	--	--	MG/KG	0.36 U	0.35 U	0.018 J	0.36 U
2-Chlorophenol	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
2-Methylnaphthalene	--	--	--	MG/KG	0.079 J	0.014 J	0.13 J	0.36 U
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
2-Nitroaniline	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
2-Nitrophenol	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
3-Nitroaniline	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.29 U	0.28 U	0.28 U	0.29 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
4-Chloroaniline	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
4-Nitroaniline	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
4-Nitrophenol	--	--	--	MG/KG	0.73 U	0.71 U	0.71 U	0.73 U
Acenaphthene	20	100	98	MG/KG	0.77	0.018 J	0.45	0.36 U
Acenaphthylene	100	100	107	MG/KG	0.26 J	0.066 J	0.24 J	0.36 U
Acetophenone	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Anthracene	100	100	1000	MG/KG	2	0.082 J	1.1	0.36 U
Atrazine	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-01	RXSB-01	RXSB-01	RXSB-01
			Sample Date:		06/28/2021	06/28/2021	06/28/2021	06/28/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	**4.7**	0.36	**2.8**	0.036 U
Benzo(A)Pyrene	**1**	1	22	MG/KG	**5 J**	0.45 J	**2.8 J**	0.036 U
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	**5.6**	0.47	**3.4**	0.036 U
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	2.5	0.25 J	1.2	0.36 U
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	**2.4**	0.18	**1.1**	0.036 U
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.033 J	0.35 U	0.045 J	0.36 U
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.036 U	0.035 U	0.035 U	0.036 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Caprolactam	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Carbazole	--	--	--	MG/KG	1	0.022 J	0.36	0.36 U
Chrysene	**1**	3.9	1	MG/KG	**4.4**	0.39	**2.7**	0.36 U
Cresols, M & P	0.33	100	0.33	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	**0.68**	0.077	**0.36**	0.036 U
Dibenzofuran	7	59	210	MG/KG	0.33 J	0.013 J	0.27 J	0.36 U
Diethyl Phthalate	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Dimethyl Phthalate	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Di-N-Octylphthalate	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Fluoranthene	100	100	1000	MG/KG	9.8	0.55	5.2	0.36 U
Fluorene	30	100	386	MG/KG	0.78	0.02 J	0.46	0.36 U
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.036 U	0.035 U	0.035 U	0.036 U
Hexachlorobutadiene	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Hexachloroethane	--	--	--	MG/KG	0.036 U	0.035 U	0.035 U	0.036 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	**2.7**	0.24	**1.4**	0.036 U
Isophorone	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
Naphthalene	12	100	12	MG/KG	0.2 J	0.034 J	0.25 J	0.36 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-01	RXSB-01	RXSB-01	RXSB-01
				Sample Date:	06/28/2021	06/28/2021	06/28/2021	06/28/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.036 U	0.035 U	0.035 U	0.036 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.036 U	0.035 U	0.035 U	0.036 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.29 U	0.28 U	0.28 U	0.29 U
Phenanthrene	100	100	1000	MG/KG	7.6	0.3 J	4.6	0.36 U
Phenol	0.33	100	0.33	MG/KG	0.36 U	0.35 U	0.35 U	0.36 U
Pyrene	100	100	1000	MG/KG	8	0.61	5	0.36 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-02	RXSB-02	RXSB-02	RXSB-03
			Sample Date:		06/30/2021	06/30/2021	06/30/2021	06/30/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.037 U	0.035 U	0.034 U	0.037 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.15 U	0.14 U	0.14 U	0.15 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.15 U	0.14 U	0.14 U	0.15 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.3 U	0.28 U	0.28 U	0.3 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.075 U	0.071 U	0.069 U	0.075 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.075 U	0.071 U	0.069 U	0.075 U
2-Chloronaphthalene	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
2-Chlorophenol	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
2-Methylnaphthalene	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
2-Nitroaniline	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
2-Nitrophenol	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.15 U	0.14 U	0.14 U	0.15 U
3-Nitroaniline	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.3 U	0.28 U	0.28 U	0.3 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
4-Chloroaniline	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
4-Nitroaniline	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
4-Nitrophenol	--	--	--	MG/KG	0.75 U	0.71 U	0.69 U	0.75 U
Acenaphthene	20	100	98	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Acenaphthylene	100	100	107	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Acetophenone	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Anthracene	100	100	1000	MG/KG	0.37 U	0.35 U	0.34 U	0.014 J
Atrazine	--	--	--	MG/KG	0.15 U	0.14 U	0.14 U	0.15 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-02	RXSB-02	RXSB-02	RXSB-03
			Sample Date:		06/30/2021	06/30/2021	06/30/2021	06/30/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.044	0.04	0.034 U	0.058
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.034 J	0.046	0.034 U	0.059
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	0.05	0.05	0.034 U	0.076
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.016 J	0.029 J	0.34 U	0.033 J
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.024 J	0.035 U	0.034 U	0.035 J
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.037 U	0.035 U	0.034 U	0.037 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Caprolactam	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Carbazole	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Chrysene	**1**	3.9	1	MG/KG	0.042 J	0.041 J	0.34 U	0.069 J
Cresols, M & P	0.33	100	0.33	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.037 U	0.035 U	0.034 U	0.037 U
Dibenzofuran	7	59	210	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Diethyl Phthalate	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Dimethyl Phthalate	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Di-N-Octylphthalate	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Fluoranthene	100	100	1000	MG/KG	0.084 J	0.071 J	0.34 U	0.11 J
Fluorene	30	100	386	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.037 U	0.035 U	0.034 U	0.037 U
Hexachlorobutadiene	--	--	--	MG/KG	0.075 U	0.071 U	0.069 U	0.075 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Hexachloroethane	--	--	--	MG/KG	0.037 U	0.035 U	0.034 U	0.037 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	0.037 U	0.029 J	0.034 U	0.037 U
Isophorone	--	--	--	MG/KG	0.15 U	0.14 U	0.14 U	0.15 U
Naphthalene	12	100	12	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-02	RXSB-02	RXSB-02	RXSB-03
				Sample Date:	06/30/2021	06/30/2021	06/30/2021	06/30/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.037 U	0.035 U	0.034 U	0.037 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.037 U	0.035 U	0.034 U	0.037 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.3 U	0.28 U	0.28 U	0.3 U
Phenanthrene	100	100	1000	MG/KG	0.035 J	0.033 J	0.34 U	0.056 J
Phenol	0.33	100	0.33	MG/KG	0.37 U	0.35 U	0.34 U	0.37 U
Pyrene	100	100	1000	MG/KG	0.071 J	0.062 J	0.34 U	0.098 J

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-03	RXSB-03	RXSB-03	RXSB-03
				Sample Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	14 - 16	23 - 25
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.036 U	0.037 U	0.035 U	0.038 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.15 U	0.15 U	0.14 U	0.15 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.15 U	0.15 U	0.14 U	0.15 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.29 U	0.3 U	0.28 U	0.31 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.074 U	0.075 U	0.071 U	0.077 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.074 U	0.075 U	0.071 U	0.077 U
2-Chloronaphthalene	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
2-Chlorophenol	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
2-Methylnaphthalene	--	--	--	MG/KG	0.011 J	0.37 U	0.35 U	0.38 U
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
2-Nitroaniline	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
2-Nitrophenol	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.15 U	0.15 U	0.14 U	0.15 U
3-Nitroaniline	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.29 U	0.3 U	0.28 U	0.31 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
4-Chloroaniline	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
4-Nitroaniline	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
4-Nitrophenol	--	--	--	MG/KG	0.74 U	0.75 U	0.71 U	0.77 U
Acenaphthene	20	100	98	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Acenaphthylene	100	100	107	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Acetophenone	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Anthracene	100	100	1000	MG/KG	0.029 J	0.025 J	0.35 U	0.38 U
Atrazine	--	--	--	MG/KG	0.15 U	0.15 U	0.14 U	0.15 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-03	RXSB-03	RXSB-03	RXSB-03
			Sample Date:		07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Depth (ft bls):		4 - 6	10 - 12	14 - 16	23 - 25
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.16	0.087	0.035 U	0.038 U
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.14	0.1	0.035 U	0.038 U
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	0.18	0.13	0.035 U	0.038 U
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.092 J	0.07 J	0.35 U	0.38 U
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.097	0.053	0.035 U	0.038 U
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.036 U	0.037 U	0.035 U	0.038 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Caprolactam	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Carbazole	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Chrysene	**1**	3.9	1	MG/KG	0.18 J	0.11 J	0.35 U	0.38 U
Cresols, M & P	0.33	100	0.33	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.036 U	0.037 U	0.035 U	0.038 U
Dibenzofuran	7	59	210	MG/KG	0.008 J	0.37 U	0.35 U	0.38 U
Diethyl Phthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Dimethyl Phthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Di-N-Octylphthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Fluoranthene	100	100	1000	MG/KG	0.27 J	0.17 J	0.35 U	0.38 U
Fluorene	30	100	386	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.036 U	0.037 U	0.035 U	0.038 U
Hexachlorobutadiene	--	--	--	MG/KG	0.074 U	0.075 U	0.071 U	0.077 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Hexachloroethane	--	--	--	MG/KG	0.036 U	0.037 U	0.035 U	0.038 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	0.12	0.073	0.035 U	0.038 U
Isophorone	--	--	--	MG/KG	0.15 U	0.15 U	0.14 U	0.15 U
Naphthalene	12	100	12	MG/KG	0.056 J	0.37 U	0.35 U	0.38 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-03	RXSB-03	RXSB-03	RXSB-03
				Sample Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	14 - 16	23 - 25
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.036 U	0.037 U	0.035 U	0.038 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.036 U	0.037 U	0.035 U	0.038 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.29 U	0.3 U	0.28 U	0.31 U
Phenanthrene	100	100	1000	MG/KG	0.17 J	0.092 J	0.35 U	0.38 U
Phenol	0.33	100	0.33	MG/KG	0.36 U	0.37 U	0.35 U	0.38 U
Pyrene	100	100	1000	MG/KG	0.27 J	0.14 J	0.35 U	0.38 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-04	RXSB-04	RXSB-04	RXSB-04
			Sample Date:		07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.038 U	0.037 U	0.037 U	0.035 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.15 U	0.15 U	0.15 U	0.14 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.15 U	0.15 U	0.15 U	0.14 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.31 U	0.3 U	0.29 U	0.28 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.077 U	0.075 U	0.074 U	0.071 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.077 U	0.075 U	0.074 U	0.071 U
2-Chloronaphthalene	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
2-Chlorophenol	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
2-Methylnaphthalene	--	--	--	MG/KG	0.38 U	0.08 J	0.045 J	0.35 U
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
2-Nitroaniline	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
2-Nitrophenol	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.15 U	0.15 U	0.15 U	0.14 U
3-Nitroaniline	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.31 U	0.3 U	0.29 U	0.28 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
4-Chloroaniline	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
4-Nitroaniline	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
4-Nitrophenol	--	--	--	MG/KG	0.77 U	0.75 U	0.74 U	0.71 U
Acenaphthene	20	100	98	MG/KG	0.38 U	0.11 J	0.021 J	0.35 U
Acenaphthylene	100	100	107	MG/KG	0.038 J	0.091 J	0.11 J	0.35 U
Acetophenone	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Anthracene	100	100	1000	MG/KG	0.032 J	0.37	0.12 J	0.35 U
Atrazine	--	--	--	MG/KG	0.15 U	0.15 U	0.15 U	0.14 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-04	RXSB-04	RXSB-04	RXSB-04
			Sample Date:		07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.14	0.94	0.65	0.035 U
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.27	**1.1**	0.95	0.035 U
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	0.32	**1.5**	**1.3**	0.035 U
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.25 J	0.72	0.61	0.35 U
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.14	0.53	0.51	0.035 U
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.38 U	0.025 J	0.019 J	0.35 U
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.038 U	0.037 U	0.037 U	0.035 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.38 U	0.37 U	0.026 J	0.35 U
Caprolactam	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Carbazole	--	--	--	MG/KG	0.38 U	0.11 J	0.051 J	0.35 U
Chrysene	**1**	3.9	1	MG/KG	0.18 J	0.99	0.7	0.35 U
Cresols, M & P	0.33	100	0.33	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.034 J	0.18	0.17	0.035 U
Dibenzofuran	7	59	210	MG/KG	0.38 U	0.11 J	0.055 J	0.35 U
Diethyl Phthalate	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Dimethyl Phthalate	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Di-N-Octylphthalate	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Fluoranthene	100	100	1000	MG/KG	0.15 J	1.8	0.92	0.35 U
Fluorene	30	100	386	MG/KG	0.38 U	0.12 J	0.031 J	0.35 U
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.038 U	0.037 U	0.037 U	0.035 U
Hexachlorobutadiene	--	--	--	MG/KG	0.077 U	0.075 U	0.074 U	0.071 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Hexachloroethane	--	--	--	MG/KG	0.038 U	0.037 U	0.037 U	0.035 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	0.27	**0.95**	**0.65**	0.035 U
Isophorone	--	--	--	MG/KG	0.15 U	0.15 U	0.15 U	0.14 U
Naphthalene	12	100	12	MG/KG	0.023 J	0.18 J	0.13 J	0.35 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-04	RXSB-04	RXSB-04	RXSB-04
				Sample Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.038 U	0.037 U	0.037 U	0.035 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.038 U	0.037 U	0.037 U	0.035 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.31 U	0.17 J	0.27 J	0.28 U
Phenanthrene	100	100	1000	MG/KG	0.059 J	1.4	0.5	0.35 U
Phenol	0.33	100	0.33	MG/KG	0.38 U	0.37 U	0.37 U	0.35 U
Pyrene	100	100	1000	MG/KG	0.16 J	1.5	0.86	0.35 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-04	RXSB-05	RXSB-05	RXSB-06
				Sample Date:	07/01/2021	07/06/2021	07/06/2021	07/07/2021
				Sample Depth (ft bls):	23 - 25	0 - 2	4 - 6	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.038 U	0.042 U	0.036 U	0.036 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.15 U	0.17 U	0.14 U	0.15 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.15 U	0.17 U	0.14 U	0.15 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.3 U	0.34 U	0.29 U	0.29 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.076 U	0.085 U	0.073 U	0.073 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.076 U	0.085 U	0.073 U	0.073 U
2-Chloronaphthalene	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
2-Chlorophenol	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
2-Methylnaphthalene	--	--	--	MG/KG	0.38 U	7.9	0.36 U	0.037 J
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
2-Nitroaniline	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
2-Nitrophenol	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.15 U	0.17 U	0.14 U	0.15 U
3-Nitroaniline	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.3 U	0.34 U	0.29 U	0.29 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
4-Chloroaniline	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
4-Nitroaniline	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
4-Nitrophenol	--	--	--	MG/KG	0.76 U	0.85 U	0.73 U	0.73 U
Acenaphthene	20	100	98	MG/KG	0.38 U	0.22 J	0.36 U	0.017 J
Acenaphthylene	100	100	107	MG/KG	0.38 U	0.23 J	0.36 U	0.16 J
Acetophenone	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Anthracene	100	100	1000	MG/KG	0.38 U	0.62	0.36 U	0.091 J
Atrazine	--	--	--	MG/KG	0.15 U	0.17 U	0.14 U	0.15 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-04	RXSB-05	RXSB-05	RXSB-06
				Sample Date:	07/01/2021	07/06/2021	07/06/2021	07/07/2021
				Sample Depth (ft bls):	23 - 25	0 - 2	4 - 6	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.038 U	1	0.036 U	0.68
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.038 U	**1.1**	0.036 U	0.83
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	0.038 U	**1.3**	0.036 U	1
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.38 U	0.74	0.36 U	0.46
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.038 U	0.47	0.036 U	0.55
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.38 U	0.42 U	0.038 J	0.36 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.38 U	0.14 J	0.36 U	0.36 U
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.038 U	0.042 U	0.036 U	0.036 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Caprolactam	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Carbazole	--	--	--	MG/KG	0.38 U	0.21 J	0.36 U	0.039 J
Chrysene	**1**	3.9	1	MG/KG	0.38 U	1	0.36 U	0.71
Cresols, M & P	0.33	100	0.33	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.038 U	0.21	0.036 U	0.12
Dibenzofuran	7	59	210	MG/KG	0.38 U	0.26 J	0.36 U	0.022 J
Diethyl Phthalate	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Dimethyl Phthalate	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.38 U	0.023 J	0.36 U	0.032 J
Di-N-Octylphthalate	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Fluoranthene	100	100	1000	MG/KG	0.38 U	2.5	0.36 U	1.2
Fluorene	30	100	386	MG/KG	0.38 U	0.47	0.36 U	0.023 J
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.038 U	0.042 U	0.036 U	0.036 U
Hexachlorobutadiene	--	--	--	MG/KG	0.076 U	0.085 U	0.073 U	0.073 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Hexachloroethane	--	--	--	MG/KG	0.038 U	0.042 U	0.036 U	0.036 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	0.038 U	**0.71**	0.036 U	0.5
Isophorone	--	--	--	MG/KG	0.15 U	0.17 U	0.14 U	0.15 U
Naphthalene	12	100	12	MG/KG	0.38 U	5.7	0.36 U	0.05 J

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-04	RXSB-05	RXSB-05	RXSB-06
			Sample Date:		07/01/2021	07/06/2021	07/06/2021	07/07/2021
			Sample Depth (ft bls):		23 - 25	0 - 2	4 - 6	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.038 U	0.042 U	0.036 U	0.036 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.038 U	0.042 U	0.036 U	0.036 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.3 U	0.34 U	0.29 U	0.29 U
Phenanthrene	100	100	1000	MG/KG	0.38 U	2.4	0.36 U	0.36
Phenol	0.33	100	0.33	MG/KG	0.38 U	0.42 U	0.36 U	0.36 U
Pyrene	100	100	1000	MG/KG	0.38 U	2.2	0.36 U	1

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-06	RXSB-06	RXSB-06	RXSB-06
			Sample Date:		07/07/2021	07/07/2021	07/07/2021	07/07/2021
			Sample Depth (ft bls):		4 - 6	10 - 12	14 - 16	23 - 25
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.035 U	0.034 U	0.035 U	0.04 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.16 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.16 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.28 U	0.28 U	0.28 U	0.32 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U
2-Chloronaphthalene	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
2-Chlorophenol	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
2-Methylnaphthalene	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	1.9
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
2-Nitroaniline	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
2-Nitrophenol	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.16 U
3-Nitroaniline	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.28 U	0.28 U	0.28 U	0.32 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
4-Chloroaniline	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
4-Nitroaniline	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
4-Nitrophenol	--	--	--	MG/KG	0.72 U	0.7 U	0.71 U	0.81 U
Acenaphthene	20	100	98	MG/KG	0.026 J	0.34 U	0.35 U	0.4 U
Acenaphthylene	100	100	107	MG/KG	0.091 J	0.34 U	0.35 U	0.4 U
Acetophenone	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Anthracene	100	100	1000	MG/KG	0.096 J	0.34 U	0.35 U	0.4 U
Atrazine	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.16 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-06	RXSB-06	RXSB-06	RXSB-06
				Sample Date:	07/07/2021	07/07/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	14 - 16	23 - 25
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.49	0.034 U	0.035 U	0.04 U
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.55	0.034 U	0.035 U	0.04 U
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	0.65	0.034 U	0.035 U	0.04 U
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.35	0.34 U	0.35 U	0.4 U
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.28	0.034 U	0.035 U	0.04 U
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.021 J
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.035 U	0.034 U	0.035 U	0.04 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Caprolactam	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Carbazole	--	--	--	MG/KG	0.044 J	0.34 U	0.35 U	0.4 U
Chrysene	**1**	3.9	1	MG/KG	0.46	0.34 U	0.35 U	0.4 U
Cresols, M & P	0.33	100	0.33	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.097	0.034 U	0.035 U	0.04 U
Dibenzofuran	7	59	210	MG/KG	0.016 J	0.34 U	0.35 U	0.4 U
Diethyl Phthalate	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Dimethyl Phthalate	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.02 J
Di-N-Octylphthalate	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Fluoranthene	100	100	1000	MG/KG	0.87	0.34 U	0.35 U	0.4 U
Fluorene	30	100	386	MG/KG	0.031 J	0.34 U	0.35 U	0.4 U
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.035 U	0.034 U	0.035 U	0.04 U
Hexachlorobutadiene	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Hexachloroethane	--	--	--	MG/KG	0.035 U	0.034 U	0.035 U	0.04 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	0.37	0.034 U	0.035 U	0.04 U
Isophorone	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.16 U
Naphthalene	12	100	12	MG/KG	0.019 J	0.34 U	0.35 U	0.24 J

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-06	RXSB-06	RXSB-06	RXSB-06
			Sample Date:		07/07/2021	07/07/2021	07/07/2021	07/07/2021
			Sample Depth (ft bls):		4 - 6	10 - 12	14 - 16	23 - 25
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.035 U	0.034 U	0.035 U	0.04 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.035 U	0.034 U	0.035 U	0.04 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.28 U	0.28 U	0.28 U	0.32 U
Phenanthrene	100	100	1000	MG/KG	0.4	0.34 U	0.35 U	0.017 J
Phenol	0.33	100	0.33	MG/KG	0.35 U	0.34 U	0.35 U	0.4 U
Pyrene	100	100	1000	MG/KG	0.73	0.34 U	0.35 U	0.4 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-07	RXSB-07	RXSB-07
				Sample Date:	07/08/2021	07/09/2021	07/09/2021	07/09/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.036 U	0.036 U	0.034 U	0.035 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.15 U	0.15 U	0.14 U	0.14 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.15 U	0.15 U	0.14 U	0.14 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.29 U	0.29 U	0.27 U	0.28 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.074 U	0.074 U	0.069 U	0.071 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.074 U	0.074 U	0.069 U	0.071 U
2-Chloronaphthalene	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
2-Chlorophenol	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
2-Methylnaphthalene	--	--	--	MG/KG	0.036 J	0.36 U	0.34 U	0.35 U
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
2-Nitroaniline	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
2-Nitrophenol	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.15 U	0.15 U	0.14 U	0.14 U
3-Nitroaniline	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.29 U	0.29 U	0.27 U	0.28 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
4-Chloroaniline	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
4-Nitroaniline	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
4-Nitrophenol	--	--	--	MG/KG	0.74 U	0.74 U	0.69 U	0.71 U
Acenaphthene	20	100	98	MG/KG	0.039 J	0.36 U	0.34 U	0.35 U
Acenaphthylene	100	100	107	MG/KG	0.1 J	0.36 U	0.34 U	0.35 U
Acetophenone	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Anthracene	100	100	1000	MG/KG	0.12 J	0.012 J	0.34 U	0.35 U
Atrazine	--	--	--	MG/KG	0.15 U	0.15 U	0.14 U	0.14 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-07	RXSB-07	RXSB-07
				Sample Date:	07/08/2021	07/09/2021	07/09/2021	07/09/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.58 J	0.075	0.034 U	0.035 U
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.64 J	0.082	0.034 U	0.035 U
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	0.83 J	0.11	0.034 U	0.035 U
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.41 J	0.051 J	0.34 U	0.35 U
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.28 J	0.042	0.034 U	0.035 U
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.011 J	0.36 U	0.34 U	0.35 U
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.036 U	0.036 U	0.034 U	0.035 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.03 J	0.36 U	0.34 U	0.35 U
Caprolactam	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Carbazole	--	--	--	MG/KG	0.033 J	0.36 U	0.34 U	0.35 U
Chrysene	**1**	3.9	1	MG/KG	0.59 J	0.077 J	0.34 U	0.35 U
Cresols, M & P	0.33	100	0.33	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.13 J	0.016 J	0.034 U	0.035 U
Dibenzofuran	7	59	210	MG/KG	0.021 J	0.36 U	0.34 U	0.35 U
Diethyl Phthalate	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Dimethyl Phthalate	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.04 J	0.027 J	0.34 U	0.35 U
Di-N-Octylphthalate	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Fluoranthene	100	100	1000	MG/KG	0.94 J	0.14 J	0.34 U	0.35 U
Fluorene	30	100	386	MG/KG	0.031 J	0.36 U	0.34 U	0.35 U
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.036 U	0.036 U	0.034 U	0.035 U
Hexachlorobutadiene	--	--	--	MG/KG	0.074 U	0.074 U	0.069 U	0.071 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Hexachloroethane	--	--	--	MG/KG	0.036 U	0.036 U	0.034 U	0.035 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	0.42 J	0.05	0.034 U	0.035 U
Isophorone	--	--	--	MG/KG	0.15 U	0.15 U	0.14 U	0.14 U
Naphthalene	12	100	12	MG/KG	0.056 J	0.36 U	0.34 U	0.35 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-07	RXSB-07	RXSB-07
				Sample Date:	07/08/2021	07/09/2021	07/09/2021	07/09/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.036 U	0.036 U	0.034 U	0.035 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.036 U	0.036 U	0.034 U	0.035 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.29 U	0.29 U	0.27 U	0.28 U
Phenanthrene	100	100	1000	MG/KG	0.42 J	0.078 J	0.34 U	0.35 U
Phenol	0.33	100	0.33	MG/KG	0.36 U	0.36 U	0.34 U	0.35 U
Pyrene	100	100	1000	MG/KG	1.1 J	0.14 J	0.34 U	0.35 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-08	RXSB-08	RXSB-08
				Sample Date:	07/09/2021	06/28/2021	06/28/2021	06/28/2021
				Sample Depth (ft bls):	23 - 25	0 - 2	4 - 6	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	FD
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.039 U	0.037 U	0.036 U	0.036 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.16 U	0.15 U	0.15 U	0.15 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.16 U	0.15 U	0.15 U	0.15 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.32 U	0.3 U	0.29 U	0.29 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.08 U	0.075 U	0.074 U	0.074 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.08 U	0.075 U	0.074 U	0.074 U
2-Chloronaphthalene	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
2-Chlorophenol	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
2-Methylnaphthalene	--	--	--	MG/KG	0.03 J	0.095 J	0.03 J	0.23 J
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
2-Nitroaniline	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
2-Nitrophenol	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.16 U	0.15 U	0.15 U	0.15 U
3-Nitroaniline	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.32 U	0.3 U	0.29 U	0.29 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
4-Chloroaniline	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
4-Nitroaniline	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
4-Nitrophenol	--	--	--	MG/KG	0.8 U	0.75 U	0.74 U	0.74 U
Acenaphthene	20	100	98	MG/KG	0.39 U	0.22 J	0.074 J	0.11 J
Acenaphthylene	100	100	107	MG/KG	0.39 U	0.11 J	0.1 J	0.068 J
Acetophenone	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Anthracene	100	100	1000	MG/KG	0.39 U	0.69	0.24 J	0.17 J
Atrazine	--	--	--	MG/KG	0.16 U	0.15 U	0.15 U	0.15 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-07	RXSB-08	RXSB-08	RXSB-08
			Sample Date:		07/09/2021	06/28/2021	06/28/2021	06/28/2021
			Sample Depth (ft bls):		23 - 25	0 - 2	4 - 6	4 - 6
			Normal Sample or Field Duplicate:		N	N	N	FD
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.039 U	**1.8**	0.96 J	0.51 J
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.039 U	**2 J**	1 J	0.64 J
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	0.039 U	**2.4**	**1.2 J**	0.69 J
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.39 U	1.4	0.65	0.33 J
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.039 U	**0.81**	0.38	0.25
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.39 U	0.05 J	0.36 U	0.36 U
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.039 U	0.037 U	0.036 U	0.036 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Caprolactam	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Carbazole	--	--	--	MG/KG	0.39 U	0.24 J	0.098 J	0.068 J
Chrysene	**1**	3.9	1	MG/KG	0.39 U	**1.8**	0.93	0.54
Cresols, M & P	0.33	100	0.33	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.039 U	**0.35**	0.2	0.12
Dibenzofuran	7	59	210	MG/KG	0.39 U	0.15 J	0.063 J	0.13 J
Diethyl Phthalate	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Dimethyl Phthalate	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.035 J	0.37 U	0.36 U	0.36 U
Di-N-Octylphthalate	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Fluoranthene	100	100	1000	MG/KG	0.39 U	3.4	1.7	0.97
Fluorene	30	100	386	MG/KG	0.39 U	0.23 J	0.095 J	0.14 J
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.039 U	0.037 U	0.036 U	0.036 U
Hexachlorobutadiene	--	--	--	MG/KG	0.08 U	0.075 U	0.074 U	0.074 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Hexachloroethane	--	--	--	MG/KG	0.039 U	0.037 U	0.036 U	0.036 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	0.039 U	**1.4**	**0.68 J**	0.36 J
Isophorone	--	--	--	MG/KG	0.16 U	0.15 U	0.15 U	0.15 U
Naphthalene	12	100	12	MG/KG	0.39 U	0.33 J	0.077 J	0.76

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-07	RXSB-08	RXSB-08	RXSB-08
			Sample Date:		07/09/2021	06/28/2021	06/28/2021	06/28/2021
			Sample Depth (ft bls):		23 - 25	0 - 2	4 - 6	4 - 6
			Normal Sample or Field Duplicate:		N	N	N	FD
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.039 U	0.037 U	0.036 U	0.036 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.039 U	0.037 U	0.036 U	0.036 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.32 U	0.3 U	0.29 U	0.29 U
Phenanthrene	100	100	1000	MG/KG	0.39 U	2.7	1.3	0.83
Phenol	0.33	100	0.33	MG/KG	0.39 U	0.37 U	0.36 U	0.36 U
Pyrene	100	100	1000	MG/KG	0.39 U	3.6	1.7	0.93

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-09	RXSB-09	RXSB-09	RXSB-09
				Sample Date:	06/29/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.041 U	0.035 U	0.035 U	0.035 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.17 U	0.14 U	0.14 U	0.14 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.17 U	0.14 U	0.14 U	0.14 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.33 U	0.28 U	0.28 U	0.28 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.083 U	0.071 U	0.071 U	0.071 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.083 U	0.071 U	0.071 U	0.071 U
2-Chloronaphthalene	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
2-Chlorophenol	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
2-Methylnaphthalene	--	--	--	MG/KG	0.088 J	0.35 U	0.35 U	0.35 U
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
2-Nitroaniline	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
2-Nitrophenol	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.17 U	0.14 U	0.14 U	0.14 U
3-Nitroaniline	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.33 U	0.28 U	0.28 U	0.28 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
4-Chloroaniline	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
4-Nitroaniline	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
4-Nitrophenol	--	--	--	MG/KG	0.83 U	0.71 U	0.71 U	0.71 U
Acenaphthene	20	100	98	MG/KG	0.11 J	0.35 U	0.35 U	0.35 U
Acenaphthylene	100	100	107	MG/KG	0.04 J	0.35 U	0.35 U	0.35 U
Acetophenone	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Anthracene	100	100	1000	MG/KG	0.39 J	0.35 U	0.35 U	0.35 U
Atrazine	--	--	--	MG/KG	0.17 U	0.14 U	0.14 U	0.14 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-09	RXSB-09	RXSB-09	RXSB-09
				Sample Date:	06/29/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	**1.2**	0.043	0.039	0.013 J
Benzo(A)Pyrene	**1**	1	22	MG/KG	**1.5**	0.044	0.04	0.0098 J
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	**1.5**	0.054	0.055	0.014 J
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.74	0.021 J	0.024 J	0.02 J
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	**0.81**	0.023 J	0.025 J	0.035 U
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.034 J	0.35 U	0.35 U	0.35 U
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.041 U	0.035 U	0.035 U	0.035 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Caprolactam	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Carbazole	--	--	--	MG/KG	0.15 J	0.35 U	0.35 U	0.35 U
Chrysene	**1**	3.9	1	MG/KG	**1.2**	0.041 J	0.04 J	0.0085 J
Cresols, M & P	0.33	100	0.33	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.21	0.035 U	0.035 U	0.035 U
Dibenzofuran	7	59	210	MG/KG	0.13 J	0.35 U	0.35 U	0.35 U
Diethyl Phthalate	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Dimethyl Phthalate	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Di-N-Octylphthalate	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Fluoranthene	100	100	1000	MG/KG	2.5	0.061 J	0.063 J	0.35 U
Fluorene	30	100	386	MG/KG	0.12 J	0.35 U	0.35 U	0.35 U
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.041 U	0.035 U	0.035 U	0.035 U
Hexachlorobutadiene	--	--	--	MG/KG	0.083 U	0.071 U	0.071 U	0.071 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Hexachloroethane	--	--	--	MG/KG	0.041 U	0.035 U	0.035 U	0.035 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	**0.84**	0.026 J	0.029 J	0.035 U
Isophorone	--	--	--	MG/KG	0.17 U	0.14 U	0.14 U	0.14 U
Naphthalene	12	100	12	MG/KG	0.2 J	0.35 U	0.35 U	0.35 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-09	RXSB-09	RXSB-09	RXSB-09
			Sample Date:		06/29/2021	06/29/2021	06/29/2021	06/29/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.041 U	0.035 U	0.035 U	0.035 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.041 U	0.035 U	0.035 U	0.035 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.33 U	0.28 U	0.28 U	0.28 U
Phenanthrene	100	100	1000	MG/KG	1.9	0.034 J	0.04 J	0.35 U
Phenol	0.33	100	0.33	MG/KG	0.41 U	0.35 U	0.35 U	0.35 U
Pyrene	100	100	1000	MG/KG	2.1	0.066 J	0.06 J	0.01 J

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-10	RXSB-10	RXSB-10	RXSB-10
				Sample Date:	06/29/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.036 U	0.037 U	0.037 U	0.034 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.14 U	0.15 U	0.15 U	0.14 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.14 U	0.15 U	0.15 U	0.14 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.29 U	0.3 U	0.3 U	0.28 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.073 U	0.075 U	0.076 U	0.07 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.073 U	0.075 U	0.076 U	0.07 U
2-Chloronaphthalene	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
2-Chlorophenol	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
2-Methylnaphthalene	--	--	--	MG/KG	0.05 J	0.37 U	0.011 J	0.34 U
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
2-Nitroaniline	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
2-Nitrophenol	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.14 U	0.15 U	0.15 U	0.14 U
3-Nitroaniline	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.29 U	0.3 U	0.3 U	0.28 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
4-Chloroaniline	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
4-Nitroaniline	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
4-Nitrophenol	--	--	--	MG/KG	0.73 U	0.75 U	0.76 U	0.7 U
Acenaphthene	20	100	98	MG/KG	0.23 J	0.018 J	0.018 J	0.34 U
Acenaphthylene	100	100	107	MG/KG	0.018 J	0.049 J	0.037 J	0.34 U
Acetophenone	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Anthracene	100	100	1000	MG/KG	0.52	0.049 J	0.051 J	0.34 U
Atrazine	--	--	--	MG/KG	0.14 U	0.15 U	0.15 U	0.14 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-10	RXSB-10	RXSB-10	RXSB-10
			Sample Date:		06/29/2021	06/29/2021	06/29/2021	06/29/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.93	0.35	0.26	0.034 U
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.98	0.39	0.28	0.034 U
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	**1.2**	0.43	0.36	0.034 U
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.46	0.22 J	0.17 J	0.34 U
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.36	0.21	0.15	0.034 U
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.023 J	0.008 J	0.0066 J	0.34 U
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.036 U	0.037 U	0.037 U	0.034 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Caprolactam	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Carbazole	--	--	--	MG/KG	0.23 J	0.026 J	0.026 J	0.34 U
Chrysene	**1**	3.9	1	MG/KG	0.89	0.36 J	0.28 J	0.34 U
Cresols, M & P	0.33	100	0.33	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.14	0.055	0.041	0.034 U
Dibenzofuran	7	59	210	MG/KG	0.14 J	0.015 J	0.014 J	0.34 U
Diethyl Phthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Dimethyl Phthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Di-N-Octylphthalate	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Fluoranthene	100	100	1000	MG/KG	2.2	0.55	0.45	0.34 U
Fluorene	30	100	386	MG/KG	0.24 J	0.02 J	0.02 J	0.34 U
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.036 U	0.037 U	0.037 U	0.034 U
Hexachlorobutadiene	--	--	--	MG/KG	0.073 U	0.075 U	0.076 U	0.07 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Hexachloroethane	--	--	--	MG/KG	0.036 U	0.037 U	0.037 U	0.034 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	**0.52**	0.24	0.19	0.034 U
Isophorone	--	--	--	MG/KG	0.14 U	0.15 U	0.15 U	0.14 U
Naphthalene	12	100	12	MG/KG	0.17 J	0.013 J	0.022 J	0.34 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-10	RXSB-10	RXSB-10	RXSB-10
				Sample Date:	06/29/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.036 U	0.037 U	0.037 U	0.034 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.036 U	0.037 U	0.037 U	0.034 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.29 U	0.3 U	0.3 U	0.28 U
Phenanthrene	100	100	1000	MG/KG	1.9	0.36 J	0.29 J	0.34 U
Phenol	0.33	100	0.33	MG/KG	0.36 U	0.37 U	0.37 U	0.34 U
Pyrene	100	100	1000	MG/KG	1.7	0.53	0.43	0.34 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-11	RXSB-11	RXSB-12	RXSB-12
				Sample Date:	07/02/2021	07/02/2021	07/06/2021	07/06/2021
				Sample Depth (ft bls):	0 - 2	0 - 2	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.035 U	0.035 U	0.036 U	0.035 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.15 U	0.14 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.15 U	0.14 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.29 U	0.28 U	0.29 U	0.28 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U
2-Chloronaphthalene	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
2-Chlorophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
2-Methylnaphthalene	--	--	--	MG/KG	0.22 J	0.25 J	0.36 U	0.35 U
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
2-Nitroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
2-Nitrophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.14 U	0.14 U	0.15 U	0.14 U
3-Nitroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.29 U	0.28 U	0.29 U	0.28 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
4-Chloroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
4-Nitroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
4-Nitrophenol	--	--	--	MG/KG	0.72 U	0.72 U	0.74 U	0.71 U
Acenaphthene	20	100	98	MG/KG	0.048 J	0.075 J	0.016 J	0.013 J
Acenaphthylene	100	100	107	MG/KG	0.038 J	0.032 J	0.36 U	0.35 U
Acetophenone	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Anthracene	100	100	1000	MG/KG	0.15 J	0.19 J	0.053 J	0.06 J
Atrazine	--	--	--	MG/KG	0.14 U	0.14 U	0.15 U	0.14 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-11	RXSB-11	RXSB-12	RXSB-12
			Sample Date:		07/02/2021	07/02/2021	07/06/2021	07/06/2021
			Sample Depth (ft bls):		0 - 2	0 - 2	0 - 2	4 - 6
			Normal Sample or Field Duplicate:		N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.39	0.43	0.18	0.28
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.47	0.5	0.22 J	0.43 J
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	0.55	0.54	0.24	0.44
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.26 J	0.28 J	0.14 J	0.32 J
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.21	0.23	0.099	0.2
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.016 J	0.022 J	0.36 U	0.35 U
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.035 U	0.035 U	0.036 U	0.035 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.035 J	0.029 J	0.36 U	0.35 U
Caprolactam	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.071 J
Carbazole	--	--	--	MG/KG	0.055 J	0.055 J	0.36 U	0.35 U
Chrysene	**1**	3.9	1	MG/KG	0.41	0.47	0.19 J	0.32 J
Cresols, M & P	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.071	0.07	0.036 U	0.079
Dibenzofuran	7	59	210	MG/KG	0.046 J	0.055 J	0.36 U	0.014 J
Diethyl Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Dimethyl Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Di-N-Octylphthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Fluoranthene	100	100	1000	MG/KG	0.74	0.9	0.32 J	0.44
Fluorene	30	100	386	MG/KG	0.082 J	0.098 J	0.36 U	0.35 U
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.035 U	0.035 U	0.036 U	0.035 U
Hexachlorobutadiene	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Hexachloroethane	--	--	--	MG/KG	0.035 U	0.035 U	0.036 U	0.035 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	0.26	0.3	0.14 J	0.3
Isophorone	--	--	--	MG/KG	0.14 U	0.14 U	0.15 U	0.14 U
Naphthalene	12	100	12	MG/KG	0.32 J	0.39	0.36 U	0.039 J

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-11	RXSB-11	RXSB-12	RXSB-12
				Sample Date:	07/02/2021	07/02/2021	07/06/2021	07/06/2021
				Sample Depth (ft bls):	0 - 2	0 - 2	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.035 U	0.035 U	0.036 U	0.035 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.035 U	0.035 U	0.036 U	0.035 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.29 U	0.28 U	0.29 U	0.28 U
Phenanthrene	100	100	1000	MG/KG	0.61	0.84	0.21 J	0.28 J
Phenol	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.36 U	0.35 U
Pyrene	100	100	1000	MG/KG	0.67	0.88	0.34 J	0.53

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-12	RXSB-12	RXSB-13	RXSB-13
				Sample Date:	07/06/2021	07/06/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	10 - 12	14 - 16	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.035 U	0.035 U	0.036 U	0.036 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.031 J
2,4-Dinitrophenol	--	--	--	MG/KG	0.28 U	0.28 U	0.29 U	0.29 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.07 U	0.072 U	0.073 U	0.073 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.07 U	0.072 U	0.073 U	0.073 U
2-Chloronaphthalene	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
2-Chlorophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
2-Methylnaphthalene	--	--	--	MG/KG	0.35 U	0.35 U	0.024 J	0.51
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.36 U	0.023 J
2-Nitroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
2-Nitrophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
3-Nitroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.28 U	0.28 U	0.29 U	0.29 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
4-Chloroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.36 U	0.079 J
4-Nitroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
4-Nitrophenol	--	--	--	MG/KG	0.7 U	0.72 U	0.73 U	0.73 U
Acenaphthene	20	100	98	MG/KG	0.35 U	0.35 U	0.04 J	0.21 J
Acenaphthylene	100	100	107	MG/KG	0.35 U	0.35 U	0.074 J	0.77
Acetophenone	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
Anthracene	100	100	1000	MG/KG	0.35 U	0.35 U	0.13 J	0.8
Atrazine	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-12	RXSB-12	RXSB-13	RXSB-13
				Sample Date:	07/06/2021	07/06/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	10 - 12	14 - 16	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.035 U	0.035 U	0.53	**1.3**
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.035 U	0.035 U	0.59	**2.1**
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	0.035 U	0.035 U	0.76	**2.2**
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.35 U	0.35 U	0.34 J	1.2
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.035 U	0.035 U	0.3	**0.96**
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.35 U	0.35 U	0.0082 J	0.12 J
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.035 U	0.035 U	0.036 U	0.036 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.026 J	0.36 U
Caprolactam	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
Carbazole	--	--	--	MG/KG	0.35 U	0.35 U	0.053 J	0.55
Chrysene	**1**	3.9	1	MG/KG	0.35 U	0.35 U	0.54	**1.5**
Cresols, M & P	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.36 U	0.079 J
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.035 U	0.035 U	0.086	0.27
Dibenzofuran	7	59	210	MG/KG	0.35 U	0.35 U	0.033 J	0.53
Diethyl Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
Dimethyl Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.025 J	0.022 J
Di-N-Octylphthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
Fluoranthene	100	100	1000	MG/KG	0.35 U	0.35 U	0.97	3.6
Fluorene	30	100	386	MG/KG	0.35 U	0.35 U	0.044 J	0.78
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.035 U	0.035 U	0.036 U	0.036 U
Hexachlorobutadiene	--	--	--	MG/KG	0.07 U	0.072 U	0.073 U	0.073 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
Hexachloroethane	--	--	--	MG/KG	0.035 U	0.035 U	0.036 U	0.036 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	0.035 U	0.035 U	0.38	**1.4**
Isophorone	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
Naphthalene	12	100	12	MG/KG	0.35 U	0.35 U	0.073 J	3.2

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-12	RXSB-12	RXSB-13	RXSB-13
				Sample Date:	07/06/2021	07/06/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	10 - 12	14 - 16	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.035 U	0.035 U	0.036 U	0.036 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.035 U	0.035 U	0.036 U	0.036 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.35 U	0.35 U	0.36 U	0.36 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.28 U	0.28 U	0.29 U	0.29 U
Phenanthrene	100	100	1000	MG/KG	0.35 U	0.35 U	0.69	3.5
Phenol	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.36 U	0.055 J
Pyrene	100	100	1000	MG/KG	0.35 U	0.35 U	0.88	2.6

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-13	RXSB-13	RXSB-13	RXSB-14
			Sample Date:		07/07/2021	07/07/2021	07/07/2021	07/08/2021
			Sample Depth (ft bls):		10 - 12	14 - 16	23 - 25	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.035 U	0.035 U	0.038 U	0.035 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.15 U	0.14 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.15 U	0.14 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.28 U	0.28 U	0.3 U	0.28 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.071 U	0.071 U	0.077 U	0.071 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.071 U	0.071 U	0.077 U	0.071 U
2-Chloronaphthalene	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
2-Chlorophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
2-Methylnaphthalene	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.033 J
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
2-Nitroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
2-Nitrophenol	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.14 U	0.14 U	0.15 U	0.14 U
3-Nitroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.28 U	0.28 U	0.3 U	0.28 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
4-Chloroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
4-Nitroaniline	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
4-Nitrophenol	--	--	--	MG/KG	0.71 U	0.71 U	0.77 U	0.71 U
Acenaphthene	20	100	98	MG/KG	0.35 U	0.35 U	0.38 U	0.18 J
Acenaphthylene	100	100	107	MG/KG	0.35 U	0.35 U	0.38 U	0.027 J
Acetophenone	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Anthracene	100	100	1000	MG/KG	0.35 U	0.35 U	0.38 U	0.56
Atrazine	--	--	--	MG/KG	0.14 U	0.14 U	0.15 U	0.14 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-13	RXSB-13	RXSB-13	RXSB-14
			Sample Date:		07/07/2021	07/07/2021	07/07/2021	07/08/2021
			Sample Depth (ft bls):		10 - 12	14 - 16	23 - 25	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.035 U	0.035 U	0.038 U	**1.9**
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.035 U	0.035 U	0.038 U	**1.8**
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	0.035 U	0.035 U	0.011 J	**2.3**
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.35 U	0.35 U	0.38 U	0.99
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.035 U	0.035 U	0.038 U	0.8
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.014 J
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.035 U	0.035 U	0.038 U	0.035 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Caprolactam	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Carbazole	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.2 J
Chrysene	**1**	3.9	1	MG/KG	0.35 U	0.35 U	0.01 J	**1.6**
Cresols, M & P	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.035 U	0.035 U	0.038 U	**0.34**
Dibenzofuran	7	59	210	MG/KG	0.35 U	0.35 U	0.38 U	0.11 J
Diethyl Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Dimethyl Phthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.014 J	0.016 J	0.022 J	0.028 J
Di-N-Octylphthalate	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Fluoranthene	100	100	1000	MG/KG	0.35 U	0.35 U	0.023 J	3.6
Fluorene	30	100	386	MG/KG	0.35 U	0.35 U	0.38 U	0.16 J
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.035 U	0.035 U	0.038 U	0.035 U
Hexachlorobutadiene	--	--	--	MG/KG	0.071 U	0.071 U	0.077 U	0.071 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Hexachloroethane	--	--	--	MG/KG	0.035 U	0.035 U	0.038 U	0.035 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	0.035 U	0.035 U	0.038 U	**1.1**
Isophorone	--	--	--	MG/KG	0.14 U	0.14 U	0.15 U	0.14 U
Naphthalene	12	100	12	MG/KG	0.35 U	0.35 U	0.38 U	0.056 J

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-13	RXSB-13	RXSB-13	RXSB-14
				Sample Date:	07/07/2021	07/07/2021	07/07/2021	07/08/2021
				Sample Depth (ft bls):	10 - 12	14 - 16	23 - 25	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.035 U	0.035 U	0.038 U	0.035 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.035 U	0.035 U	0.038 U	0.035 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.28 U	0.28 U	0.3 U	0.28 U
Phenanthrene	100	100	1000	MG/KG	0.35 U	0.35 U	0.029 J	2.6
Phenol	0.33	100	0.33	MG/KG	0.35 U	0.35 U	0.38 U	0.35 U
Pyrene	100	100	1000	MG/KG	0.35 U	0.35 U	0.022 J	3.5

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-14	RXSB-14	RXSB-14	RXSB-14
			Sample Date:		07/08/2021	07/08/2021	07/08/2021	07/08/2021
			Sample Depth (ft bls):		4 - 6	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
1,2,4,5-Tetrachlorobenzene	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.1	MG/KG	0.034 U	0.034 U	0.034 U	0.036 U
2,3,4,6-Tetrachlorophenol	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
2,4,5-Trichlorophenol	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
2,4,6-Trichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
2,4-Dichlorophenol	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
2,4-Dimethylphenol	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
2,4-Dinitrophenol	--	--	--	MG/KG	0.27 U	0.28 U	0.28 U	0.29 U
2,4-Dinitrotoluene	--	--	--	MG/KG	0.069 U	0.069 U	0.07 U	0.073 U
2,6-Dinitrotoluene	--	--	--	MG/KG	0.069 U	0.069 U	0.07 U	0.073 U
2-Chloronaphthalene	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
2-Chlorophenol	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
2-Methylnaphthalene	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
2-Methylphenol (O-Cresol)	0.33	100	0.33	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
2-Nitroaniline	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
2-Nitrophenol	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
3,3'-Dichlorobenzidine	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
3-Nitroaniline	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
4,6-Dinitro-2-Methylphenol	--	--	--	MG/KG	0.27 U	0.28 U	0.28 U	0.29 U
4-Bromophenyl Phenyl Ether	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
4-Chloro-3-Methylphenol	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
4-Chloroaniline	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
4-Chlorophenyl Phenyl Ether	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
4-Methylphenol (P-Cresol)	0.33	100	0.33	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
4-Nitroaniline	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
4-Nitrophenol	--	--	--	MG/KG	0.69 U	0.69 U	0.7 U	0.73 U
Acenaphthene	20	100	98	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Acenaphthylene	100	100	107	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Acetophenone	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Anthracene	100	100	1000	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Atrazine	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-14	RXSB-14	RXSB-14	RXSB-14
			Sample Date:		07/08/2021	07/08/2021	07/08/2021	07/08/2021
			Sample Depth (ft bls):		4 - 6	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Benzaldehyde	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Benzo(A)Anthracene	**1**	1	1	MG/KG	0.014 J	0.012 J	0.034 U	0.036 U
Benzo(A)Pyrene	**1**	1	22	MG/KG	0.0097 J	0.011 J	0.034 U	0.036 U
Benzo(B)Fluoranthene	**1**	1	1.7	MG/KG	0.0097 J	0.015 J	0.034 U	0.036 U
Benzo(G,H,I)Perylene	100	100	1000	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Benzo(K)Fluoranthene	**0.8**	3.9	1.7	MG/KG	0.034 U	0.0074 J	0.034 U	0.036 U
Benzyl Butyl Phthalate	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Biphenyl (Diphenyl)	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Bis(2-Chloroethoxy) Methane	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	--	--	--	MG/KG	0.034 U	0.034 U	0.034 U	0.036 U
Bis(2-Chloroisopropyl) Ether	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Bis(2-Ethylhexyl) Phthalate	--	--	--	MG/KG	0.34 U	0.023 J	0.34 U	0.36 U
Caprolactam	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Carbazole	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Chrysene	**1**	3.9	1	MG/KG	0.0083 J	0.011 J	0.34 U	0.36 U
Cresols, M & P	0.33	100	0.33	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Dibenz(A,H)Anthracene	**0.33**	0.33	1000	MG/KG	0.034 U	0.034 U	0.034 U	0.036 U
Dibenzofuran	7	59	210	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Diethyl Phthalate	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Dimethyl Phthalate	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Di-N-Butyl Phthalate	--	--	--	MG/KG	0.035 J	0.34 U	0.025 J	0.05 J
Di-N-Octylphthalate	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Fluoranthene	100	100	1000	MG/KG	0.017 J	0.016 J	0.34 U	0.36 U
Fluorene	30	100	386	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Hexachlorobenzene	0.33	1.2	3.2	MG/KG	0.034 U	0.034 U	0.034 U	0.036 U
Hexachlorobutadiene	--	--	--	MG/KG	0.069 U	0.069 U	0.07 U	0.073 U
Hexachlorocyclopentadiene	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Hexachloroethane	--	--	--	MG/KG	0.034 U	0.034 U	0.034 U	0.036 U
Indeno(1,2,3-C,D)Pyrene	**0.5**	0.5	8.2	MG/KG	0.034 U	0.034 U	0.034 U	0.036 U
Isophorone	--	--	--	MG/KG	0.14 U	0.14 U	0.14 U	0.14 U
Naphthalene	12	100	12	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U

Table 5. Summary of Semivolatile Organic Compounds in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-14	RXSB-14	RXSB-14	RXSB-14
				Sample Date:	07/08/2021	07/08/2021	07/08/2021	07/08/2021
				Sample Depth (ft bls):	4 - 6	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
Nitrobenzene	--	--	--	MG/KG	0.034 U	0.034 U	0.034 U	0.036 U
N-Nitrosodi-N-Propylamine	--	--	--	MG/KG	0.034 U	0.034 U	0.034 U	0.036 U
N-Nitrosodiphenylamine	--	--	--	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Pentachlorophenol	0.8	6.7	0.8	MG/KG	0.27 U	0.28 U	0.28 U	0.29 U
Phenanthrene	100	100	1000	MG/KG	0.018 J	0.012 J	0.01 J	0.36 U
Phenol	0.33	100	0.33	MG/KG	0.34 U	0.34 U	0.34 U	0.36 U
Pyrene	100	100	1000	MG/KG	0.017 J	0.015 J	0.34 U	0.36 U

Table 6. Summary of Metals in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-01	RXSB-01	RXSB-01	RXSB-01	RXSB-02	RXSB-02
			Sample Date:		06/28/2021	06/28/2021	06/28/2021	06/28/2021	06/30/2021	06/30/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16	0 - 2	4 - 6
			Normal Sample or Field Duplicate:		N	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
Aluminum	--	--	--	MG/KG	6290	9680	6170	9270	8210	14000
Antimony	--	--	--	MG/KG	0.32 J	0.25 J	0.83 J	1.1 U	0.76 J	0.57 J
Arsenic	13	16	16	MG/KG	4.3	3.4	8.9	1.1	6.2	3.8
Barium	**350**	400	820	MG/KG	136	168	250	50.2	222	237
Beryllium	7.2	72	47	MG/KG	0.32 J	0.5	0.38 J	0.39 J	0.46	0.38 J
Cadmium	**2.5**	4.3	7.5	MG/KG	0.3 J	0.22 J	1.2	1.1 U	0.68 J	0.28 J
Calcium	--	--	--	MG/KG	8140	19100	12000	1030 J	13200	4990
Chromium III	**30**	180	--	MG/KG	12.2	20	19.5	12.9	18.5	**57.5**
Chromium, Hexavalent	**1**	110	19	MG/KG	2.2 U	2.1 U	2.1 U	2.2 U	0.47 U	**1.2**
Chromium, Total	**30**	180	--	MG/KG	12.2	20	19.5	12.9	18.5	**58.7**
Cobalt	--	--	--	MG/KG	5.2	8.9	6.3	4.6	6.1	9.6
Copper	**50**	270	1720	MG/KG	47.9	**54.4**	**84.4**	8.2	**56.4**	**74.5**
Cyanide	27	27	40	MG/KG	0.26 U	0.25 U	0.22 U	0.24 U	0.55 U	0.51 U
Iron	--	--	--	MG/KG	10400	18400	23400	10500	13900	27400
Lead	**63**	400	450	MG/KG	**207**	**189**	**444**	6.4	**570**	**126**
Magnesium	--	--	--	MG/KG	3030	6140	4720	2810 J	4570	7800
Manganese	1600	2000	2000	MG/KG	212	256	289	242	276	352
Mercury	**0.18**	0.81	0.73	MG/KG	**0.21**	**0.6**	**1.8**	0.021	**0.98**	**2**
Nickel	**30**	310	130	MG/KG	17.7	20	17.4	10.1	14.1	26.1
Potassium	--	--	--	MG/KG	1240	4440	1460	1270 J	1440	7100
Selenium	3.9	180	4	MG/KG	0.55 J	0.34 J	0.63 J	1.4 U	0.79 J	0.46 J
Silver	2	180	8.3	MG/KG	0.15 J	0.14 J	0.31 J	1.1 U	0.48 J	0.16 J
Sodium	--	--	--	MG/KG	238	296	220	124	369	173
Thallium	--	--	--	MG/KG	0.094 J	0.2 J	0.11 J	0.085 J	0.13 J	0.51
Vanadium	--	--	--	MG/KG	17.3	25.6	20.3	16.5	21.6	46.4
Zinc	**109**	10000	2480	MG/KG	**148**	**128**	**1780**	28.7	**293**	**173**

Table 6. Summary of Metals in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-02	RXSB-03	RXSB-03	RXSB-03	RXSB-03	RXSB-03
			Sample Date:		06/30/2021	06/30/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Depth (ft bls):		10 - 12	0 - 2	4 - 6	10 - 12	14 - 16	23 - 25
			Normal Sample or Field Duplicate:		N	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
Aluminum	--	--	--	MG/KG	17500	7630	5710	8990	6860	8950
Antimony	--	--	--	MG/KG	1 U	0.45 J	1.1 U	1.1 U	1.1 U	1.1 U
Arsenic	13	16	16	MG/KG	1.1	5.3	3.8	6.7	1.6	0.72 J
Barium	**350**	400	820	MG/KG	294	214	236	**648**	47	56.1
Beryllium	7.2	72	47	MG/KG	0.29 J	0.45	0.5	0.46	0.31 J	0.24 J
Cadmium	**2.5**	4.3	7.5	MG/KG	1 U	0.52 J	0.32 J	**4.4**	1.3 J	1.1 U
Calcium	--	--	--	MG/KG	3760 J	13100	59600	79300	2520	45400
Chromium III	**30**	180	--	MG/KG	**79.3**	18.5	NA	NA	NA	NA
Chromium, Hexavalent	**1**	110	19	MG/KG	0.45 U	0.46 U	2.1 U	2.3 U	2.2 U	2.3 U
Chromium, Total	**30**	180	--	MG/KG	**79.3**	18.5	12	15.7	9.9	22.4
Cobalt	--	--	--	MG/KG	12.6	6.4	6.6	5.9	4.1	9.6
Copper	**50**	270	1720	MG/KG	18.8 J	46.5	14.4	19.7	8.6	25.1
Cyanide	27	27	40	MG/KG	0.51 U	0.74	0.54 U	0.54 U	0.51 U	0.57 U
Iron	--	--	--	MG/KG	31800	14100	10300	28000	13300 J	17400
Lead	**63**	400	450	MG/KG	16	**286**	**277**	**277**	18.1 J	5.1
Magnesium	--	--	--	MG/KG	11500	6060	17600	12400	2630	29700
Manganese	1600	2000	2000	MG/KG	397	315	270	358	277	230
Mercury	**0.18**	0.81	0.73	MG/KG	0.12	**0.49**	0.14	**0.47**	0.036	0.018 U
Nickel	**30**	310	130	MG/KG	**40.3**	14.8	12.7	12.4	9.3	18.5
Potassium	--	--	--	MG/KG	12700	1790	1910	2550	965	3050
Selenium	3.9	180	4	MG/KG	0.12 J	0.89 J	0.39 J	3.4	0.15 J	1.4 U
Silver	2	180	8.3	MG/KG	1 U	0.18 J	1.1 U	0.19 J	1.1 U	1.1 U
Sodium	--	--	--	MG/KG	244	253	224	823	85.7 J	376
Thallium	--	--	--	MG/KG	0.7	0.13 J	0.2 J	0.2 J	0.14 J	0.3 J
Vanadium	--	--	--	MG/KG	70.5	24.3	18	19.6	12.2	34.2
Zinc	**109**	10000	2480	MG/KG	94	**261**	**271**	**2330**	**427 J**	38.4

Table 6. Summary of Metals in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-04	RXSB-04	RXSB-04	RXSB-04	RXSB-04	RXSB-05
			Sample Date:		07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/06/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16	23 - 25	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
Aluminum	--	--	--	MG/KG	12200	9370	9560	7110	13300	9470
Antimony	--	--	--	MG/KG	1.1 U	0.65 J	0.55 J	1 U	1.1 U	0.5 J
Arsenic	13	16	16	MG/KG	4.1	5.6	9.1	1.7	0.8 J	4.7
Barium	**350**	400	820	MG/KG	160	244	286	33.2	244	263
Beryllium	7.2	72	47	MG/KG	0.5	0.43 J	0.39 J	0.31 J	0.49	0.46
Cadmium	**2.5**	4.3	7.5	MG/KG	0.23 J	0.52 J	0.83 J	1 U	0.15 J	0.57 J
Calcium	--	--	--	MG/KG	2960	10400	14600	1200	78900	8980
Chromium III	**30**	180	--	MG/KG	NA	NA	NA	NA	NA	22.9
Chromium, Hexavalent	**1**	110	19	MG/KG	2.3 U	2.3 U	2.2 U	2.1 U	2.3 U	2.5 U
Chromium, Total	**30**	180	--	MG/KG	28.7	20.1	28.3	12.5	**51.7**	22.9
Cobalt	--	--	--	MG/KG	9	7.5	8.6	4.7	10.7	7.6
Copper	**50**	270	1720	MG/KG	19.2	**51.2**	**134**	10.2	22.1	49
Cyanide	27	27	40	MG/KG	0.55 U	0.55 U	0.47 J	0.51 U	0.55 U	0.63 U
Iron	--	--	--	MG/KG	23100	17800	29800	13000	19300	17800
Lead	**63**	400	450	MG/KG	**127**	**616**	**700**	27.3	8.4	**324**
Magnesium	--	--	--	MG/KG	3950	5880	5810	2410	61700	4180
Manganese	1600	2000	2000	MG/KG	777	260	378	322	255	304
Mercury	**0.18**	0.81	0.73	MG/KG	0.11	**1.6**	**0.73**	0.11	0.019 U	**0.31**
Nickel	**30**	310	130	MG/KG	22.4	17.8	21.4	10	23.8	18.2
Potassium	--	--	--	MG/KG	1560	2280	3550	720	1420	2090
Selenium	3.9	180	4	MG/KG	0.51 J	0.51 J	0.48 J	0.13 J	0.25 J	0.59 J
Silver	2	180	8.3	MG/KG	1.1 U	0.19 J	0.18 J	1 U	1.1 U	0.17 J
Sodium	--	--	--	MG/KG	468	522	392	117	474	268
Thallium	--	--	--	MG/KG	0.21 J	0.2 J	0.29 J	0.093 J	0.39 J	0.18 J
Vanadium	--	--	--	MG/KG	34.4	24.9	31.6	12.7	41.1	27.2
Zinc	**109**	10000	2480	MG/KG	84.6	**303**	**337**	46.5	59.4	**486**

Table 6. Summary of Metals in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-05	RXSB-06	RXSB-06	RXSB-06	RXSB-06	RXSB-06
			Sample Date:		07/06/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021
			Sample Depth (ft bls):		4 - 6	0 - 2	4 - 6	10 - 12	14 - 16	23 - 25
			Normal Sample or Field Duplicate:		N	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
Aluminum	--	--	--	MG/KG	20700	11100	10700	5200	6520	5510
Antimony	--	--	--	MG/KG	0.82 U	0.73 J	1.5	1 U	1 U	1.1 U
Arsenic	13	16	16	MG/KG	1.6	5.5	2.7	1.1	2	1.7
Barium	**350**	400	820	MG/KG	**686**	233	168	23.1	26.8	23.3
Beryllium	7.2	72	47	MG/KG	0.28 J	0.39 J	0.35 J	0.26 J	0.33 J	0.28 J
Cadmium	**2.5**	4.3	7.5	MG/KG	0.82 U	0.64 J	0.3 J	1 U	1 U	1.1 U
Calcium	--	--	--	MG/KG	5590	7120	5510	574	919	889
Chromium III	**30**	180	--	MG/KG	**48.2**	**33.5**	28.5	7.8	9.9	4.3
Chromium, Hexavalent	**1**	110	19	MG/KG	2.2 U	2.1 U	2.1 U	2.1 U	2 U	**5.1**
Chromium, Total	**30**	180	--	MG/KG	**48.2**	**33.5**	28.5	7.8	9.9	9.4
Cobalt	--	--	--	MG/KG	15.4	9.2	6.9	3.7	5.2	4.7
Copper	**50**	270	1720	MG/KG	23.9	**67.7**	27.7	6.6	10.8	9.7
Cyanide	27	27	40	MG/KG	0.53 U	0.53 U	0.52 U	0.51 U	0.51 U	0.6 U
Iron	--	--	--	MG/KG	37700	22800	16600	8570	12900	10900
Lead	**63**	400	450	MG/KG	29.4	**335**	**166**	4	5.1	9.9
Magnesium	--	--	--	MG/KG	10900	6220	5240	1900	2730	2350
Manganese	1600	2000	2000	MG/KG	433	369	312	222	403	137
Mercury	**0.18**	0.81	0.73	MG/KG	0.079	**0.42**	0.15	0.016 U	0.017 U	0.02 U
Nickel	**30**	310	130	MG/KG	**36.9**	24.4	18.5	8.3	11.8	10.8
Potassium	--	--	--	MG/KG	11800	4590	3960	689	913	891
Selenium	3.9	180	4	MG/KG	0.22 J	0.55 J	0.24 J	1.3 U	1.3 U	1.4 U
Silver	2	180	8.3	MG/KG	0.12 J	0.22 J	0.14 J	1 U	1 U	1.1 U
Sodium	--	--	--	MG/KG	128	550	378	181	219	260
Thallium	--	--	--	MG/KG	0.63	0.32 J	0.24 J	0.048 J	0.055 J	0.055 J
Vanadium	--	--	--	MG/KG	59.5	37.3	29.6	9.6	13.1	11.8
Zinc	**109**	10000	2480	MG/KG	107	**328**	**126**	17.3	31.4	26

Table 6. Summary of Metals in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-07	RXSB-07	RXSB-07	RXSB-07	RXSB-07	RXSB-08
			Sample Date:		07/08/2021	07/09/2021	07/09/2021	07/09/2021	07/09/2021	06/28/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16	23 - 25	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
Aluminum	--	--	--	MG/KG	5760 J	12100	5660	7520	7630	8130
Antimony	--	--	--	MG/KG	0.29 J	1 U	0.97 U	1.1 U	1.1 U	1.4
Arsenic	13	16	16	MG/KG	5.7 J	3	1	2	2.6	5.7
Barium	**350**	400	820	MG/KG	118 J	240	27.7	35.2 J	36.1	261
Beryllium	7.2	72	47	MG/KG	0.33 J	0.41	0.28 J	0.36 J	0.43 J	0.4 J
Cadmium	**2.5**	4.3	7.5	MG/KG	0.31 J	1 U	0.97 U	1.1 U	1.1 U	0.5 J
Calcium	--	--	--	MG/KG	5430 J	2870	450	881 J	1350	14100
Chromium III	**30**	180	--	MG/KG	14.6	**38.1**	8.1	10.8	14.2	17.8
Chromium, Hexavalent	**1**	110	19	MG/KG	2.2 U	2.2 U	2 U	2.1 U	2.4 U	2.2 U
Chromium, Total	**30**	180	--	MG/KG	14.6 J	**38.1**	8.1	10.8	14.2	17.8
Cobalt	--	--	--	MG/KG	5.4 J	7.4	3.6	5.7	6.4	7
Copper	**50**	270	1720	MG/KG	32.2 J	21.7	5.9	11.4	16.1	**70**
Cyanide	27	27	40	MG/KG	0.55 U	0.57 U	0.55 U	0.55 U	0.62 U	0.15 J
Iron	--	--	--	MG/KG	11200 J	19300	8010	14300	15600	15100
Lead	**63**	400	450	MG/KG	**150 J**	42.4	3.6	5.4	8	**733**
Magnesium	--	--	--	MG/KG	2700 J	5600	1850	2950	3110	4970
Manganese	1600	2000	2000	MG/KG	165 J	427	230	428	226	261
Mercury	**0.18**	0.81	0.73	MG/KG	**0.31 J**	0.086	0.014 J	0.013 J	0.012 J	**0.62**
Nickel	**30**	310	130	MG/KG	13.6 J	20.2	7.8	12.7	13.9	**36.1**
Potassium	--	--	--	MG/KG	1980	5320	658	987	1200	1810
Selenium	3.9	180	4	MG/KG	0.36 J	0.4 J	1.2 U	1.3 U	1.4 U	0.77 J
Silver	2	180	8.3	MG/KG	0.13 J	1 U	0.97 U	1.1 U	1.1 U	0.3 J
Sodium	--	--	--	MG/KG	405	357	230	110	98.1 J	337
Thallium	--	--	--	MG/KG	0.2 J	0.33 J	0.049 J	0.079 J	0.089 J	0.079 J
Vanadium	--	--	--	MG/KG	21.8 J	33.4	9.5	14.9	16.4	21.8
Zinc	**109**	10000	2480	MG/KG	**127 J**	97.6	17.3	31.1	39.4	**302**

Table 6. Summary of Metals in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-08	RXSB-08	RXSB-09	RXSB-09	RXSB-09	RXSB-09
			Sample Date:		06/28/2021	06/28/2021	06/29/2021	06/29/2021	06/29/2021	06/29/2021
			Sample Depth (ft bls):		4 - 6	4 - 6	0 - 2	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	FD	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
Aluminum	--	--	--	MG/KG	8570	6860	10500	15600	16100	6460
Antimony	--	--	--	MG/KG	0.63 J	0.26 J	0.38 J	0.98 U	0.16 J	0.98 U
Arsenic	13	16	16	MG/KG	5	3.4	5.9	1.4	1.6	1.8
Barium	**350**	400	820	MG/KG	129 J	231 J	241	245	248	132
Beryllium	7.2	72	47	MG/KG	0.5	0.42	0.49	0.32 J	0.28 J	0.27 J
Cadmium	**2.5**	4.3	7.5	MG/KG	0.44 J	0.21 J	0.42 J	0.98 U	0.14 J	0.15 J
Calcium	--	--	--	MG/KG	17400	12900	28700	4050	2630	1020
Chromium III	**30**	180	--	MG/KG	20.7	16.7	24.6	**65.6**	**66.6**	14.6
Chromium, Hexavalent	**1**	110	19	MG/KG	2.2 U	2.2 U	0.51 U	0.45 U	0.45 U	0.45 U
Chromium, Total	**30**	180	--	MG/KG	20.7	16.7	24.6	**65.6**	**66.6**	14.6
Cobalt	--	--	--	MG/KG	8.6	6.6	8.2	11	12	4.2
Copper	**50**	270	1720	MG/KG	**84.7**	**70.6**	43.2	22.8	27.8	18.8
Cyanide	27	27	40	MG/KG	0.24 U	0.24 U	0.59 U	0.53 U	0.55 U	0.49 U
Iron	--	--	--	MG/KG	18900	13100	20000	28100	28200	10800
Lead	**63**	400	450	MG/KG	**336**	**306**	**275**	38.7	63	49.7
Magnesium	--	--	--	MG/KG	9070	6990	8000	9670	9860	2730
Manganese	1600	2000	2000	MG/KG	318	237	549	417	459	287
Mercury	**0.18**	0.81	0.73	MG/KG	**0.56**	**0.53**	**0.42**	0.12	**0.27**	0.077
Nickel	**30**	310	130	MG/KG	18.5	14.2	18.2	**32.4**	**33.7**	9.9
Potassium	--	--	--	MG/KG	2660	2110	3490	9860	10500	1750
Selenium	3.9	180	4	MG/KG	0.48 J	0.27 J	0.87 J	0.15 J	0.17 J	0.21 J
Silver	2	180	8.3	MG/KG	0.25 J	0.21 J	0.14 J	0.98 U	0.99 U	0.12 J
Sodium	--	--	--	MG/KG	210	157	452	114	103	59.8 J
Thallium	--	--	--	MG/KG	0.27 J	0.15 J	0.23 J	0.53	0.53	0.12 J
Vanadium	--	--	--	MG/KG	25.9	20.2	33.4	56.3	57.9	15.1
Zinc	**109**	10000	2480	MG/KG	**215**	**148**	**186**	85.6	**130**	**112**

Table 6. Summary of Metals in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-10	RXSB-10	RXSB-10	RXSB-10	RXSB-11	RXSB-11
			Sample Date:		06/29/2021	06/29/2021	06/29/2021	06/29/2021	07/02/2021	07/02/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16	0 - 2	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N	N	FD
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
Aluminum	--	--	--	MG/KG	6930	4280	5340	4910	9940	15500
Antimony	--	--	--	MG/KG	2.1 J	1.1 U	0.62 J	0.98 U	0.42 J	0.19 J
Arsenic	13	16	16	MG/KG	7 J	4.6	11.1	1.3	2.9	3.1
Barium	**350**	400	820	MG/KG	209	**762**	**369**	23.9	209 J	**361 J**
Beryllium	7.2	72	47	MG/KG	0.36 J	0.34 J	0.38 J	0.27 J	0.32 J	0.42
Cadmium	**2.5**	4.3	7.5	MG/KG	1.5	0.58 J	**5.2**	0.98 U	0.27 J	0.26 J
Calcium	--	--	--	MG/KG	6420	50600	60200	689	9710	10800
Chromium III	**30**	180	--	MG/KG	15.5	11.1	13	7.9	**31.6**	**50.8**
Chromium, Hexavalent	**1**	110	19	MG/KG	0.46 U	0.91	0.46 U	0.44 U	2.2 U	2.2 U
Chromium, Total	**30**	180	--	MG/KG	15.5 J	12	13	7.9	**31.6**	**50.8**
Cobalt	--	--	--	MG/KG	7.8 J	4.7	8	3.6	7.2	11.5
Copper	**50**	270	1720	MG/KG	**86.2 J**	29.3	33.1	6.9	27.2	29.5
Cyanide	27	27	40	MG/KG	0.26 J	0.74	0.2 J	0.52 U	0.53 U	0.51 U
Iron	--	--	--	MG/KG	14000	8590	29400	9080	18200	28600
Lead	**63**	400	450	MG/KG	**181**	**816**	**1110**	4.6	**166**	**125**
Magnesium	--	--	--	MG/KG	3260	11400	16200	1950	5830 J	10300 J
Manganese	1600	2000	2000	MG/KG	246	214	348	292	312	432
Mercury	**0.18**	0.81	0.73	MG/KG	**0.26 J**	**0.43**	**0.73**	0.017 U	**0.28**	**0.21**
Nickel	**30**	310	130	MG/KG	15.4 J	10.9	14.4	8	20.1	**30.8**
Potassium	--	--	--	MG/KG	1490	1400	1210	722	4220 J	8310 J
Selenium	3.9	180	4	MG/KG	0.52 J	0.4 J	1.2 J	1.2 U	0.4 J	0.43 J
Silver	2	180	8.3	MG/KG	0.11 J	1.1 U	0.41 J	0.98 U	0.11 J	1 U
Sodium	--	--	--	MG/KG	323	156	146	47.5 J	505	607
Thallium	--	--	--	MG/KG	0.13 J	0.11 J	0.14 J	0.39 U	0.27 J	0.54
Vanadium	--	--	--	MG/KG	20.5 J	13.9	16.7	9.5	33.8 J	57.2 J
Zinc	**109**	10000	2480	MG/KG	**389**	**425**	**3010**	20	**141**	**141**

Table 6. Summary of Metals in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-12	RXSB-12	RXSB-12	RXSB-12	RXSB-13	RXSB-13
			Sample Date:		07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/07/2021	07/07/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16	0 - 2	4 - 6
			Normal Sample or Field Duplicate:		N	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
Aluminum	--	--	--	MG/KG	12200	10900	6540	6090	7340	7010
Antimony	--	--	--	MG/KG	0.18 J	0.8 U	0.81 U	0.84 U	0.8 J	0.22 J
Arsenic	13	16	16	MG/KG	3.5	1.7	1.6	1.7	7.2	3.4
Barium	**350**	400	820	MG/KG	**370**	226	38.5	25.7	148	110
Beryllium	7.2	72	47	MG/KG	0.38 J	0.45	0.32	0.31 J	0.3 J	0.32 J
Cadmium	**2.5**	4.3	7.5	MG/KG	0.21 J	0.8 U	0.81 U	0.84 U	1.4	0.39 J
Calcium	--	--	--	MG/KG	6410	3060	663	792	10000	4430
Chromium III	**30**	180	--	MG/KG	**31.5**	24.3	9.3	8.4	22.2	15.1
Chromium, Hexavalent	**1**	110	19	MG/KG	2.2 U	0.97 J	2.1 U	2.1 U	2.1 U	0.74 J
Chromium, Total	**30**	180	--	MG/KG	**31.5**	25.3	9.3	8.4	22.2	15.8
Cobalt	--	--	--	MG/KG	11.6	7.3	4.2	4.6	8	5.3
Copper	**50**	270	1720	MG/KG	39.9	17.1	7.4	9.2	**83.6**	29.1
Cyanide	27	27	40	MG/KG	0.54 U	0.51 U	0.52 U	0.51 U	0.53 U	0.51 U
Iron	--	--	--	MG/KG	24500	17100	10600	11700	41500	14400
Lead	**63**	400	450	MG/KG	**116**	24.2	4.4	4.4	**342**	**370**
Magnesium	--	--	--	MG/KG	7670	4820	2130	2460	4570	3250
Manganese	1600	2000	2000	MG/KG	356	415	299	343	309	236
Mercury	**0.18**	0.81	0.73	MG/KG	0.15	0.032	0.017 U	0.017 U	**0.25**	0.14
Nickel	**30**	310	130	MG/KG	**30.1**	18.7	9.5	10.3	**78**	13.4
Potassium	--	--	--	MG/KG	6420	3620	781	696	1620	1510
Selenium	3.9	180	4	MG/KG	0.72 J	0.17 J	1 U	1.1 U	0.54 J	0.43 J
Silver	2	180	8.3	MG/KG	0.12 J	0.11 J	0.81 U	0.84 U	0.19 J	0.13 J
Sodium	--	--	--	MG/KG	572	163	58.1 J	53.8 J	438	384
Thallium	--	--	--	MG/KG	0.42	0.22 J	0.056 J	0.049 J	0.14 J	0.12 J
Vanadium	--	--	--	MG/KG	42.7	27.8	12.2	10.8	20.2	20.6
Zinc	**109**	10000	2480	MG/KG	**130 J**	59.8	20.7	26.4	**565**	**194**

Table 6. Summary of Metals in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-13	RXSB-13	RXSB-13	RXSB-14	RXSB-14	RXSB-14
			Sample Date:		07/07/2021	07/07/2021	07/07/2021	07/08/2021	07/08/2021	07/08/2021
			Sample Depth (ft bls):		10 - 12	14 - 16	23 - 25	0 - 2	4 - 6	4 - 6
			Normal Sample or Field Duplicate:		N	N	N	N	N	FD
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
Aluminum	--	--	--	MG/KG	5620	5950	7690	10200	6030	6190
Antimony	--	--	--	MG/KG	1.1 U	1 U	1.1 U	1.7	0.96 U	0.96 U
Arsenic	13	16	16	MG/KG	1.4	1.7	1.1	7.9	1.4	1.3
Barium	**350**	400	820	MG/KG	25.6	30.6	62.8	333	36.1	37.7
Beryllium	7.2	72	47	MG/KG	0.3 J	0.3 J	0.96	0.31 J	0.24 J	0.24 J
Cadmium	**2.5**	4.3	7.5	MG/KG	1.1 U	1 U	1.1 U	0.43 J	0.96 U	0.96 U
Calcium	--	--	--	MG/KG	714	901	2860	5200	667	723
Chromium III	**30**	180	--	MG/KG	2 U	9.2	20.7	**45.5**	12.1	12.8
Chromium, Hexavalent	**1**	110	19	MG/KG	2.2 U	2.1 U	2.4 U	2.1 U	0.78 J	2 U
Chromium, Total	**30**	180	--	MG/KG	11.3	9.2	20.7	**45.4**	12.1	12.8
Cobalt	--	--	--	MG/KG	4.6	4.8	9.5	10.3	4.1	4.7
Copper	**50**	270	1720	MG/KG	8.5	9.2	15.3	**57.7**	7.9	7.5
Cyanide	27	27	40	MG/KG	0.53 U	0.53 U	0.55 U	0.52 U	0.53 U	0.52 U
Iron	--	--	--	MG/KG	11900	11600	20100	60600	10300	10100
Lead	**63**	400	450	MG/KG	4.6	4.3	7.2	**362**	14.6	17
Magnesium	--	--	--	MG/KG	2360	2680	5070	5800	2400	2390
Manganese	1600	2000	2000	MG/KG	326	368	347	505	255	245
Mercury	**0.18**	0.81	0.73	MG/KG	0.017 U	0.017 U	0.018 U	**0.22**	0.031	0.071
Nickel	**30**	310	130	MG/KG	9.6	11.3	18.2	27.4	10.6	10
Potassium	--	--	--	MG/KG	738	825	1590	5410	1330	1370
Selenium	3.9	180	4	MG/KG	1.3 U	1.3 U	1.4 U	0.5 J	1.2 U	1.2 U
Silver	2	180	8.3	MG/KG	1.1 U	1 U	1.1 U	0.17 J	0.96 U	0.96 U
Sodium	--	--	--	MG/KG	263	241	379	607	308	137
Thallium	--	--	--	MG/KG	0.05 J	0.051 J	0.34 J	0.32 J	0.065 J	0.071 J
Vanadium	--	--	--	MG/KG	11.9	11.3	25.1	36.2	13	14.2
Zinc	**109**	10000	2480	MG/KG	22.5	29	51.3	**236**	38.8	29.1

Table 6. Summary of Metals in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-14	RXSB-14
			Sample Date:		07/08/2021	07/08/2021
			Sample Depth (ft bls):		10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units		
Aluminum	--	--	--	MG/KG	4840	5410
Antimony	--	--	--	MG/KG	0.96 U	1 U
Arsenic	13	16	16	MG/KG	1.1	1.4
Barium	**350**	400	820	MG/KG	31.3	29.4
Beryllium	7.2	72	47	MG/KG	0.24 J	0.25 J
Cadmium	**2.5**	4.3	7.5	MG/KG	0.96 U	1 U
Calcium	--	--	--	MG/KG	681	796
Chromium III	**30**	180	--	MG/KG	9.8	8.8
Chromium, Hexavalent	**1**	110	19	MG/KG	0.41 J	2.1 U
Chromium, Total	**30**	180	--	MG/KG	9.8	8.8
Cobalt	--	--	--	MG/KG	3.4	4.4
Copper	**50**	270	1720	MG/KG	6.2	8.5
Cyanide	27	27	40	MG/KG	0.49 U	0.56 U
Iron	--	--	--	MG/KG	8630	10500
Lead	**63**	400	450	MG/KG	7.3	4.9
Magnesium	--	--	--	MG/KG	1940	2250
Manganese	1600	2000	2000	MG/KG	307	343
Mercury	**0.18**	0.81	0.73	MG/KG	0.0074 J	0.0046 J
Nickel	**30**	310	130	MG/KG	8.3	9.5
Potassium	--	--	--	MG/KG	955	861
Selenium	3.9	180	4	MG/KG	1.2 U	1.3 U
Silver	2	180	8.3	MG/KG	0.96 U	1 U
Sodium	--	--	--	MG/KG	85.4 BJ	74.6 BJ
Thallium	--	--	--	MG/KG	0.045 J	0.41 U
Vanadium	--	--	--	MG/KG	10.2	11.2
Zinc	**109**	10000	2480	MG/KG	18.2	23.3

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-01	RXSB-01	RXSB-01	RXSB-01	RXSB-02
				Sample Date:	06/28/2021	06/28/2021	06/28/2021	06/28/2021	06/30/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U	0.075 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U	0.075 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U	0.075 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U	0.075 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U	0.075 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U	0.38
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	0.2	0.071 U	0.071 U	0.073 U	0.075 U
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U	0.075 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U	0.075 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	**0.2**	0.071 U	0.071 U	0.073 U	**0.38**

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-02	RXSB-02	RXSB-03	RXSB-03	RXSB-03
				Sample Date:	06/30/2021	06/30/2021	06/30/2021	07/01/2021	07/01/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	0 - 2	4 - 6	10 - 12
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.071 U	0.069 U	0.075 U	0.074 U	0.075 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.071 U	0.069 U	0.075 U	0.074 U	0.075 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.071 U	0.069 U	0.075 U	0.074 U	0.075 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.071 U	0.069 U	0.075 U	0.074 U	0.075 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.071 U	0.069 U	0.075 U	0.074 U	0.075 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.071 U	0.069 U	0.64	0.074 U	0.075 U
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	0.071 U	0.069 U	0.075 U	0.074 U	0.075 U
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.071 U	0.069 U	0.075 U	0.074 U	0.075 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.071 U	0.069 U	0.075 U	0.074 U	0.075 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	0.071 U	0.069 U	**0.64**	0.074 U	0.075 U

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-03	RXSB-03	RXSB-04	RXSB-04	RXSB-04
				Sample Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
				Sample Depth (ft bls):	14 - 16	23 - 25	0 - 2	4 - 6	10 - 12
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.071 U	0.077 U	0.077 U	3.8 U	1.5 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.071 U	0.077 U	0.077 U	3.8 U	1.5 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.071 U	0.077 U	0.077 U	3.8 U	1.5 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.071 U	0.077 U	0.077 U	3.8 U	1.5 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.071 U	0.077 U	0.077 U	3.8 U	1.5 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.071 U	0.077 U	0.077 U	3.8 U	11
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	0.071 U	0.077 U	0.19	39	1.5 U
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.071 U	0.077 U	0.077 U	3.8 U	1.5 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.071 U	0.077 U	0.077 U	3.8 U	1.5 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	0.071 U	0.077 U	**0.19**	**39**	**11**

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-04	RXSB-04	RXSB-05	RXSB-05	RXSB-06
				Sample Date:	07/01/2021	07/01/2021	07/06/2021	07/06/2021	07/07/2021
				Sample Depth (ft bls):	14 - 16	23 - 25	0 - 2	4 - 6	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.071 U	0.076 U	0.085 U	0.073 U	0.073 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.071 U	0.076 U	0.085 U	0.073 U	0.073 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.071 U	0.076 U	0.085 U	0.073 U	0.073 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.071 U	0.076 U	0.085 U	0.073 U	0.073 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.071 U	0.076 U	0.085 U	0.073 U	0.073 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.071 U	0.076 U	0.085 U	0.073 U	0.073 U
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	0.071 U	0.076 U	1.1	0.073 U	0.073 U
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.071 U	0.076 U	0.085 U	0.073 U	0.073 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.071 U	0.076 U	0.085 U	0.073 U	0.073 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	0.071 U	0.076 U	**1.1**	0.073 U	0.073 U

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-06	RXSB-06	RXSB-06	RXSB-06	RXSB-07
				Sample Date:	07/07/2021	07/07/2021	07/07/2021	07/07/2021	07/08/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	14 - 16	23 - 25	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U	0.074 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U	0.074 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U	0.074 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U	0.074 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U	0.074 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U	0.074 U
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U	0.074 U
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U	0.074 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U	0.074 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U	0.074 U

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-07	RXSB-07	RXSB-07	RXSB-08
				Sample Date:	07/09/2021	07/09/2021	07/09/2021	07/09/2021	06/28/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	14 - 16	23 - 25	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.074 U	0.069 U	0.071 U	0.08 U	0.075 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.074 U	0.069 U	0.071 U	0.08 U	0.075 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.074 U	0.069 U	0.071 U	0.08 U	0.075 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.074 U	0.069 U	0.071 U	0.08 U	0.075 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.074 U	0.069 U	0.071 U	0.08 U	0.075 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.074 U	0.069 U	0.071 U	0.08 U	0.075 U
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	0.074 U	0.069 U	0.071 U	0.08 U	0.061 J
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.074 U	0.069 U	0.071 U	0.08 U	0.075 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.074 U	0.069 U	0.071 U	0.08 U	0.075 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	0.074 U	0.069 U	0.071 U	0.08 U	0.061 J

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-08	RXSB-08	RXSB-09	RXSB-09	RXSB-09
				Sample Date:	06/28/2021	06/28/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	4 - 6	4 - 6	0 - 2	4 - 6	10 - 12
				Normal Sample or Field Duplicate:	N	FD	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.074 U	0.074 U	0.083 U	0.071 U	0.071 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.074 U	0.074 U	0.083 U	0.071 U	0.071 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.074 U	0.074 U	0.083 U	0.071 U	0.071 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.074 U	0.074 U	0.083 U	0.071 U	0.071 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.074 U	0.074 U	0.083 U	0.071 U	0.071 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.074 U	0.074 U	0.74	0.071 U	0.071 U
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	0.074 U	0.074 U	0.083 U	0.071 U	0.071 U
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.074 U	0.074 U	0.083 U	0.071 U	0.071 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.074 U	0.074 U	0.083 U	0.071 U	0.071 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	0.074 U	0.074 U	**0.74**	0.071 U	0.071 U

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-09	RXSB-10	RXSB-10	RXSB-10	RXSB-10
				Sample Date:	06/29/2021	06/29/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	14 - 16	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.071 U	0.073 U	0.075 U	0.076 U	0.07 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.071 U	0.073 U	0.075 U	0.076 U	0.07 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.071 U	0.073 U	0.075 U	0.076 U	0.07 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.071 U	0.073 U	0.075 U	0.076 U	0.07 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.071 U	0.073 U	0.075 U	0.076 U	0.07 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.071 U	0.073 U	0.075 U	0.076 U	0.07 U
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	0.071 U	0.44 J	0.075 U	0.076 U	0.07 U
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.071 U	0.073 U	0.075 U	0.076 U	0.07 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.071 U	0.073 U	0.075 U	0.076 U	0.07 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	0.071 U	**0.44 J**	0.075 U	0.076 U	0.07 U

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-11	RXSB-11	RXSB-12	RXSB-12	RXSB-12
				Sample Date:	07/02/2021	07/02/2021	07/06/2021	07/06/2021	07/06/2021
				Sample Depth (ft bls):	0 - 2	0 - 2	0 - 2	4 - 6	10 - 12
				Normal Sample or Field Duplicate:	N	FD	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U	0.07 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U	0.07 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U	0.07 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U	0.07 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U	0.07 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U	0.07 U
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	1.3	0.88	0.13	0.071 U	0.07 U
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U	0.07 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U	0.07 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	**1.3**	**0.88**	**0.13**	0.071 U	0.07 U

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-12	RXSB-13	RXSB-13	RXSB-13	RXSB-13
				Sample Date:	07/06/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	14 - 16	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.072 U	0.073 U	0.073 U	0.071 U	0.071 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.072 U	0.073 U	0.073 U	0.071 U	0.071 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.072 U	0.073 U	0.073 U	0.071 U	0.071 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.072 U	0.073 U	0.073 U	0.071 U	0.071 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.072 U	0.073 U	0.073 U	0.071 U	0.071 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.072 U	0.073 U	0.073 U	0.071 U	0.071 U
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	0.072 U	0.083	0.073 U	0.071 U	0.071 U
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.072 U	0.073 U	0.073 U	0.071 U	0.071 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.072 U	0.073 U	0.073 U	0.071 U	0.071 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	0.072 U	0.083	0.073 U	0.071 U	0.071 U

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-13	RXSB-14	RXSB-14	RXSB-14	RXSB-14
				Sample Date:	07/07/2021	07/08/2021	07/08/2021	07/08/2021	07/08/2021
				Sample Depth (ft bls):	23 - 25	0 - 2	4 - 6	4 - 6	10 - 12
				Normal Sample or Field Duplicate:	N	N	N	FD	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.077 U	0.071 U	0.069 U	0.069 U	0.07 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.077 U	0.071 U	0.069 U	0.069 U	0.07 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.077 U	0.071 U	0.069 U	0.069 U	0.07 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.077 U	0.071 U	0.069 U	0.069 U	0.07 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.077 U	0.071 U	0.069 U	0.069 U	0.07 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.077 U	0.071 U	0.069 U	0.069 U	0.07 U
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	0.077 U	0.071 U	0.069 U	0.069 U	0.07 U
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.077 U	0.071 U	0.069 U	0.069 U	0.07 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.077 U	0.071 U	0.069 U	0.069 U	0.07 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	0.077 U	0.071 U	0.069 U	0.069 U	0.07 U

Table 7. Summary of Polychlorinated Biphenyls in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-14
				Sample Date:	07/08/2021
				Sample Depth (ft bls):	14 - 16
				Normal Sample or Field Duplicate:	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units	
PCB-1016 (Aroclor 1016)	--	--	--	MG/KG	0.073 U
PCB-1221 (Aroclor 1221)	--	--	--	MG/KG	0.073 U
PCB-1232 (Aroclor 1232)	--	--	--	MG/KG	0.073 U
PCB-1242 (Aroclor 1242)	--	--	--	MG/KG	0.073 U
PCB-1248 (Aroclor 1248)	--	--	--	MG/KG	0.073 U
PCB-1254 (Aroclor 1254)	--	--	--	MG/KG	0.073 U
PCB-1260 (Aroclor 1260)	--	--	--	MG/KG	0.073 U
PCB-1262 (Aroclor 1262)	--	--	--	MG/KG	0.073 U
PCB-1268 (Aroclor 1268)	--	--	--	MG/KG	0.073 U
Polychlorinated Biphenyl (PCBs)	**0.1**	1	3.2	MG/KG	0.073 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-01	RXSB-01	RXSB-01	RXSB-01
				Sample Date:	06/28/2021	06/28/2021	06/28/2021	06/28/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.036 U	0.035 U	0.035 U	0.036 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.036 U	0.035 U	0.035 U	0.036 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0022 U	0.0021 U	0.0021 U	0.0022 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0022 U	0.0021 U	0.0021 U	0.0022 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U
Chlordane (Technical)	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0022 U	0.0021 U	0.0021 U	0.0022 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0022 U	0.0021 U	0.0021 U	0.0022 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U
Endrin	0.014	11	0.06	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U
Endrin Aldehyde	--	--	--	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U
Endrin Ketone	--	--	--	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0022 U	0.0021 U	0.0021 U	0.0022 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U
Methoxychlor	--	--	--	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U
P,P'-DDD	0.0033	13	14	MG/KG	0.003 J	0.0071 U	0.0071 U	0.0073 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	**0.0071 J**	0.0071 U	0.0071 U	0.0073 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	**0.013 J**	0.0071 U	0.0071 U	0.0073 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.036 U	0.035 U	0.035 U	0.036 U
Toxaphene	--	--	--	MG/KG	0.073 U	0.071 U	0.071 U	0.073 U
trans-Chlordane	--	--	--	MG/KG	0.0073 U	0.0071 U	0.0071 U	0.0073 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-02	RXSB-02	RXSB-02	RXSB-03
			Sample Date:		06/30/2021	06/30/2021	06/30/2021	06/30/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.037 U	0.035 U	0.034 U	0.037 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.037 U	0.035 U	0.034 U	0.037 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0023 U	0.0021 U	0.0021 U	0.0022 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0023 U	0.0021 U	0.0021 U	0.0022 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
Chlordane (Technical)	--	--	--	MG/KG	0.075 U	0.071 U	0.069 U	0.075 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0023 U	0.0021 U	0.0021 U	0.0022 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0023 U	0.0021 U	0.0021 U	0.0022 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
Endrin	0.014	11	0.06	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
Endrin Aldehyde	--	--	--	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
Endrin Ketone	--	--	--	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0023 U	0.0021 U	0.0021 U	0.0022 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
Methoxychlor	--	--	--	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
P,P'-DDD	0.0033	13	14	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.037 U	0.035 U	0.034 U	0.037 U
Toxaphene	--	--	--	MG/KG	0.075 U	0.071 U	0.069 U	0.075 U
trans-Chlordane	--	--	--	MG/KG	0.0075 U	0.0071 U	0.0069 U	0.0075 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-03	RXSB-03	RXSB-03	RXSB-03
				Sample Date:	07/01/2021	07/01/2021	07/01/2021	07/01/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	14 - 16	23 - 25
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.037 U	0.037 U	0.035 U	0.038 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.037 U	0.037 U	0.035 U	0.038 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0022 U	0.0022 U	0.0021 U	0.0023 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0022 U	0.0022 U	0.0021 U	0.0023 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
Chlordane (Technical)	--	--	--	MG/KG	0.074 U	0.075 U	0.071 U	0.077 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0022 U	0.0022 U	0.0021 U	0.0023 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0022 U	0.0022 U	0.0021 U	0.0023 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
Endrin	0.014	11	0.06	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
Endrin Aldehyde	--	--	--	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
Endrin Ketone	--	--	--	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0022 U	0.0022 U	0.0021 U	0.0023 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
Methoxychlor	--	--	--	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
P,P'-DDD	0.0033	13	14	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.037 U	0.037 U	0.035 U	0.038 U
Toxaphene	--	--	--	MG/KG	0.074 U	0.075 U	0.071 U	0.077 U
trans-Chlordane	--	--	--	MG/KG	0.0074 U	0.0075 U	0.0071 U	0.0077 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-04	RXSB-04	RXSB-04	RXSB-04
			Sample Date:		07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.038 U	0.037 U	0.037 U	0.035 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.038 U	0.037 U	0.037 U	0.035 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0023 U	0.0022 U	0.0022 U	0.0021 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0023 U	0.0022 U	0.0022 U	0.0021 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
Chlordane (Technical)	--	--	--	MG/KG	0.077 U	0.075 U	0.074 U	0.071 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0023 U	0.0022 U	0.0022 U	0.0021 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0023 U	0.0022 U	0.0022 U	0.0021 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
Endrin	0.014	11	0.06	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
Endrin Aldehyde	--	--	--	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
Endrin Ketone	--	--	--	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0023 U	0.0022 U	0.0022 U	0.0021 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
Methoxychlor	--	--	--	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
P,P'-DDD	0.0033	13	14	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.038 U	0.037 U	0.037 U	0.035 U
Toxaphene	--	--	--	MG/KG	0.077 U	0.075 U	0.074 U	0.071 U
trans-Chlordane	--	--	--	MG/KG	0.0077 U	0.0075 U	0.0074 U	0.0071 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-04	RXSB-05	RXSB-05	RXSB-06
				Sample Date:	07/01/2021	07/06/2021	07/06/2021	07/07/2021
				Sample Depth (ft bls):	23 - 25	0 - 2	4 - 6	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.038 U	0.042 U	0.036 U	0.036 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.038 U	0.042 U	0.036 U	0.036 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0023 U	0.0025 U	0.0022 U	0.0022 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0023 U	0.0025 U	0.0022 U	0.0022 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
Chlordane (Technical)	--	--	--	MG/KG	0.076 U	0.085 U	0.073 U	0.073 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0023 U	0.0025 U	0.0022 U	0.0022 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0023 U	0.0025 U	0.0022 U	0.0022 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
Endrin	0.014	11	0.06	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
Endrin Aldehyde	--	--	--	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
Endrin Ketone	--	--	--	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0023 U	0.0025 U	0.0022 U	0.0022 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
Methoxychlor	--	--	--	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
P,P'-DDD	0.0033	13	14	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	0.0076 U	0.0085 U	0.0073 U	**0.014**
P,P'-DDT	**0.0033**	7.9	136	MG/KG	0.0076 U	0.0085 U	0.0073 U	**0.025**
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.038 U	0.042 U	0.036 U	0.036 U
Toxaphene	--	--	--	MG/KG	0.076 U	0.085 U	0.073 U	0.073 U
trans-Chlordane	--	--	--	MG/KG	0.0076 U	0.0085 U	0.0073 U	0.0073 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-06	RXSB-06	RXSB-06	RXSB-06
				Sample Date:	07/07/2021	07/07/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	4 - 6	10 - 12	14 - 16	23 - 25
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.036 U	0.035 U	0.035 U	0.04 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.036 U	0.035 U	0.035 U	0.04 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0021 U	0.0021 U	0.0021 U	0.0024 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0021 U	0.0021 U	0.0021 U	0.0024 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
Chlordane (Technical)	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0021 U	0.0021 U	0.0021 U	0.0024 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0021 U	0.0021 U	0.0021 U	0.0024 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
Endrin	0.014	11	0.06	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
Endrin Aldehyde	--	--	--	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
Endrin Ketone	--	--	--	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0021 U	0.0021 U	0.0021 U	0.0024 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
Methoxychlor	--	--	--	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
P,P'-DDD	0.0033	13	14	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	**0.0087**	0.007 U	0.0071 U	0.0081 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	**0.025**	0.007 U	0.0071 U	0.0081 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.036 U	0.035 U	0.035 U	0.04 U
Toxaphene	--	--	--	MG/KG	0.072 U	0.07 U	0.071 U	0.081 U
trans-Chlordane	--	--	--	MG/KG	0.0072 U	0.007 U	0.0071 U	0.0081 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-07	RXSB-07	RXSB-07	RXSB-07
			Sample Date:		07/08/2021	07/09/2021	07/09/2021	07/09/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.037 U	0.037 U	0.034 U	0.035 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.037 U	0.037 U	0.034 U	0.035 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0022 U	0.0022 U	0.0021 U	0.0021 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0022 U	0.0022 U	0.0021 U	0.0021 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
Chlordane (Technical)	--	--	--	MG/KG	0.074 U	0.074 U	0.069 U	0.071 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0022 U	0.0022 U	0.0021 U	0.0021 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0022 U	0.0022 U	0.0021 U	0.0021 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
Endrin	0.014	11	0.06	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
Endrin Aldehyde	--	--	--	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
Endrin Ketone	--	--	--	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0022 U	0.0022 U	0.0021 U	0.0021 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
Methoxychlor	--	--	--	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
P,P'-DDD	0.0033	13	14	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	**0.0047 J**	0.0074 U	0.0069 U	0.0071 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	**0.0062 J**	0.0074 U	0.0069 U	0.0071 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.037 U	0.037 U	0.034 U	0.035 U
Toxaphene	--	--	--	MG/KG	0.074 U	0.074 U	0.069 U	0.071 U
trans-Chlordane	--	--	--	MG/KG	0.0074 U	0.0074 U	0.0069 U	0.0071 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-08	RXSB-08	RXSB-08
				Sample Date:	07/09/2021	06/28/2021	06/28/2021	06/28/2021
				Sample Depth (ft bls):	23 - 25	0 - 2	4 - 6	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	FD
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.04 U	0.037 U	0.037 U	0.037 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.04 U	0.037 U	0.037 U	0.037 U
Aldrin	0.005	0.097	0.19	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0024 U	0.0022 U	0.0022 U	0.0022 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0024 U	0.0022 U	0.0022 U	0.0022 U
Beta Endosulfan	2.4	24	102	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
Chlordane (Technical)	--	--	--	MG/KG	0.08 U	0.075 U	0.074 U	0.074 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0024 U	0.0022 U	0.0022 U	0.0022 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0024 U	0.0022 U	0.0022 U	0.0022 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
Endrin	0.014	11	0.06	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
Endrin Aldehyde	--	--	--	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
Endrin Ketone	--	--	--	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0024 U	0.0022 U	0.0022 U	0.0022 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
Heptachlor Epoxide	--	--	--	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
Methoxychlor	--	--	--	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
P,P'-DDD	0.0033	13	14	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	0.008 U	0.0026 J	0.0074 U	0.0074 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	0.008 U	**0.0085**	0.0074 U	0.0074 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.04 U	0.037 U	0.037 U	0.037 U
Toxaphene	--	--	--	MG/KG	0.08 U	0.075 U	0.074 U	0.074 U
trans-Chlordane	--	--	--	MG/KG	0.008 U	0.0075 U	0.0074 U	0.0074 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-09	RXSB-09	RXSB-09	RXSB-09
			Sample Date:		06/29/2021	06/29/2021	06/29/2021	06/29/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.041 U	0.035 U	0.035 U	0.035 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.041 U	0.035 U	0.035 U	0.035 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0025 U	0.0021 U	0.0021 U	0.0021 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0025 U	0.0021 U	0.0021 U	0.0021 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
Chlordane (Technical)	--	--	--	MG/KG	0.083 U	0.071 U	0.071 U	0.071 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0025 U	0.0021 U	0.0021 U	0.0021 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0025 U	0.0021 U	0.0021 U	0.0021 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
Endrin	0.014	11	0.06	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
Endrin Aldehyde	--	--	--	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
Endrin Ketone	--	--	--	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0025 U	0.0021 U	0.0021 U	0.0021 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
Methoxychlor	--	--	--	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
P,P'-DDD	0.0033	13	14	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	**0.06**	0.0071 U	0.0071 U	0.0071 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.041 U	0.035 U	0.035 U	0.035 U
Toxaphene	--	--	--	MG/KG	0.083 U	0.071 U	0.071 U	0.071 U
trans-Chlordane	--	--	--	MG/KG	0.0083 U	0.0071 U	0.0071 U	0.0071 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-10	RXSB-10	RXSB-10	RXSB-10
			Sample Date:		06/29/2021	06/29/2021	06/29/2021	06/29/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.036 U	0.037 U	0.038 U	0.035 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.036 U	0.037 U	0.038 U	0.035 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0022 U	0.0022 U	0.0023 U	0.0021 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0022 U	0.0022 U	0.0023 U	0.0021 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
Chlordane (Technical)	--	--	--	MG/KG	0.073 U	0.075 U	0.076 U	0.07 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0022 U	0.0022 U	0.0023 U	0.0021 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0022 U	0.0022 U	0.0023 U	0.0021 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
Endrin	0.014	11	0.06	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
Endrin Aldehyde	--	--	--	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
Endrin Ketone	--	--	--	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0022 U	0.0022 U	0.0023 U	0.0021 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
Methoxychlor	--	--	--	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
P,P'-DDD	0.0033	13	14	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.036 U	0.037 U	0.038 U	0.035 U
Toxaphene	--	--	--	MG/KG	0.073 U	0.075 U	0.076 U	0.07 U
trans-Chlordane	--	--	--	MG/KG	0.0073 U	0.0075 U	0.0076 U	0.007 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-11	RXSB-11	RXSB-12	RXSB-12
				Sample Date:	07/02/2021	07/02/2021	07/06/2021	07/06/2021
				Sample Depth (ft bls):	0 - 2	0 - 2	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.036 U	0.036 U	0.037 U	0.036 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.036 U	0.036 U	0.037 U	0.036 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0021 U	0.0021 U	0.0022 U	0.0021 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0021 U	0.0021 U	0.0022 U	0.0021 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
Chlordane (Technical)	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0021 U	0.0021 U	0.0022 U	0.0021 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0021 U	0.0021 U	0.0022 U	0.0021 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
Endrin	0.014	11	0.06	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
Endrin Aldehyde	--	--	--	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
Endrin Ketone	--	--	--	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0021 U	0.0021 U	0.0022 U	0.0021 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
Methoxychlor	--	--	--	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
P,P'-DDD	0.0033	13	14	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.036 U	0.036 U	0.037 U	0.036 U
Toxaphene	--	--	--	MG/KG	0.072 U	0.072 U	0.074 U	0.071 U
trans-Chlordane	--	--	--	MG/KG	0.0072 U	0.0072 U	0.0074 U	0.0071 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-12	RXSB-12	RXSB-13	RXSB-13
				Sample Date:	07/06/2021	07/06/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	10 - 12	14 - 16	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.035 U	0.036 U	0.036 U	0.036 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.035 U	0.036 U	0.036 U	0.036 U
Aldrin	0.005	0.097	0.19	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0021 U	0.0021 U	0.0022 U	0.0022 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0021 U	0.0021 U	0.0022 U	0.0022 U
Beta Endosulfan	2.4	24	102	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
Chlordane (Technical)	--	--	--	MG/KG	0.07 U	0.072 U	0.073 U	0.073 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0021 U	0.0021 U	0.0022 U	0.0022 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0021 U	0.0021 U	0.0022 U	0.0022 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
Endrin	0.014	11	0.06	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
Endrin Aldehyde	--	--	--	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
Endrin Ketone	--	--	--	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0021 U	0.0021 U	0.0022 U	0.0022 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
Heptachlor Epoxide	--	--	--	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
Methoxychlor	--	--	--	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
P,P'-DDD	0.0033	13	14	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.035 U	0.036 U	0.036 U	0.036 U
Toxaphene	--	--	--	MG/KG	0.07 U	0.072 U	0.073 U	0.073 U
trans-Chlordane	--	--	--	MG/KG	0.007 U	0.0072 U	0.0073 U	0.0073 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-13	RXSB-13	RXSB-13	RXSB-14
			Sample Date:		07/07/2021	07/07/2021	07/07/2021	07/08/2021
			Sample Depth (ft bls):		10 - 12	14 - 16	23 - 25	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.035 U	0.035 U	0.038 U	0.035 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.035 U	0.035 U	0.038 U	0.035 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0021 U	0.0021 U	0.0023 U	0.0021 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0021 U	0.0021 U	0.0023 U	0.0021 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
Chlordane (Technical)	--	--	--	MG/KG	0.071 U	0.071 U	0.077 U	0.071 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0021 U	0.0021 U	0.0023 U	0.0021 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0021 U	0.0021 U	0.0023 U	0.0021 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
Endrin	0.014	11	0.06	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
Endrin Aldehyde	--	--	--	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
Endrin Ketone	--	--	--	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0021 U	0.0021 U	0.0023 U	0.0021 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
Methoxychlor	--	--	--	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
P,P'-DDD	0.0033	13	14	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.035 U	0.035 U	0.038 U	0.035 U
Toxaphene	--	--	--	MG/KG	0.071 U	0.071 U	0.077 U	0.071 U
trans-Chlordane	--	--	--	MG/KG	0.0071 U	0.0071 U	0.0077 U	0.0071 U

Table 8. Summary of Pesticides and Herbicides in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-14	RXSB-14	RXSB-14	RXSB-14
				Sample Date:	07/08/2021	07/08/2021	07/08/2021	07/08/2021
				Sample Depth (ft bls):	4 - 6	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use SCO	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units				
2,4-D (Dichlorophenoxyacetic Acid)	--	--	--	MG/KG	0.034 U	0.034 U	0.035 U	0.036 U
Acetic acid, (2,4,5-trichlorophenoxy)-	--	--	--	MG/KG	0.034 U	0.034 U	0.035 U	0.036 U
Aldrin	0.005	0.097	0.19	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.48	0.02	MG/KG	0.0021 U	0.0021 U	0.0021 U	0.0022 U
Alpha Endosulfan	2.4	24	102	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	0.09	MG/KG	0.0021 U	0.0021 U	0.0021 U	0.0022 U
Beta Endosulfan	2.4	24	102	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
Chlordane (Technical)	--	--	--	MG/KG	0.069 U	0.069 U	0.07 U	0.073 U
cis-Chlordane	0.094	4.2	2.9	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.25	MG/KG	0.0021 U	0.0021 U	0.0021 U	0.0022 U
Dieldrin	0.005	0.2	0.1	MG/KG	0.0021 U	0.0021 U	0.0021 U	0.0022 U
Endosulfan Sulfate	2.4	24	1000	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
Endrin	0.014	11	0.06	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
Endrin Aldehyde	--	--	--	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
Endrin Ketone	--	--	--	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
Gamma Bhc (Lindane)	0.1	1.3	0.1	MG/KG	0.0021 U	0.0021 U	0.0021 U	0.0022 U
Heptachlor	0.042	2.1	0.38	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
Heptachlor Epoxide	--	--	--	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
Methoxychlor	--	--	--	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
P,P'-DDD	0.0033	13	14	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
P,P'-DDE	**0.0033**	8.9	17	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
P,P'-DDT	**0.0033**	7.9	136	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U
Silvex (2,4,5-TP)	3.8	100	3.8	MG/KG	0.034 U	0.034 U	0.035 U	0.036 U
Toxaphene	--	--	--	MG/KG	0.069 U	0.069 U	0.07 U	0.073 U
trans-Chlordane	--	--	--	MG/KG	0.0069 U	0.0069 U	0.007 U	0.0073 U

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-01	RXSB-01	RXSB-01	RXSB-01
				Sample Date:	06/28/2021	06/28/2021	06/28/2021	06/28/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.041 U	0.04 U	0.04 U	0.039 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.051 U	0.05 U	0.049 U	0.049 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.014 J	0.01 U	0.01 U	0.0098 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.56 U	0.54 U	0.54 U	0.17 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.013 U	0.013 U	0.013 U	0.013 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.013 U	0.013 U	0.013 U	0.013 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.024 U	0.023 U	0.023 U	0.022 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.017 U	0.016 U	0.016 U	0.016 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.022 U	0.022 U	0.021 U	0.021 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.03 J	0.015 U	0.015 U	0.015 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.03 J	0.024 U	0.024 U	0.023 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.02 U	0.02 U	0.019 U	0.019 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.019 U	0.019 U	0.018 U	0.018 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.076 J	0.017 U	0.017 U	0.017 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.04 J	0.027 U	0.027 U	0.026 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.044 U	0.042 U	0.042 U	0.041 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.026 U	0.025 U	0.025 U	0.024 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.017 U	0.016 U	0.016 U	0.016 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.022 U	0.022 U	0.021 U	0.021 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.018 U	0.017 U	0.017 U	0.017 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.035 U	0.034 U	0.033 U	0.033 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.190	0.000	0.000	0.000

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-02	RXSB-02	RXSB-02	RXSB-03
				Sample Date:	06/30/2021	06/30/2021	06/30/2021	06/30/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	0 - 2
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.041 U	0.039 U	0.041 U	0.037 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.051 U	0.048 U	0.052 U	0.046 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.01 U	0.21 U	0.01 U	0.0093 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.18 U	0.53 U	0.56 U	0.5 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.013 U	0.013 J	0.013 U	0.012 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.013 U	0.013 U	0.013 U	0.012 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.023 U	0.022 U	0.024 U	0.021 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.017 U	0.016 U	0.017 U	0.015 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.022 U	0.021 U	0.022 U	0.02 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.016 U	0.019 J	0.016 U	0.014 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.024 U	0.023 U	0.025 U	0.022 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.02 U	0.019 U	0.02 U	0.018 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.019 U	0.018 U	0.019 U	0.017 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.018 J	0.017 U	0.018 U	0.016 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.028 U	0.026 U	0.028 U	0.025 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.043 U	0.041 U	0.044 U	0.039 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.026 U	0.024 U	0.026 U	0.023 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.017 U	0.016 U	0.017 U	0.015 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.022 U	0.021 U	0.022 U	0.02 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.018 U	0.017 U	0.018 U	0.016 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.034 U	0.033 U	0.035 U	0.031 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.018	0.032	0.000	0.000

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-03	RXSB-03	RXSB-03	RXSB-03
			Sample Date:		07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Depth (ft bls):		4 - 6	10 - 12	14 - 16	23 - 25
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.039 U	0.04 U	0.038 U	0.044 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.048 U	0.049 U	0.047 U	0.055 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.0098 U	0.21 U	0.0095 U	0.14 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.53 U	0.53 U	0.51 U	0.59 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.013 U	0.013 U	0.012 U	0.014 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.013 U	0.013 U	0.012 U	0.014 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.022 U	0.022 U	0.021 U	0.025 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.016 U	0.016 U	0.015 U	0.018 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.021 U	0.021 U	0.02 U	0.024 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.015 U	0.015 U	0.014 U	0.017 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.023 U	0.024 U	0.022 U	0.026 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.019 U	0.019 U	0.018 U	0.021 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.018 U	0.018 U	0.017 U	0.02 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.017 U	0.017 U	0.016 U	0.054 J
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.026 U	0.027 U	0.026 U	0.03 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.041 U	0.042 U	0.04 U	0.046 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.024 U	0.025 U	0.024 U	0.027 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.016 U	0.016 U	0.015 U	0.018 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.021 U	0.021 U	0.02 U	0.024 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.017 U	0.017 U	0.016 U	0.019 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.033 U	0.033 U	0.032 U	0.037 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.000	0.000	0.000	0.054

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-04	RXSB-04	RXSB-04	RXSB-04
			Sample Date:		07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Depth (ft bls):		0 - 2	4 - 6	10 - 12	14 - 16
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.042 U	0.041 U	0.039 U	0.039 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.052 U	0.051 U	0.049 U	0.048 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.01 U	0.01 U	0.0099 U	0.0098 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.56 U	0.56 U	0.17 U	0.17 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.014 U	0.013 U	0.013 U	0.013 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.014 U	0.013 U	0.013 U	0.013 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.024 U	0.023 U	0.022 U	0.022 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.017 U	0.017 U	0.016 U	0.016 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.023 U	0.022 U	0.021 U	0.021 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.016 U	0.016 U	0.015 U	0.015 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.025 U	0.025 U	0.023 U	0.023 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.02 U	0.02 U	0.019 U	0.019 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.019 U	0.019 U	0.018 U	0.018 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.018 U	0.038 J	0.018 J	0.017 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.028 U	0.028 U	0.027 U	0.026 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.044 U	0.044 U	0.041 U	0.041 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.026 U	0.026 U	0.024 U	0.024 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.017 U	0.017 U	0.016 U	0.016 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.023 U	0.022 U	0.021 U	0.021 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.018 U	0.018 U	0.017 U	0.017 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.035 U	0.035 U	0.033 U	0.033 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.000	0.038	0.018	0.000

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-04	RXSB-05	RXSB-05	RXSB-06
			Sample Date:		07/01/2021	07/06/2021	07/06/2021	07/07/2021
			Sample Depth (ft bls):		23 - 25	0 - 2	4 - 6	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.041 U	0.044 U	0.043 U	0.041 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.051 U	0.055 U	0.053 U	0.05 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.22 U	0.011 U	0.011 U	0.01 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.18 U	0.19 U	0.19 U	0.18 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.013 U	0.014 U	0.014 U	0.013 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.013 U	0.014 U	0.014 U	0.013 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.023 U	0.025 U	0.024 U	0.023 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.017 U	0.018 U	0.017 U	0.016 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.022 U	0.024 U	0.023 U	0.022 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.015 U	0.017 U	0.016 U	0.015 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.024 U	0.026 U	0.026 U	0.024 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.02 U	0.021 U	0.021 U	0.02 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.019 U	0.02 U	0.02 U	0.019 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.089 J	0.019 U	0.019 U	0.018 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.028 U	0.03 U	0.029 U	0.027 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.043 U	0.046 U	0.045 U	0.043 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.025 U	0.027 U	0.027 U	0.025 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.017 U	0.018 U	0.017 U	0.016 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.022 U	0.024 U	0.023 U	0.022 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.018 U	0.019 U	0.019 U	0.018 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.034 U	0.037 U	0.036 U	0.034 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.089	0.000	0.000	0.000

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-06	RXSB-06	RXSB-06	RXSB-06
			Sample Date:		07/07/2021	07/07/2021	07/07/2021	07/07/2021
			Sample Depth (ft bls):		4 - 6	10 - 12	14 - 16	23 - 25
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.04 U	0.043 U	0.041 U	0.046 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.05 U	0.053 U	0.051 U	0.057 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.01 U	0.011 U	0.01 U	0.012 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.17 U	0.19 U	0.18 U	0.2 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.013 U	0.014 U	0.013 U	0.015 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.013 U	0.014 U	0.013 U	0.015 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.023 U	0.024 U	0.023 U	0.026 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.016 U	0.017 U	0.016 U	0.019 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.022 U	0.023 U	0.022 U	0.025 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.015 U	0.016 U	0.015 U	0.017 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.024 U	0.026 U	0.024 U	0.027 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.019 U	0.021 U	0.02 U	0.022 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.018 U	0.02 U	0.019 U	0.021 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.017 U	0.019 U	0.018 U	0.02 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.027 U	0.029 U	0.027 U	0.031 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.042 U	0.045 U	0.043 U	0.049 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.025 U	0.027 U	0.025 U	0.029 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.016 U	0.017 U	0.016 U	0.019 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.022 U	0.023 U	0.022 U	0.025 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.017 U	0.019 U	0.018 U	0.02 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.033 U	0.036 U	0.034 U	0.039 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.000	0.000	0.000	0.000

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-07	RXSB-07	RXSB-07
				Sample Date:	07/08/2021	07/09/2021	07/09/2021	07/09/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.43 U	0.4 U	0.38 U	0.39 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.86 U	0.8 U	0.76 U	0.78 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.21 U	0.2 U	0.19 U	0.19 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.64 U	0.6 U	0.57 U	0.58 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.64 U	0.6 U	0.57 U	0.58 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.000	0.000	0.000	0.000

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-07	RXSB-08	RXSB-08	RXSB-08
				Sample Date:	07/09/2021	06/28/2021	06/28/2021	06/28/2021
				Sample Depth (ft bls):	23 - 25	0 - 2	4 - 6	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	FD
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.23 U	0.041 U	0.041 U	0.041 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.23 U	0.051 U	0.05 U	0.051 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.45 U	0.01 U	0.01 U	0.01 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.9 U	0.18 U	0.18 U	0.18 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.23 U	0.013 U	0.013 U	0.013 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.23 U	0.013 U	0.013 U	0.013 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.23 U	0.023 U	0.023 U	0.023 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.23 U	0.017 U	0.016 U	0.017 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.23 U	0.022 U	0.022 U	0.022 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.23 U	0.015 U	0.015 U	0.015 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.23 U	0.024 U	0.024 U	0.024 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.23 U	0.02 U	0.02 U	0.02 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.23 U	0.019 U	0.019 U	0.019 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.23 U	0.018 U	0.018 U	0.018 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.23 U	0.028 U	0.027 U	0.028 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.23 U	0.043 U	0.043 U	0.043 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.23 U	0.025 U	0.025 U	0.025 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.23 U	0.017 U	0.016 U	0.017 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.23 U	0.022 U	0.022 U	0.022 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.68 U	0.018 U	0.018 U	0.018 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.68 U	0.034 U	0.034 U	0.034 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.000	0.000	0.000	0.000

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-09	RXSB-09	RXSB-09	RXSB-09
				Sample Date:	06/29/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.041 U	0.038 U	0.038 U	0.039 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.051 U	0.047 U	0.047 U	0.048 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.01 U	0.0096 U	0.0094 U	0.0098 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.55 U	0.17 U	0.16 U	0.17 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.013 U	0.012 U	0.012 U	0.013 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.013 U	0.012 U	0.012 U	0.013 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.023 U	0.022 U	0.021 U	0.022 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.017 U	0.015 U	0.015 U	0.016 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.022 U	0.021 U	0.02 U	0.021 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.015 U	0.014 U	0.014 U	0.015 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.024 U	0.023 U	0.022 U	0.023 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.02 U	0.019 U	0.018 U	0.019 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.019 U	0.018 U	0.017 U	0.018 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.018 U	0.017 U	0.016 U	0.017 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.028 U	0.026 U	0.025 U	0.026 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.043 U	0.04 U	0.04 U	0.041 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.025 U	0.024 U	0.023 U	0.024 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.017 U	0.015 U	0.015 U	0.016 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.022 U	0.021 U	0.02 U	0.021 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.018 U	0.017 U	0.016 U	0.017 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.034 U	0.032 U	0.031 U	0.033 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.000	0.000	0.000	0.000

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-10	RXSB-10	RXSB-10	RXSB-10
				Sample Date:	06/29/2021	06/29/2021	06/29/2021	06/29/2021
				Sample Depth (ft bls):	0 - 2	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.039 U	0.041 U	0.042 U	0.038 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.048 U	0.051 U	0.052 U	0.047 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.0098 U	0.01 U	0.01 U	0.0096 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.17 U	0.56 U	0.56 U	0.17 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.013 U	0.013 U	0.014 U	0.012 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.013 U	0.013 U	0.014 U	0.012 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.022 U	0.023 U	0.024 U	0.022 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.016 U	0.017 U	0.017 U	0.015 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.021 U	0.022 U	0.023 U	0.021 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.015 U	0.016 U	0.016 U	0.014 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.023 U	0.024 U	0.025 U	0.023 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.019 U	0.02 U	0.02 U	0.018 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.018 U	0.019 U	0.019 U	0.017 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.017 U	0.018 U	0.018 U	0.016 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.026 U	0.028 U	0.028 U	0.026 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.041 U	0.043 U	0.044 U	0.04 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.024 U	0.026 U	0.026 U	0.024 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.016 U	0.017 U	0.017 U	0.015 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.021 U	0.022 U	0.023 U	0.021 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.017 U	0.018 U	0.018 U	0.016 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.033 U	0.034 U	0.035 U	0.032 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.000	0.000	0.000	0.000

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-11	RXSB-11	RXSB-12	RXSB-12
				Sample Date:	07/08/2021	07/08/2021	07/06/2021	07/06/2021
				Sample Depth (ft bls):	0 - 2	0 - 2	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.21 U	0.21 U	0.041 U	0.039 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.21 U	0.21 U	0.05 U	0.048 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.43 U	0.42 U	0.01 U	0.0098 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.86 U	0.84 U	0.18 U	0.17 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.21 U	0.21 U	0.013 U	0.013 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.21 U	0.21 U	0.013 U	0.013 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.21 U	0.21 U	0.023 U	0.022 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.21 U	0.21 U	0.016 U	0.016 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.21 U	0.21 U	0.022 U	0.021 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.21 U	0.21 U	0.015 U	0.015 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.21 U	0.21 U	0.024 U	0.023 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.21 U	0.21 U	0.02 U	0.019 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.21 U	0.21 U	0.019 U	0.018 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.21 U	0.21 J	0.018 U	0.017 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.21 U	0.21 U	0.027 U	0.026 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.21 U	0.21 U	0.043 U	0.041 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.21 U	0.21 U	0.025 U	0.024 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.21 U	0.21 U	0.016 U	0.016 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.21 U	0.21 U	0.022 U	0.021 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.64 U	0.63 U	0.018 U	0.017 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.64 U	0.63 U	0.034 U	0.033 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.000	0.210	0.000	0.000

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-12	RXSB-12	RXSB-13	RXSB-13
				Sample Date:	07/06/2021	07/06/2021	07/07/2021	07/07/2021
				Sample Depth (ft bls):	10 - 12	14 - 16	0 - 2	4 - 6
				Normal Sample or Field Duplicate:	N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.037 U	0.039 U	0.046 U	0.046 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.046 U	0.049 U	0.057 U	0.057 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.0093 U	0.0099 U	0.012 U	0.012 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.16 U	0.17 U	0.2 J	0.22 J
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.012 U	0.013 U	0.015 U	0.015 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.012 U	0.013 U	0.015 U	0.015 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.021 U	0.022 U	0.026 U	0.026 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.015 U	0.016 U	0.019 U	0.019 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.02 U	0.021 U	0.025 U	0.025 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.014 U	0.015 U	0.017 U	0.017 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.022 U	0.023 U	0.027 U	0.027 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.018 U	0.019 U	0.022 U	0.022 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.017 U	0.018 U	0.021 U	0.021 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.016 U	0.017 U	0.02 U	0.02 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.025 U	0.027 U	0.031 U	0.031 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.039 U	0.041 U	0.049 U	0.048 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.023 U	0.024 U	0.029 U	0.028 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.015 U	0.016 U	0.019 U	0.019 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.02 U	0.021 U	0.025 U	0.025 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.016 U	0.017 U	0.02 U	0.02 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.031 U	0.033 U	0.039 U	0.038 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.000	0.000	0.200	0.220

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

			Sample Designation:		RXSB-13	RXSB-13	RXSB-13	RXSB-14
			Sample Date:		07/07/2021	07/07/2021	07/07/2021	07/08/2021
			Sample Depth (ft bls):		10 - 12	14 - 16	23 - 25	0 - 2
			Normal Sample or Field Duplicate:		N	N	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.04 U	0.047 U	0.047 U	0.22 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.05 U	0.058 U	0.059 U	0.22 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.01 U	0.012 U	0.012 U	0.45 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.17 U	0.2 U	0.21 U	0.89 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.013 U	0.015 U	0.015 U	0.22 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.013 U	0.015 U	0.015 U	0.22 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.023 U	0.026 U	0.027 U	0.22 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.016 U	0.019 U	0.019 U	0.22 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.022 U	0.025 U	0.026 U	0.22 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.015 U	0.018 U	0.018 U	0.22 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.024 U	0.028 U	0.028 U	0.22 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.02 U	0.023 U	0.023 U	0.22 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.018 U	0.021 U	0.022 U	0.22 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.017 U	0.02 U	0.021 U	0.22 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.027 U	0.032 U	0.032 U	0.22 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.042 U	0.049 U	0.05 U	0.22 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.025 U	0.029 U	0.029 U	0.22 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.016 U	0.019 U	0.019 U	0.22 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.022 U	0.025 U	0.026 U	0.22 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.017 U	0.02 U	0.021 U	0.67 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.034 U	0.039 U	0.04 U	0.67 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.000	0.000	0.000	0.000

Table 9. Summary of Per- and Polyfluoroalkyl Substances in Soil
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

				Sample Designation:	RXSB-14	RXSB-14	RXSB-14	RXSB-14
				Sample Date:	07/08/2021	07/08/2021	07/08/2021	07/08/2021
				Sample Depth (ft bls):	4 - 6	4 - 6	10 - 12	14 - 16
				Normal Sample or Field Duplicate:	N	FD	N	N
Parameter	NYSDEC Part 375 Unrestricted Use GV	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units				
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluorobutanesulfonic acid (PFBS)	--	--	--	UG/KG	0.41 U	0.39 U	0.41 U	0.4 U
Perfluorobutanoic Acid	--	--	--	UG/KG	0.82 U	0.78 U	0.82 U	0.81 U
Perfluorodecane Sulfonic Acid	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluorodecanoic acid (PFDA)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluorododecanoic acid (PFDoA)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluoroheptane Sulfonate (PFHPS)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluoroheptanoic acid (PFHpA)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluorohexanesulfonic acid (PFHxS)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluorohexanoic acid (PFHxA)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluorononanoic acid (PFNA)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluorooctane Sulfonamide (FOSA)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluorooctanesulfonic acid (PFOS)	0.88	44	3.7	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluorooctanoic acid (PFOA)	0.66	33	1.1	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluoropentanoic Acid (PFPeA)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluorotetradecanoic acid (PFTA)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluorotridecanoic Acid (PFTriA)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Perfluoroundecanoic Acid (PFUnA)	--	--	--	UG/KG	0.21 U	0.2 U	0.21 U	0.2 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	--	UG/KG	0.62 U	0.59 U	0.62 U	0.6 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	--	UG/KG	0.62 U	0.59 U	0.62 U	0.6 U
Total PFAS (PFOA + PFOS)	--	--	--	UG/KG	0.000	0.000	0.000	0.000

Table 10. Summary of Volatile Organic Compounds in Groundwater
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

		Sample Designation:	RXMW-1	RXMW-2	RXMW-03	RXMW-03	RXMW-04	RXMW-05	RXMW-06
		Sample Date:	07/16/2021	07/16/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021
		Normal Sample or Field Duplicate:	N	N	N	FD	N	N	N
Parameter	NYSDEC Ambient Water Quality Standards and Guidance Values	Units							
1,1,1-Trichloroethane (TCA)	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	**5**	UG/L	1 U	1 U	1 U	1 U	**360**	1 U	0.63 J
1,2-Dibromo-3-Chloropropane	0.04	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	3	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	0.6	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene (Mesitylene)	**5**	UG/L	1 U	1 U	1 U	1 U	**140**	1 U	1.2
1,3-Dichlorobenzene	3	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	3	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Hexanone	50	UG/L	5 U	5 U	5 U	5 U	5 UT	5 UT	5 UT
Acetone	50	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	1	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	50	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	50	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	5	UG/L	1 U	1 U	1 U	1 U	1 UT	1 UT	1 UT
Carbon Disulfide	60	UG/L	1 U	0.87 J	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	**7**	UG/L	4.3	2.3	1.8	1.7	1 U	**7.5**	6.5
Chloromethane	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table 10. Summary of Volatile Organic Compounds in Groundwater
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

		Sample Designation:	RXMW-1	RXMW-2	RXMW-03	RXMW-03	RXMW-04	RXMW-05	RXMW-06
		Sample Date:	07/16/2021	07/16/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021
		Normal Sample or Field Duplicate:	N	N	N	FD	N	N	N
Parameter	NYSDEC Ambient Water Quality Standards and Guidance Values	Units							
Cis-1,2-Dichloroethylene	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,3-Dichloropropene	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	--	UG/L	1 U	1 U	1 U	1 U	46	1 U	1 U
Dibromochloromethane	50	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene (Cumene)	**5**	UG/L	1 U	1 U	1 U	1 U	**24**	1 U	1 U
m,p-Xylene	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Acetate	--	UG/L	5 UT	5 UT	5 U	5 U	5 U	5 U	5 U
Methyl Ethyl Ketone (2-Butanone)	50	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylcyclohexane	--	UG/L	1 U	1 U	1 U	1 U	140	1 U	44
Methylene Chloride	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
N-Butylbenzene	**5**	UG/L	1 U	1 U	1 U	1 U	**29**	1 U	**8.3**
N-Propylbenzene	**5**	UG/L	1 U	1 U	1 U	1 U	**55**	1 U	1 U
O-Xylene (1,2-Dimethylbenzene)	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Sec-Butylbenzene	**5**	UG/L	1 U	1 U	1 U	1 U	**9.8**	1 U	2.9
Styrene	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
T-Butylbenzene	5	UG/L	1 U	1 U	1 U	1 U	0.74 J	1 U	1 U
Tert-Butyl Methyl Ether	10	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethylene (PCE)	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-Dichloroethene	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	--	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethylene (TCE)	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	2	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes	5	UG/L	2 U	2 U	1 U	1 U	1 U	1 U	1 U

Table 11. Summary of Semivolatile Organic Compounds in Groundwater
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

		Sample Designation:	RXMW-1	RXMW-2	RXMW-03	RXMW-03	RXMW-04	RXMW-05	RXMW-06
		Sample Date:	07/16/2021	07/16/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021
		Normal Sample or Field Duplicate:	N	N	N	FD	N	N	N
Parameter	NYSDEC Ambient Water Quality Standards and Guidance Values	Units							
1,2,4,5-Tetrachlorobenzene	5	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dioxane (P-Dioxane)	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,3,4,6-Tetrachlorophenol	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	5	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	10	UG/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4-Dinitrotoluene	5	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2,6-Dinitrotoluene	5	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Chloronaphthalene	10	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	--	UG/L	10 U	10 U	10 U	10 U	1.4 J	10 U	10 U
2-Methylphenol (O-Cresol)	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	5	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	5	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	5	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4,6-Dinitro-2-Methylphenol	--	UG/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Bromophenyl Phenyl Ether	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-Methylphenol	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	5	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl Phenyl Ether	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol (P-Cresol)	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	5	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	--	UG/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acenaphthene	20	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	20	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	--	UG/L	10 U	10 U	10 UT	10 UT	10 UT	10 UT	10 UT
Anthracene	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 11. Summary of Semivolatile Organic Compounds in Groundwater
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

		Sample Designation:	RXMW-1	RXMW-2	RXMW-03	RXMW-03	RXMW-04	RXMW-05	RXMW-06
		Sample Date:	07/16/2021	07/16/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021
		Normal Sample or Field Duplicate:	N	N	N	FD	N	N	N
Parameter	NYSDEC Ambient Water Quality Standards and Guidance Values	Units							
Atrazine	7.5	UG/L	2 UT	2 UT	2 U	2 U	2 U	2 U	2 U
Benzaldehyde	--	UG/L	10 UT	10 UT	10 U	10 U	10 U	10 U	10 U
Benzo(A)Anthracene	0.002	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzo(A)Pyrene	0	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzo(B)Fluoranthene	0.002	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzo(G,H,I)Perylene	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(K)Fluoranthene	0.002	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzyl Butyl Phthalate	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Biphenyl (Diphenyl)	5	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-Chloroethoxy) Methane	5	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	1	UG/L	1 U	1 U	1 UT	1 UT	1 UT	1 UT	1 UT
Bis(2-Chloroisopropyl) Ether	5	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-Ethylhexyl) Phthalate	5	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	1 J
Caprolactam	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	2 J
Chrysene	0.002	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Cresols, M & P	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(A,H)Anthracene	--	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibenzofuran	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl Phthalate	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl Phthalate	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-N-Butyl Phthalate	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-N-Octylphthalate	--	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	0.5	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorocyclopentadiene	5	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Indeno(1,2,3-C,D)Pyrene	0.002	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U

Table 11. Summary of Semivolatile Organic Compounds in Groundwater
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

		Sample Designation:	RXMW-1	RXMW-2	RXMW-03	RXMW-03	RXMW-04	RXMW-05	RXMW-06
		Sample Date:	07/16/2021	07/16/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021
		Normal Sample or Field Duplicate:	N	N	N	FD	N	N	N
Parameter	NYSDEC Ambient Water Quality Standards and Guidance Values	Units							
Isophorone	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10	UG/L	2 U	2 U	2 U	2 U	1.7 J	2 U	2 U
Nitrobenzene	0.4	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
N-Nitrosodi-N-Propylamine	--	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
N-Nitrosodiphenylamine	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	UG/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Phenanthrene	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	1	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50	UG/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 12. Summary of Metals in Groundwater
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

		Sample Designation:	RXMW-1	RXMW-1	RXMW-2	RXMW-2	RXMW-03	RXMW-03	RXMW-03	RXMW-03	RXMW-04
		Sample Date:	07/16/2021	07/16/2021	07/16/2021	07/16/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021
		Normal Sample or Field Duplicate:	N	N	N	N	N	N	FD	FD	N
		Total or Dissolved:	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total
Parameter	NYSDEC Ambient Water Quality Standards and Guidance Values	Units									
Aluminum	--	UG/L	520	158	20.1 J	40 U	56.4	40 U	96.7	40 U	71.7
Antimony	3	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Arsenic	25	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Barium	1000	UG/L	98.7	91.5	93.6	91.8	148	138	144	146	57.5
Beryllium	3	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Cadmium	5	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Calcium	--	UG/L	115000	116000	101000	107000	106000	100000	106000	106000	32600
Chromium III	--	UG/L	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Chromium, Hexavalent	50	UG/L	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Chromium, Total	50	UG/L	5.5	4 U	4 U	4 U	4 U	9.8	4 U	4 U	4 U
Cobalt	--	UG/L	0.72 J	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Copper	200	UG/L	4 U	4 U	4 U	4 U	4 U	4 U	3.2 J	4 U	4 U
Cyanide	200	UG/L	8.2 J	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Iron	**300**	UG/L	**682**	144	120 U	120 U	64.6 J	120 U	169	120 U	**410**
Lead	25	UG/L	1.2 U	1.2 U	2.1	1.3	1.7	1.2 U	4.2	1.2 U	1.1 J
Magnesium	**35000**	UG/L	**38100**	**38500**	**38500**	**40700**	**42600**	**39300**	**41000**	**41100**	11000
Manganese	**300**	UG/L	38.5	8.5	111	106	86.9	131	154	151	**534**
Mercury	0.7	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U	0.4 U	0.2 U	0.2 U
Nickel	100	UG/L	2.1 J	3 J	1.2 J	1.3 J	1.6 J	1.4 J	2.3 J	1.8 J	1.1 J
Potassium	--	UG/L	3630	3710	3440	3480	3520	3780	4030	4100	2980
Selenium	10	UG/L	1.9 J	1.9 J	2.2 J	2.6	1.9 J	1.7 J	1.9 J	1.8 J	2.5 U
Silver	50	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Sodium	**20000**	UG/L	**222000**	**225000**	**139000**	**140000**	**213000**	**195000**	**198000**	**200000**	**72400**
Thallium	0.5	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Vanadium	--	UG/L	1.4 J	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Zinc	2000	UG/L	16 U	16 U	10.8 J	6.9 J	16 U	13.1 J	16 U	8.2 J	16 U

Table 12. Summary of Metals in Groundwater
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Sample Designation:			RXMW-04	RXMW-05	RXMW-05	RXMW-06	RXMW-06
Sample Date:			07/15/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021
Normal Sample or Field Duplicate:			N	N	N	N	N
Total or Dissolved:			Dissolved	Total	Dissolved	Total	Dissolved
Parameter	NYSDEC Ambient Water Quality Standards and Guidance Values	Units					
Aluminum	--	UG/L	40 U	68.9	40 U	31 J	40 U
Antimony	3	UG/L	2 U	2 U	2 U	2 U	2 U
Arsenic	25	UG/L	2 U	2 U	2 U	2 U	2 U
Barium	1000	UG/L	54.9	145	139	6	62.4
Beryllium	3	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Cadmium	5	UG/L	2 U	2 U	2 U	2 U	2 U
Calcium	--	UG/L	31800	88000	87000	6400	40700
Chromium III	--	UG/L	NA	10 U	NA	10 U	NA
Chromium, Hexavalent	50	UG/L	NA	10 U	NA	10 U	NA
Chromium, Total	50	UG/L	4 U	4 U	4 U	4 U	4 U
Cobalt	--	UG/L	4 U	4 U	4 U	4 U	4 U
Copper	200	UG/L	4 U	4 U	4 U	4 U	4 U
Cyanide	200	UG/L	NA	10 U	NA	10 U	NA
Iron	**300**	UG/L	120 U	72.9 J	120 U	62 J	120 U
Lead	25	UG/L	0.89 J	1.2 U	1.2 U	1.4	1.1 J
Magnesium	**35000**	UG/L	10200	**36200**	**35200**	15900	15500
Manganese	**300**	UG/L	**488**	69.3	63.1	36.8	**378**
Mercury	0.7	UG/L	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
Nickel	100	UG/L	4 U	1.3 J	1 J	0.92 J	0.99 J
Potassium	--	UG/L	2820	3910	3760	4240	3860
Selenium	10	UG/L	0.76 J	0.84 J	1.1 J	1 J	1 J
Silver	50	UG/L	2 U	2 U	2 U	2 U	2 U
Sodium	**20000**	UG/L	**69600**	**100000**	**101000**	**135000**	**75200**
Thallium	0.5	UG/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Vanadium	--	UG/L	4 U	4 U	4 U	4 U	4 U
Zinc	2000	UG/L	29.2	16 U	7.6 J	16 U	24.6

Table 13. Summary of Polychlorinated Biphenyls in Groundwater
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Sample Designation:			RXMW-1	RXMW-2	RXMW-03	RXMW-03	RXMW-04	RXMW-05	RXMW-06
Sample Date:			07/16/2021	07/16/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021
Normal Sample or Field Duplicate:			N	N	N	FD	N	N	N
Parameter	NYSDEC Ambient Water Quality Standards and Guidance Values	Units							
PCB-1016 (Aroclor 1016)	--	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1221 (Aroclor 1221)	--	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1232 (Aroclor 1232)	--	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1242 (Aroclor 1242)	--	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1248 (Aroclor 1248)	--	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1254 (Aroclor 1254)	--	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1260 (Aroclor 1260)	--	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1262 (Aroclor 1262)	--	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
PCB-1268 (Aroclor 1268)	--	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Polychlorinated Biphenyl (PCBs)	0.09	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U

Table 14. Summary of Pesticides and Herbicides in Groundwater
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

		Sample Designation:	RXMW-1	RXMW-2	RXMW-03	RXMW-03	RXMW-04	RXMW-05	RXMW-06
		Sample Date:	07/16/2021	07/16/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021
		Normal Sample or Field Duplicate:	N	N	N	FD	N	N	N
Parameter	NYSDEC Ambient Water Quality Standards and Guidance Values	Units							
2,4-D (Dichlorophenoxyacetic Acid)	50	UG/L	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Acetic acid, (2,4,5-trichlorophenoxy)-	35	UG/L	1.2 U	1.2 U	1.2 UT	1.2 UT	1.2 UT	1.2 UT	1.2 UT
Aldrin	0	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.01	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Alpha Endosulfan	--	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.04	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Beta Endosulfan	--	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cis-Chlordane	--	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Dieldrin	0.004	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Endosulfan Sulfate	--	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Endrin	0	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Endrin Aldehyde	5	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Endrin Ketone	5	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Gamma Bhc (Lindane)	0.05	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Heptachlor	0.04	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Heptachlor Epoxide	0.03	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Methoxychlor	35	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
P,P'-DDD	0.3	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
P,P'-DDE	0.2	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
P,P'-DDT	0.2	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Silvex (2,4,5-TP)	0.26	UG/L	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Toxaphene	0.06	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-Chlordane	0	UG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U

Table 15. Summary of Per- and Polyfluoroalkyl Substances in Groundwater
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Sample Designation:			RXMW-1	RXMW-2	RXMW-2	RXMW-03	RXMW-04	RXMW-05	RXMW-06
Sample Date:			07/16/2021	07/16/2021	07/16/2021	07/15/2021	07/15/2021	07/15/2021	07/15/2021
Normal Sample or Field Duplicate:			N	N	FD	N	N	N	N
Parameter	NYSDEC Drinking Water MCL	Units							
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	NG/L	0.47 U	0.53 U	0.52 U	0.47 U	0.51 U	0.5 U	0.47 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	NG/L	0.39 U	0.44 U	0.44 U	0.39 U	0.42 U	0.42 U	0.39 U
Perfluorobutanesulfonic acid (PFBS)	--	NG/L	5.83	10.3	10.9	99.7	4.23	0.42 U	4.16
Perfluorobutanoic Acid	--	NG/L	10.6	14.8	15.2	25.2	656	13	14.2
Perfluorodecane Sulfonic Acid	--	NG/L	0.39 U	0.44 U	0.44 U	0.39 U	0.42 U	0.42 U	0.39 U
Perfluorodecanoic acid (PFDA)	--	NG/L	0.39 U	0.44 U	0.44 U	0.39 U	0.42 U	0.42 U	0.39 U
Perfluorododecanoic acid (PFDoA)	--	NG/L	0.39 U	0.44 U	0.44 U	0.39 U	0.42 U	0.42 U	0.39 U
Perfluoroheptane Sulfonate (PFHPS)	--	NG/L	0.39 U	0.44 U	0.44 U	0.39 U	0.42 U	0.42 U	0.39 U
Perfluoroheptanoic acid (PFHpA)	--	NG/L	10.6	11.5	11.7	6.6	5.3	6.61	4.22
Perfluorohexanesulfonic acid (PFHxS)	--	NG/L	5.84	7.54	7.83	2.7	1.19 J	1.53 J	1.07 J
Perfluorohexanoic acid (PFHxA)	--	NG/L	19.3	34.1	34.6	17.5	11.2	0.42 U	10.8
Perfluorononanoic acid (PFNA)	--	NG/L	0.86 J	0.84 J	0.88 J	1.53 J	0.67 J	1.37 J	1.47 J
Perfluorooctane Sulfonamide (FOSA)	--	NG/L	0.39 U	0.44 U	0.44 U	0.41 J	0.42 U	0.42 U	0.39 U
Perfluorooctanesulfonic acid (PFOS)	**10**	NG/L	8.76	**10.4**	**11.3**	**10.7**	8.03	**18.2**	**11.6**
Perfluorooctanoic acid (PFOA)	**10**	NG/L	**14.8**	**22.9**	**22.7**	**14.3**	**21.5**	**20**	**16**
Perfluoropentanoic Acid (PFPeA)	--	NG/L	21.6	41.1	44	24.9	13.3	24.1	13.9
Perfluorotetradecanoic acid (PFTA)	--	NG/L	0.39 U	0.44 U	0.44 U	0.39 U	0.42 U	0.42 U	0.39 U
Perfluorotridecanoic Acid (PFTriA)	--	NG/L	0.39 U	0.44 U	0.44 U	0.39 U	0.42 U	0.42 U	0.39 U
Perfluoroundecanoic Acid (PFUnA)	--	NG/L	0.39 U	0.44 U	0.44 U	0.39 U	0.42 U	0.42 U	0.39 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	NG/L	0.79 U	0.89 U	0.87 U	0.78 U	0.84 U	0.84 U	0.78 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	NG/L	1.58 U	1.77 U	1.75 U	1.55 U	1.69 U	1.68 U	1.56 U
Total PFAS (PFOA + PFOS)	--	NG/L	98.19	153.48	170.01	203.54	721.42	84.81	77.42

Table 16. Summary of Volatile Organic Compounds in Soil Vapor
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Sample Designation:		RXSS-01	RXSS-02	RXSS-03	RXSS-04	RXSV-01	RXSV-02	RXSV-03	RXSV-04	RXSV-05	RXSV-06	RXSV-07
Sample Date:		07/15/2021	07/15/2021	07/15/2021	12/21/2021	07/16/2021	07/15/2021	07/15/2021	07/15/2021	07/16/2021	07/16/2021	12/21/2021
Parameter	Units											
1,1,1-Trichloroethane (TCA)	UG/M3	1.1 U	1.1 U	1.1 U	0.79 U	11 U	**0.56 J**	1.1 U	**1.6**	11 U	**3.8 J**	0.81 U
1,1,2,2-Tetrachloroethane	UG/M3	1.4 U	1.4 U	1.4 U	0.99 U	14 U	1.4 U	1.4 U	1.4 U	14 U	14 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	1.5 U	**0.54 J**	1.5 U	1.1 U	15 U	1.5 U	1.5 U	1.5 U	15 U	15 U	1.1 U
1,1,2-Trichloroethane	UG/M3	1.1 U	1.1 U	1.1 U	0.79 U	11 U	1.1 U	1.1 U	1.1 U	11 U	11 U	0.81 U
1,1-Dichloroethane	UG/M3	0.81 U	0.81 U	0.81 U	0.58 U	8.1 U	0.81 U	0.81 U	0.81 U	8.1 U	8.1 U	0.6 U
1,1-Dichloroethene	UG/M3	0.2 U	0.2 U	0.2 U	0.14 U	2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.15 U
1,2,4-Trichlorobenzene	UG/M3	3.7 U	3.7 U	3.7 U	1.1 U	37 U	3.7 U	3.7 U	3.7 U	37 U	37 U	1.1 U
1,2,4-Trimethylbenzene	UG/M3	**4.1**	**1.9**	**3.3**	**48 D**	9.8 U	**5**	0.98 U	**5.1**	**5.1 J**	9.8 U	**18 D**
1,2-Dibromoethane (Ethylene Dibromide)	UG/M3	1.5 U	1.5 U	1.5 U	1.1 U	15 U	1.5 U	1.5 U	1.5 U	15 U	15 U	1.1 U
1,2-Dichlorobenzene	UG/M3	1.2 U	1.2 U	1.2 U	0.87 U	12 U	1.2 U	1.2 U	1.2 U	12 U	12 U	0.9 U
1,2-Dichloroethane	UG/M3	0.81 U	**2**	0.81 U	0.58 U	8.1 U	0.81 U	0.81 U	0.81 U	8.1 U	8.1 U	0.6 U
1,2-Dichloropropane	UG/M3	0.92 U	0.92 U	0.92 U	0.67 U	9.2 U	0.92 U	0.92 U	0.92 U	9.2 U	9.2 U	0.69 U
1,2-Dichlorotetrafluoroethane	UG/M3	1.4 U	1.4 U	1.4 U	1 U	14 U	1.4 U	1.4 U	1.4 U	14 U	14 U	1 U
1,3,5-Trimethylbenzene (Mesitylene)	UG/M3	0.98 U	**0.67 J**	0.98 U	**18 D**	9.8 U	**1.7**	0.98 U	**3.8**	**20**	9.8 U	**5.4 D**
1,3-Butadiene	UG/M3	0.44 U	0.44 U	0.44 U	0.99 U	4.4 U	0.44 U	0.44 U	0.44 U	4.4 U	4.4 U	0.99 U
1,3-Dichlorobenzene	UG/M3	1.2 U	1.2 U	1.2 U	0.87 U	12 U	1.2 U	1.2 U	1.2 U	12 U	12 U	0.9 U
1,4-Dichlorobenzene	UG/M3	1.2 U	1.2 U	1.2 U	0.87 U	12 U	1.2 U	1.2 U	1.2 U	12 U	12 U	0.9 U
1,4-Dioxane (P-Dioxane)	UG/M3	18 U	18 U	18 U	1 U	180 U	18 U	18 U	18 U	180 U	180 U	1.1 U
2,2,4-Trimethylpentane	UG/M3	**0.37 J**	**1.7**	**0.47 J**	NA	**3.3 J**	**14**	**1.7**	**11**	**1200**	**9.3**	NA
2-Chlorotoluene	UG/M3	1 U	1 U	1 U	NA	10 U	1 U	1 U	1 U	10 U	10 U	NA
2-Hexanone	UG/M3	2 U	2 U	2 U	1.2 U	20 U	**1.9 J**	2 U	**1.2 J**	20 U	20 U	**1.6 D**
4-Ethyltoluene	UG/M3	0.98 U	**0.51 J**	0.98 U	**32 D**	9.8 U	**0.66 J**	0.98 U	**3.8**	**6.3 J**	9.8 U	**23 D**
Acetone	UG/M3	**17**	**49**	**20**	**50 D**	120 U	**11 J**	**36**	**13**	120 U	**55 J**	**7.5 D**
Allyl Chloride (3-Chloropropene)	UG/M3	1.6 U	1.6 U	1.6 U	2.3 U	16 U	1.6 U	1.6 U	1.6 U	16 U	16 U	2.3 U
Benzene	UG/M3	0.64 U	**0.95**	**0.93**	**3.1 D**	6.4 U	**0.9**	0.64 U	**1.5**	6.4 U	6.4 U	**9.7 D**
Benzyl Chloride	UG/M3	1 U	1 U	1 U	0.75 U	10 U	1 U	1 U	1 U	10 U	10 U	0.77 U
Bromodichloromethane	UG/M3	1.3 U	1.3 U	1.3 U	0.97 U	13 U	1.3 U	1.3 U	**0.9 J**	13 U	**31**	1 U
Bromoform	UG/M3	2.1 U	2.1 U	2.1 U	1.5 U	21 U	2.1 U	2.1 U	2.1 U	21 U	21 U	1.5 U
Bromomethane	UG/M3	0.78 U	0.78 U	0.78 U	0.56 U	7.8 U	0.78 U	0.78 U	0.78 U	7.8 U	7.8 U	0.58 U
Butane	UG/M3	**3.8**	**110 D**	**3.4**	NA	12 U	**3.2**	**6.6**	**3.7**	**21**	**14**	NA
Carbon Disulfide	UG/M3	**5.1**	**7.5**	**3.4**	**1.1 D**	16 U	**2.6**	**1.1 J**	**5.6**	**11 J**	16 U	**0.84 D**
Carbon Tetrachloride	UG/M3	**0.51**	**0.46**	0.22 U	0.23 U	2.2 U	0.22 U	0.22 U	0.22 U	2.2 U	2.2 U	0.23 U
Chlorobenzene	UG/M3	0.92 U	0.92 U	0.92 U	0.66 U	9.2 U	0.92 U	0.92 U	0.92 U	9.2 U	9.2 U	0.69 U
Chlorodifluoromethane	UG/M3	**4.2**	**1.7 J**	1.8 U	NA	**10 J**	1.8 U	**3.2**	**1.6 J**	18 U	18 U	NA
Chloroethane	UG/M3	1.3 U	1.3 U	1.3 U	0.38 U	13 U	1.3 U	1.3 U	1.3 U	13 U	13 U	0.39 U
Chloroform	UG/M3	**0.33 J**	**0.33 J**	0.98 U	0.7 U	9.8 U	**2.4**	**17**	**54**	**34**	**400**	0.73 U
Chloromethane	UG/M3	1 U	**1.6**	1 U	**0.42 D**	10 U	1 U	1 U	1 U	10 U	10 U	0.31 U
Cis-1,2-Dichloroethylene	UG/M3	0.2 U	0.2 U	0.2 U	0.14 U	2 U	0.2 U	**0.64**	0.2 U	2 U	2 U	0.15 U
Cis-1,3-Dichloropropene	UG/M3	0.91 U	0.91 U	0.91 U	0.65 U	9.1 U	0.91 U	0.91 U	0.91 U	9.1 U	9.1 U	0.68 U
Cyclohexane	UG/M3	**1.7**	**3.5**	**2.1**	**1 D**	6.9 U	**7.9**	**21**	**4.9**	**38**	**5.6 J**	**8.7 D**
Cymene	UG/M3	1.1 U	1.1 U	1.1 U	NA	11 U	1.1 U	1.1 U	1.1 U	**2.2 J**	11 U	NA
Dibromochloromethane	UG/M3	1.7 U	1.7 U	1.7 U	1.2 U	17 U	1.7 U	1.7 U	1.7 U	17 U	17 U	1.3 U
Dichlorodifluoromethane	UG/M3	**3.1**	**2.9**	**2.3 J**	**2.4 D**	25 U	**2.7**	**2.5**	**2.2 J**	25 U	25 U	**2.1 D**
Ethyl Acetate	UG/M3	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	1.1 U
Ethylbenzene	UG/M3	**1.1**	**2.4**	**1.2**	**3.6 D**	8.7 U	**1.7**	0.87 U	**3**	8.7 U	8.7 U	**29 D**
Hexachlorobutadiene	UG/M3	2.1 U	2.1 U	2.1 U	1.5 U	21 U	2.1 U	2.1 U	2.1 U	21 U	21 U	1.6 U
Isopropanol	UG/M3	**3 J**	**18**	**6.5 J**	**4.4 J-**	120 U	12 U	**8.8 J**	12 U	120 U	120 U	**1.2 UJ**
Isopropylbenzene (Cumene)	UG/M3	0.98 U	**0.32 J**	0.98 U	NA	9.8 U	**0.55 J**	0.98 U	**0.58 J**	**6.8 J**	9.8 U	NA
m,p-Xylene	UG/M3	**4.7**	**9.3**	**4.6**	NA	22 U	**5.6**	2.2 U	**28**	**25**	**14 J**	NA
Methyl Ethyl Ketone (2-Butanone)	UG/M3	**3.5**	**8.7**	**3.9**	**12 D**	15 U	**2.6**	**0.97 J**	**2.1**	15 U	15 U	**5.4 D**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	UG/M3	2 U	2 U	2 U	**0.95 D**	20 U	**1.1 J**	2 U	2 U	20 U	20 U	0.61 U
Methyl Methacrylate	UG/M3	2 U	2 U	2 U	0.59 U	20 U	2 U	2 U	2 U	20 U	20 U	0.61 U
Methylene Chloride	UG/M3	1.7 U	**4.4**	1.7 U	1 U	17 U	1.7 U	1.7 U	1.7 U	17 U	17 U	**3.1 D**
M-P-Xylene	UG/M3	NA	NA	NA	**16 D**	NA	NA	NA	NA	NA	NA	**81 D**
Naphthalene	UG/M3	2.6 U	**1.8 J**	2.6 U	NA	26 U	**1.6 J**	2.6 U	2.6 U	26 U	26 U	NA
N-Butylbenzene	UG/M3	1.1 U	1.1 U	1.1 U	NA	11 U	1.1 U	1.1 U	1.1 U	11 U	11 U	NA
N-Heptane	UG/M3	**2**	**19**	**2.3**	**4.2 D**	8.2 U	**4.4**	**1.1**	**3.4**	**210**	**7 J**	**25 D**
N-Hexane	UG/M3	**12**	**12**	**11**	**2.3 D**	18 U	**4.2**	**4.8**	1.8 U	**31**	18 U	**23 D**
N-Propylbenzene	UG/M3	0.98 U	**0.45 J**	0.98 U	NA	9.8 U	**0.59 J**	0.98 U	**0.65 J**	**6.3 J**	9.8 U	NA
O-Xylene (1,2-Dimethylbenzene)	UG/M3	**2.1**	**3.5**	**2.3**	**8.1 D**	8.7 U	**3.9**	0.87 U	**6.4**	**23**	8.7 U	**29 D**
Propylene	UG/M3	NA	NA	NA	**3.3 D**	NA	NA	NA	NA	NA	NA	**1.8 D**
Sec-Butylbenzene	UG/M3	1.1 U	1.1 U	1.1 U	NA	11 U	1.1 U	1.1 U	1.1 U	11 U	11 U	NA
Styrene	UG/M3	**2.4**	**2**	**2.2**	0.61 U	8.5 U	0.85 U	0.85 U	0.85 U	8.5 U	8.5 U	0.64 U

Table 16. Summary of Volatile Organic Compounds in Soil Vapor
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Sample Designation:		RXSS-01	RXSS-02	RXSS-03	RXSS-04	RXSV-01	RXSV-02	RXSV-03	RXSV-04	RXSV-05	RXSV-06	RXSV-07
Sample Date:		07/15/2021	07/15/2021	07/15/2021	12/21/2021	07/16/2021	07/15/2021	07/15/2021	07/15/2021	07/16/2021	07/16/2021	12/21/2021
Parameter	Units											
T-Butylbenzene	UG/M3	1.1 U	1.1 U	1.1 U	NA	11 U	1.1 U	1.1 U	1.1 U	11 U	11 U	NA
Tert-Butyl Alcohol	UG/M3	**21**	**16**	**18**	NA	150 U	15 U	15 U	15 U	150 U	150 U	NA
Tert-Butyl Methyl Ether	UG/M3	0.72 U	0.72 U	0.72 U	0.52 U	7.2 U	0.72 U	0.72 U	0.72 U	7.2 U	7.2 U	0.54 U
Tetrachloroethylene (PCE)	UG/M3	**4.4**	1.4 U	**7.8**	**3.6 D**	**19**	**65**	**11**	**56**	**34**	**86**	**13 D**
Tetrahydrofuran	UG/M3	15 U	15 U	15 U	0.85 U	150 U	15 U	15 U	15 U	150 U	150 U	0.88 U
Toluene	UG/M3	**8.5**	**25**	**10**	**5.4 D**	**6.5 J**	**4.7**	**1.7**	**15**	7.5 U	**45**	**110 D**
Trans-1,2-Dichloroethene	UG/M3	0.79 U	0.79 U	0.79 U	0.57 U	7.9 U	0.79 U	0.79 U	0.79 U	7.9 U	7.9 U	0.59 U
Trans-1,3-Dichloropropene	UG/M3	0.91 U	0.91 U	0.91 U	0.65 U	9.1 U	0.91 U	0.91 U	0.91 U	9.1 U	9.1 U	0.68 U
Trichloroethylene (TCE)	UG/M3	0.2 U	0.2 U	0.2 U	**0.23 D**	2 U	0.2 U	**47**	0.2 U	2 U	2 U	0.2 U
Trichlorofluoromethane	UG/M3	**2**	**1.4**	**2**	**1.3 D**	11 U	**2.1**	**2.4**	**2**	11 U	11 U	**1.5 D**
Vinyl Acetate	UG/M3	NA	NA	NA	0.51 U	NA	NA	NA	NA	NA	NA	0.53 U
Vinyl Bromide	UG/M3	0.87 U	0.87 U	0.87 U	0.63 U	8.7 U	0.87 U	0.87 U	0.87 U	8.7 U	8.7 U	0.65 U
Vinyl Chloride	UG/M3	0.2 U	0.2 U	0.2 U	0.18 U	2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.19 U

Table 17. Cost Estimate for Remedial Alternative 1, Track 1 Cleanup
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Item	Description	Estimated Quantity	Unit	Unit Price	Cost
Capital Costs					
SITE PREPARATION					
	Mobilization/Demobilization	1	LS	$ 260,000	$ 260,000
	Utility Investigation	1	LS	$ 10,000	$ 10,000
	Demolition and Abatement	1	LS	$ 490,000	$ 490,000
	Soil Staging Area, Decon Pad	1	LS	$ 50,000	$ 50,000
	Permitting	1	LS	$ 125,000	$ 125,000
	Security	1	LS	$ 110,000	$ 110,000
SOIL EXCAVATION/BACKFILL					
	Support of Excavation	1	LS	$ 860,000	$ 860,000
	Soil Excavation and Handling (0-16 ft bls)	17,500	CY	$ 30	$ 525,000
	Hotspot Soil Excavation and Handling (16-27 ft bls)	3,000	CY	$ 30	$ 90,000
	Import Certified-Clean Fill	3,000	CY	$ 30	$ 90,000
	Backfill and Compaction of Certified Clean Fill	3,000	CY	$ 15	$ 45,000
	Dust Suppression	4	month	$ 10,000	$ 40,000
	UST Decommissioning/Removal	1	LS	$ 12,000	$ 12,000
	Surveying	1	LS	$ 7,800	$ 7,800
GROUNDWATER TREATMENT/MONITORING					
	Dewatering/Treatment System (Capital Cost)	1	LS	$ 54,000	$ 54,000
	Dewatering/Treatment System (Equipment Rental + O&M)	3	week	$ 10,000	$ 30,000
	Provision and Placement of Chemical Reagant	1	LS	$ 75,000	$ 75,000
	Groundwater Monitoring Well Installation	1	LS	$ 21,000	$ 21,000
	Groundwater Monitoring Well Abandonment	1	LS	$ 12,500	$ 12,500
SOIL VAPOR MITIGATION					
	Provision and Installation of Vapor Barrier (20-mil)	29,500	SF	$ 4.50	$ 132,750
TRANSPORTATION/DISPOSAL					
	Non-Hazardous Solid Waste Transportation and Disposal	30,750	tons	$ 75	$ 2,306,250
	Carbon Transport and Disposal (Dewatering System)	1	LS	$ 23,400	$ 23,400
	NYCDEP Discharge Fee	1	LS	$ 45,000	$ 45,000
FIELD SUPERVISION/CONSULTING FEES					
	Backfill Sampling for VOCs	6	each	$ 90	$ 540
	Backfill Sampling for all other parameters	3	each	$ 1,190	$ 3,570
	Confirmation Sampling	35	each	$ 1,280	$ 44,800
	Air Monitoring, Field Oversight, Engineering Support/Disposal Coordination	79	day	$ 2,750	$ 217,250
	SWPPP Inspections	15	week	$ 1,500	$ 22,500
INSTITUTIONAL CONTROLS					
	Environmental Easement	1	LS	$ 10,000	$ 10,000
BCP REPORTING/RECORD KEEPING					
	Monthly Reporting, Fact Sheets, Citizen Participation Activities	4	month	$ 4,500	$ 18,000
	Monitoring Plan	1	LS	$ 15,000	$ 15,000
	Final Engineering Report	1	LS	$ 50,000	$ 50,000
	Subtotal				$ 5,796,360
	Contingency	15%			$ 869,454
	TOTAL CAPITAL COST				**$ 6,665,814**
Annual Monitoring Cost					
	Semi-Annual Monitoring	2	event	$ 6,000	$ 12,000
	Reporting	1	LS	$ 6,500	$ 6,500
	Administration for ICs	1	LS	$ 5,000	$ 5,000
	Total Annual Monitoring Costs				$ 23,500
	Estimated Present Value Total (Years 1-5) Monitoring Costs				$ 96,355
	TOTAL PRESENT VALUE COSTS				**$ 6,762,169**

Assumptions

1. Mobilization/Demobilization assumed to be 5% of construction cost.
2. Excavation to a minimum of 16 feet below land surface plus deeper excavation in hotspot areas (16-27') to meet UUSCOs.
3. Two hotspot areas each 40' x 40'. Assumes additional 20% of soil removed during hotspot excavations to meet UUSCOs.
4. Deeper hotspot excavations will require backfill to meet design grades. Backfill material will be imported certified clean fill.
5. Removal of one (1) 2,500 gal fuel oil tank plus four (4) 500-gal gasoline tanks.
6. Dewatering flow rate will average 90 gallons per minute.
7. Confirmation sampling frequency of 1 bottom sample per 1,500 SF + der-10 sampling frequency for hot spots + QA/QC samples at rate of 1/20.
8. Installation of 3 groundwater monitoring wells for post-remediation monitoring program.
9. Assumes 7% discount factor for Net Present Value costs.

Table 18. Cost Estimate for Remedial Alternative 2, Track 2 Cleanup
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Item	Description	Estimated Quantity	Unit	Unit Price	Cost
Capital Costs					
SITE PREPARATION					
	Mobilization/Demobilization	1	LS	$ 210,000	$ 210,000
	Utility Investigation	1	LS	$ 10,000	$ 10,000
	Demolition and Abatement	1	LS	$ 490,000	$ 490,000
	Soil Staging Area, Decon Pad	1	LS	$ 50,000	$ 50,000
	Permitting	1	LS	$ 125,000	$ 125,000
	Security	1	LS	$ 80,000	$ 80,000
SOIL EXCAVATION/BACKFILL					
	Support of Excavation	1	LS	$ 760,000	$ 760,000
	Soil Excavation and Handling (15 ft bls)	16,400	CY	$ 30	$ 492,000
	Dust Suppression	3	month	$ 10,000	$ 30,000
	UST Decommissioning/Removal	1	LS	$ 12,000	$ 12,000
	Surveying	1	LS	$ 7,800	$ 7,800
GROUNDWATER TREATMENT/MONITORING					
	Dewatering/Treatment System (Capital Cost)	1	LS	$ 29,000	$ 29,000
	Dewatering/Treatment System (Equipment Rental + O&M)	2	week	$ 10,000	$ 20,000
	Groundwater Monitoring Well Installation	1	LS	$ 21,000	$ 21,000
	Groundwater Monitoring Well Abandonment	1	LS	$ 12,500	$ 12,500
SOIL VAPOR MITIGATION					
	Provision and Installation of Vapor Barrier (20-mil)	29,500	SF	$ 4.50	$ 132,750
	Soil Vapor Monitoring Point Installation	1	LS	$ 7,500	$ 7,500
	Soil Vapor Monitoring Point Abandonment	1	LS	$ 3,750	$ 3,750
TRANSPORTATION/DISPOSAL					
	Non-Hazardous Solid Waste Transportation and Disposal	24,600	tons	$ 75	$ 1,845,000
	Carbon Transport and Disposal (Dewatering System)	1	LS	$ 11,700	$ 11,700
	NYCDEP Discharge Fee	1	LS	$ 22,000	$ 22,000
FIELD SUPERVISION/CONSULTING FEES					
	Documentation Sampling	20	each	$ 1,280	$ 25,600
	Air Monitoring, Field Oversight, Engineering Support/Disposal Coordination	58	day	$ 2,750	$ 159,500
	SWPPP Inspections	11	week	$ 1,500	$ 16,500
INSTITUTIONAL CONTROLS					
	Environmental Easement	1	LS	$ 15,000	$ 15,000
BCP REPORTING/RECORD KEEPING					
	Monthly Reporting, Fact Sheets, Citizen Participation Activities	3	month	$ 4,500	$ 13,500
	Site Management Plan	1	LS	$ 25,000	$ 25,000
	Final Engineering Report	1	LS	$ 50,000	$ 50,000
	Subtotal				$ 4,677,100
	Contingency	15%			$ 701,565
	TOTAL CAPITAL COST				**$ 5,378,665**
Annual Monitoring Cost					
	Semi-Annual Monitoring	2	event	$ 7,000	$ 14,000
	Reporting	1	LS	$ 7,500	$ 7,500
	Administration for ICs	1	LS	$ 5,000	$ 5,000
	Total Annual Monitoring Costs				$ 26,500
	Estimated Present Value Total (Years 1-5) Monitoring Costs				$ 108,655
	TOTAL PRESENT VALUE COSTS				**$ 5,487,320**

Assumptions

1. Mobilization/Demobilization assumed to be 5% of construction cost.
2. Excavation to a maximum of 15 feet below land surface.
3. No backfill required.
4. Removal of one (1) 2,500 gal fuel oil tank plus four (4) 500-gal gasoline tanks.
5. Dewatering flow rate will average 50 gallons per minute.
6. Documentation sampling frequency of 1 bottom sample per 1,500 SF.
7. Installation of 3 groundwater monitoring wells and 3 soil vapor monitoring points.

Table 19. List of Required Permits
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Regulatory Agency	Permit
NYCDEP	Dewatering Permit (for temporary discharge during construction)
NYCDEP	Sewer Certification and Sewer Permit (for new building connection)
NYCDOB	Demolition Permit
NYCDOB	New Building (NB) Permit
NYCDOB	Fence Permit
NYCDOB	Foundation/Earthwork Permit
NYCDOB	Builder's Paving Plan
NYCDOB	Underground Plumbing Permit
NYCDOT	Sidewalk Opening Permit (for monitoring well installation)
NYCDPR	Building Plan Review (street trees)
NYSDEC	Long Island Well Permit

Note: This list only accounts for permits required from the street level and below and bulhead. Permits for aboveground portions of the building are not listed.

NYCDEP - New York City Department of Environmental Protection
NYCDOB - New York City Department of Buildings
NYCDOT - New York City Department of Buildings
NYCDPR - New York City Department of Parks & Recreation
NYSDEC - New York State Department of Environmental Conservation

Table 20. Summary of Soil Cleanup Objectives
580 Gerard Former Post Office Vehicle Repair Shop Site - NYSDEC BCP Site No. C203142
580-610 Gerard Avenue, Bronx, New York

Parameter	CAS Number	Units	Track 1 Soil Cleanup Objectives[1]	Track 2 Soil Cleanup Objectives[2]
Volatile Organic Compounds				
1,1,1-Trichloroethane	71-55-6	mg/kg	0.68	0.68
1,1-Dichloroethane	75-34-3	mg/kg	0.27	0.27
1,1-Dichloroethene	75-35-4	mg/kg	0.33	0.33
1,2,4-Trimethylbenzene	95-63-6	mg/kg	3.6	3.6
1,2-Dichlorobenzene	95-50-1	mg/kg	1.1	1.1
1,2-Dichloroethane	107-06-2	mg/kg	0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	mg/kg	8.4	8.4
1,3-Dichlorobenzene	541-73-1	mg/kg	2.4	2.4
1,4-Dichlorobenzene	106-46-7	mg/kg	1.8	1.8
1,4-Dioxane	123-91-1	mg/kg	0.1	0.1
2-Butanone (MEK)	78-93-3	mg/kg	0.12	0.12
Acetone	67-64-1	mg/kg	0.05	0.05
Benzene	71-43-2	mg/kg	0.06	0.06
Carbon tetrachloride	56-23-5	mg/kg	0.76	0.76
Chlorobenzene	108-90-7	mg/kg	1.1	1.1
Chloroform	67-66-3	mg/kg	0.37	0.37
cis-1,2-Dichloroethene	156-59-2	mg/kg	0.25	0.25
Ethylbenzene	100-41-4	mg/kg	1	1
Methylene Chloride	75-09-2	mg/kg	0.05	0.05
MTBE	1634-04-4	mg/kg	0.93	0.93
Napthalene	91-20-3	mg/kg	12	12
n-Butylbenzene	104-51-8	mg/kg	12	12
n-Propylbenzene	103-65-1	mg/kg	3.9	3.9
sec-Butylbenzene	135-98-8	mg/kg	11	11
tert-Butylbenzene	98-06-6	mg/kg	5.9	5.9
Tetrachloroethene	127-18-4	mg/kg	1.3	1.3
Toluene	108-88-3	mg/kg	0.7	0.7
trans-1,2-Dichloroethene	156-60-5	mg/kg	0.19	0.19
Trichloroethene	79-01-6	mg/kg	0.47	0.47
Vinyl chloride	75-01-4	mg/kg	0.02	0.02
Xylenes (total)	1330-20-7	mg/kg	0.26	1.6
Semivolatile Organic Compounds				
2-Methylphenol	95-48-7	mg/kg	0.33	0.33
3-Methylphenol	108-39-4	mg/kg	0.33	0.33
4-Methylphenol	106-44-5	mg/kg	0.33	0.33
Acenaphthene	83-32-9	mg/kg	20	98
Acenaphthylene	208-96-8	mg/kg	100	100
Anthracene	120-12-7	mg/kg	100	100
Benzo[a]anthracene	56-55-3	mg/kg	1	1
Benzo[a]pyrene	50-32-8	mg/kg	1	1
Benzo[b]fluoranthene	205-99-2	mg/kg	1	1
Benzo[g,h,i]perylene	191-24-2	mg/kg	100	100
Benzo[k]fluoranthene	207-08-9	mg/kg	0.8	1.7
Chrysene	218-01-9	mg/kg	1	1
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.33	0.33
Dibenzofuran	132-64-9	mg/kg	7	59
Fluoranthene	206-44-0	mg/kg	100	100
Fluorene	86-73-7	mg/kg	30	100
Hexachlorobenzene	118-74-1	mg/kg	0.33	1.2
Indeno[1,2,3-cd]pyrene	193-39-5	mg/kg	0.5	0.5
Naphthalene	91-20-3	mg/kg	12	12
Pentachlorophenol	87-86-5	mg/kg	0.8	0.8
Phenanthrene	85-01-8	mg/kg	100	100
Phenol	108-95-2	mg/kg	0.33	0.33
Pyrene	129-00-0	mg/kg	100	100
Metals (Inorganics)				
Arsenic	7440-38-2	mg/kg	13	16
Barium	7440-39-3	mg/kg	350	400
Beryllium	7440-41-7	mg/kg	7.2	47
Cadmium	7440-43-9	mg/kg	2.5	4.3
Chromium	7440-47-3	mg/kg	30	180
Chromium, Hexavalent	18540-29-9	mg/kg	1	19
Chromium, Trivalent	16065-83-1	mg/kg	30	180
Copper	7440-50-8	mg/kg	50	270
Cyanide	57-12-5	mg/kg	27	27
Lead	7439-92-1	mg/kg	63	400
Manganese	7439-96-5	mg/kg	1600	2000
Mercury	7439-97-6	mg/kg	0.18	0.73
Nickel	7440-02-0	mg/kg	30	130
Selenium	7782-49-2	mg/kg	3.9	4
Silver	7440-22-4	mg/kg	2	8.3
Zinc	7440-66-6	mg/kg	109	2480
Polychlorinated biphenyls (PCBs)				
Polychlorinated biphenyls (PCBs) - total	1336-36-3	mg/kg	0.1	1
Pesticides and Herbicides				
2,4,5-TP	93-72-1	mg/kg	3.8	3.8
4,4'-DDD	72-54-8	mg/kg	0.0033	13
4,4'-DDE	72-55-9	mg/kg	0.0033	8.9
4,4'-DDT	50-29-3	mg/kg	0.0033	7.9
Aldrin	309-00-2	mg/kg	0.005	0.097
alpha-BHC	319-84-6	mg/kg	0.02	0.02
alpha-Chlordane	5103-71-9	mg/kg	0.094	2.9
beta-BHC	319-85-7	mg/kg	0.036	0.09
delta-BHC	319-86-8	mg/kg	0.04	0.25
Dieldrin	60-57-1	mg/kg	0.005	0.1
Endosulfan I	959-98-8	mg/kg	2.4	24
Endosulfan II	33213-65-9	mg/kg	2.4	24
Endosulfan sulfate	1031-07-8	mg/kg	2.4	24
Endrin	72-20-8	mg/kg	0.014	0.06
gamma-BHC (Lindane)	58-89-9	mg/kg	0.1	0.1
Heptachlor	76-44-8	mg/kg	0.042	0.38
Per- and Polyfluoroalkyl Substances (PFAS)				
Perfluorooctanoic Acid (PFOA)	335-67-1	µg/kg	1	1
Perfluorooctane Sulfonate (PFOS)	1763-23-1	µg/kg	1	1

Notes:
[1] Track 1 SCOs will be the NYSDEC Part 375 Unrestricted Use SCOs.
[1] Track 2 SCOs for the Track 2 areas are the lower of the NYSDEC Part 375 Protection of Groundwater or Restricted Residential Use SCOs.
[2] Track 1 and Track 2 SCOs for PFAS are based on the NYSDEC Sampling, Analysis and Assessment of PFAS Guidelines dated January 2021. If PFOA or PFOS is detected in any sample at or above the SCO then the soil will be tested by SPLP and the leachate analyzed for PFAS. The SCO for SPLP testing will be 10 ppt.
mg/kg - milligrams per kilogram
µg/kg - micrograms per kilogram
NYSDEC - New York State Department of Environmental Conservation
SCOs - Soil Cleanup Objectives
SPLP - Synthetic Precipitation LeachingProcedure

TABLE 21

Project Management/Health and Safety Personnel

Title	Contact	Telephone/Cell
SB Gerard Avenue LLC (Owner)		
Project Manager	Steven Wilkowski	(718) 326-2808
Roux Environmental Engineering and Geology, D.P.C.		
Project Principal	Robert Kovacs	(631) 630-2320
Project Manager	Jessica Lam	(631) 630-2349
Field Manager/Site Safety Officer	TBD	
Corporate Health and Safety Manager	Brian Hobbs	(631) 630-2419
Office Health and Safety Manager	Kristina DeLuca	(631) 630-2406

Emergency Phone Numbers

Emergency Medical Service 911

Police: New York City Police Department (NYPD).....911

Fire: New York City Fire Department (FDNY) 911

Hospital: Lincoln Medical Center 718-579-5000

National Response Center.....800-424-8802

Poison Control Center.....800-222-1222

CHEMTREC® 800-262-8200

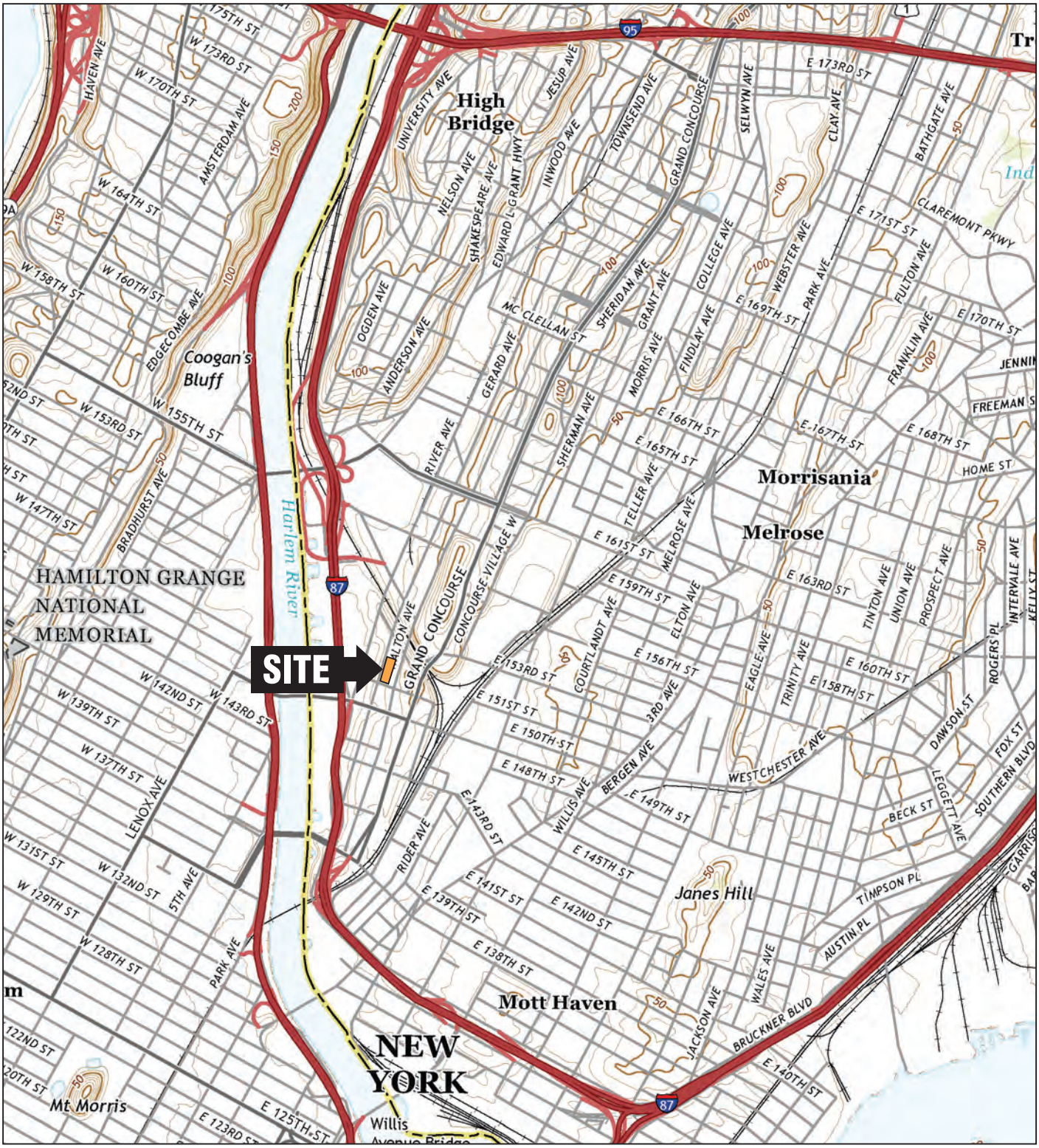
Centers for Disease Control.....800-311-3435

USEPA (Region II).....212-637-5000

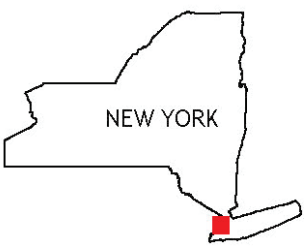
NYSDEC Emergency Spill Response.....800-457-7362

FIGURES

1. Site Location Map
2. Site Plan with Sample Locations
3. Groundwater Elevation Contours
4. Truck Route Map
5. Soil Sample Exceedances of Unrestricted Use Soil Cleanup Objectives
6. Soil Sample Exceedances of Protection of Groundwater and Restricted Residential Use Soil Cleanup Objectives
7. Groundwater Sample Exceedances of the AWQSGVs
8. Soil Vapor Sample Detections
9. Remedial Alternative 1 (Track 1 Unrestricted Use)
10. Remedial Alternative 2 (Track 1 Unrestricted Use and Track 2 and/or 4 Restricted Use)



QUADRANGLE LOCATION



SOURCE:
USGS; 2019, Central Park, NY-NJ
7.5 Minute Topographic Quadrangle

N

0 2000'

Title:

SITE LOCATION MAP

580 GERARD AVENUE
BRONX, NEW YORK

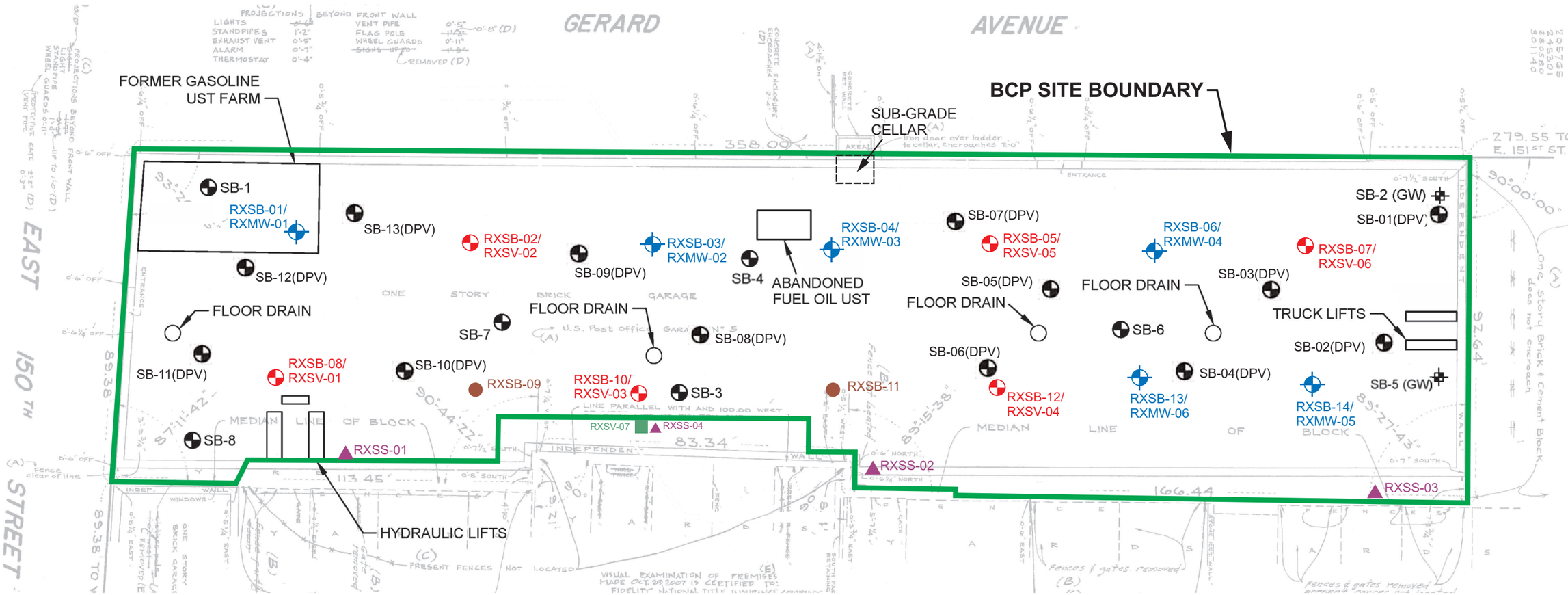
Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: J.L.	Date: 01OCT21	FIGURE
Prepared by: B.H.C..	Scale: AS SHOWN	1
Project Mgr: J.L.	Project: 3523.0001Y000	
File: 3523.0001Y107.01.CDR		

\3523Y\0001Y\107\3523.0001Y107.01.CDR



30’ 0 30’

LEGEND

- RXSB-09 — RI SOIL BORING LOCATION AND DESIGNATION
- RXSB-01/ RXMW-01 — RI SOIL BORING AND GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- RXSB-01/ RXSV-01 — RI SOIL BORING AND SOIL VAPOR SAMPLE LOCATION AND DESIGNATION
- RXSS-01 — RI SUB-SLAB VAPOR SAMPLE LOCATION AND DESIGNATION
- RXSV-07 — RI SOIL VAPOR SAMPLE LOCATION AND DESIGNATION
- SB-1 — PREVIOUS SOIL BORING SAMPLE LOCATION AND DESIGNATION
- SB-2 (GW) — PREVIOUS SOIL/GROUNDWATER SAMPLE LOCATION AND DESIGNATION

NOTES

1. BCP - BROWNFIELD CLEANUP PROGRAM
2. RI - REMEDIAL INVESTIGATION

SOURCE:

1. PLAN BASED ON MAP PREPARED BY EARL B. LOVELL - S.P. BELCHER, INC

Title:

SITE PLAN WITH SAMPLE LOCATIONS

580 GERARD AVENUE
BRONX, NEW YORK

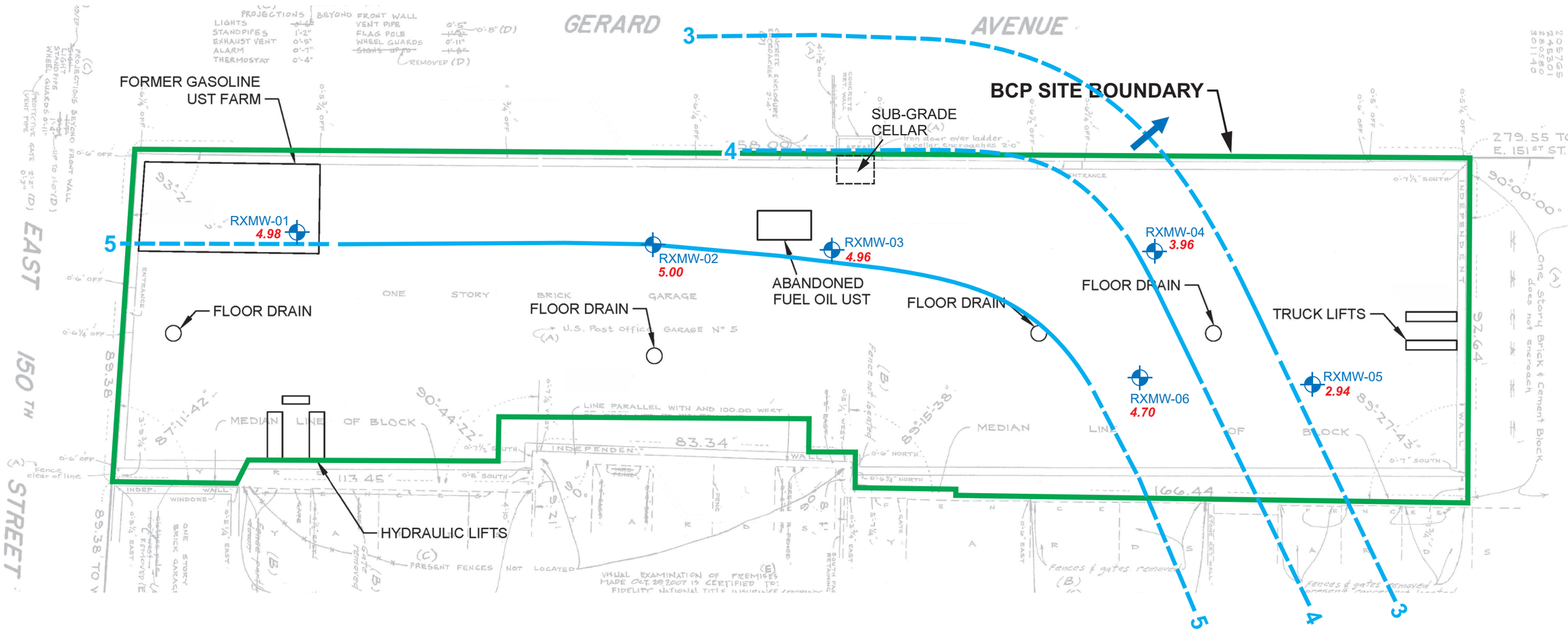
Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: J.L.	Date: 01OCT21	FIGURE
Prepared by: B.H.C..	Scale: AS SHOWN	2
Project Mgr: J.L.	Project: 3523.0001Y000	
File: 3523.0001Y107.01.CDR		

\3523Y0001Y100\3523.0001Y107.01.CDR



LEGEND

RXMW-01 — GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

4.98 — GROUNDWATER ELEVATION (NAVD88)

5 — LINE OF EQUAL GROUNDWATER ELEVATION (NAVD88) (DASHED WHERE INFERRED)

GROUNDWATER FLOW DIRECTION

NOTES

1. BCP - BROWNFIELD CLEANUP PROGRAM
2. GROUNDWATER ELEVATIONS BASESD ON GAUGING DATA COLLECTED ON JULY 15-16, 2021
3. NAVD - NORTH AMERICAN VERTICAL DATUM

N

30’ 0 30’

SOURCE:

1. PLAN BASED ON MAP PREPARED BY EARL B. LOVELL - S.P. BELCHER, INC

Title:

GROUNDWATER ELEVATION CONTOURS

580 GERARD AVENUE
BRONX, NEW YORK

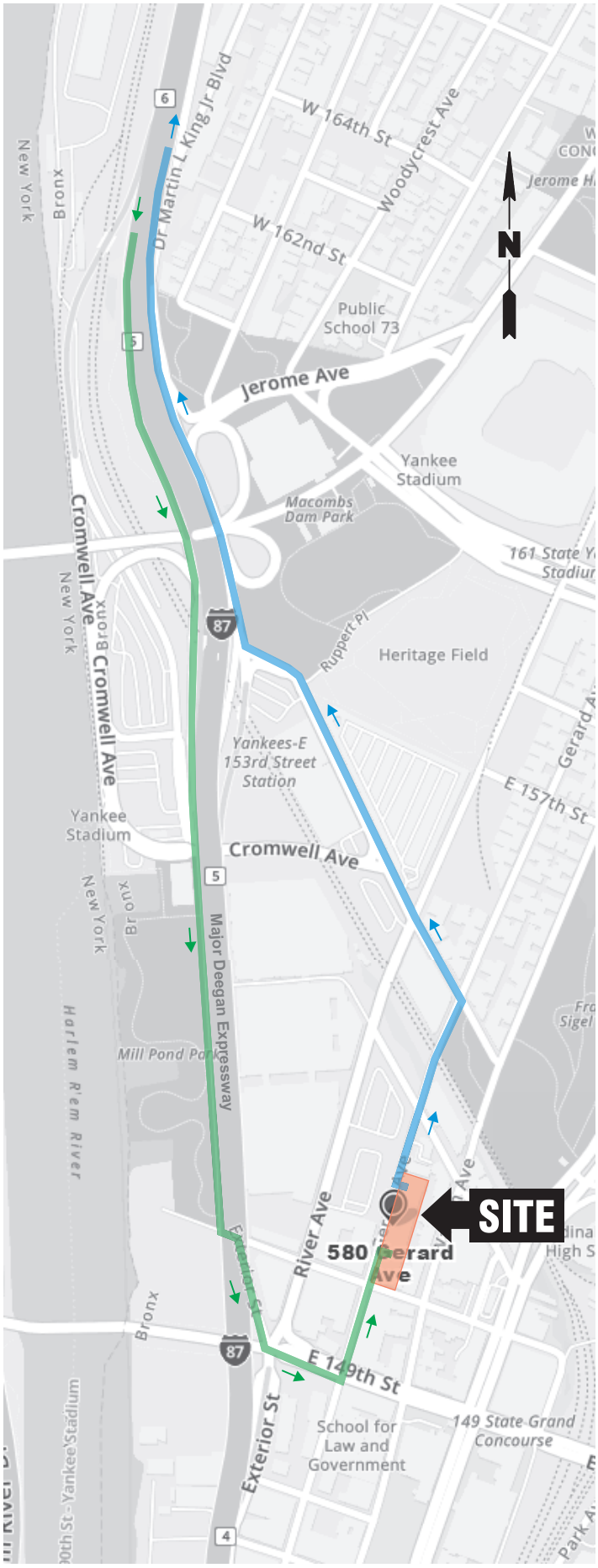
Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: J.L.	Date: 01OCT21	FIGURE
Prepared by: B.H.C..	Scale: AS SHOWN	3
Project Mgr: J.L.	Project: 3523.0001Y000	
File: 3523.0001Y107.01.CDR		

\3523Y\0001Y100\3523.0001Y107.01.CDR



INBOUND TO SITE

- FROM I-87 S, TAKE EXIT 5 FOR MACOMBS DAM BR AND MERGE ONTO MAJOR DEEGAN SERVICE ROAD;
- TAKE MAJOR DEEGAN SERVICE ROAD SOUTH FOR APPROXIMATELY 1 MILE AND TURN SOUTH ONTO EXTERIOR STREET (LEFT TURN);
- TAKE EXTERIOR STREET SOUTH FOR APPROXIMATELY 0.4 MILES AND TURN EAST ONTO E 149TH STREET (LEFT TURN);
- TAKE E 149TH STREET EAST FOR APPROXIMATELY 360 FEET AND TURN NORTH ONTO GERARD AVENUE (LEFT TURN);
- TAKE GERARD AVENUE NORTH FOR APPROXIMATELY 0.1 MILES AND THE SITE IS LOCATED ON THE RIGHT.

OUTBOUND FROM SITE

- EXIT THE SITE ONTO GERARD AVENUE (RIGHT TURN)
- TAKE GERARD AVENUE NORTH FOR APPROXIMATELY 0.2 MILES AND TURN NORTHWEST ONTO E 153RD STREET (LEFT TURN);
- TAKE E 153RD STREET NORTHWEST FOR APPROXIMATELY 0.3 MILES AND TURN WEST ONTO E 157TH STREET (SLIGHT LEFT TURN);
- TAKE E 157TH STREET WEST FOR APPROXIMATELY 260 FEET AND TURN NORTH ONTO MAJOR DEEGAN SERVICE ROAD (RIGHT TURN); AND
- TAKE MAJOR DEEGAN SERVICE ROAD NORTH FOR APPROXIMATELY 0.2 MILES AND STAY LEFT TO MERGE ONTO I-87 N.

500’ 0 500’

Title:

TRUCK ROUTE MAP

580 GERARD AVENUE
BRONX, NEW YORK

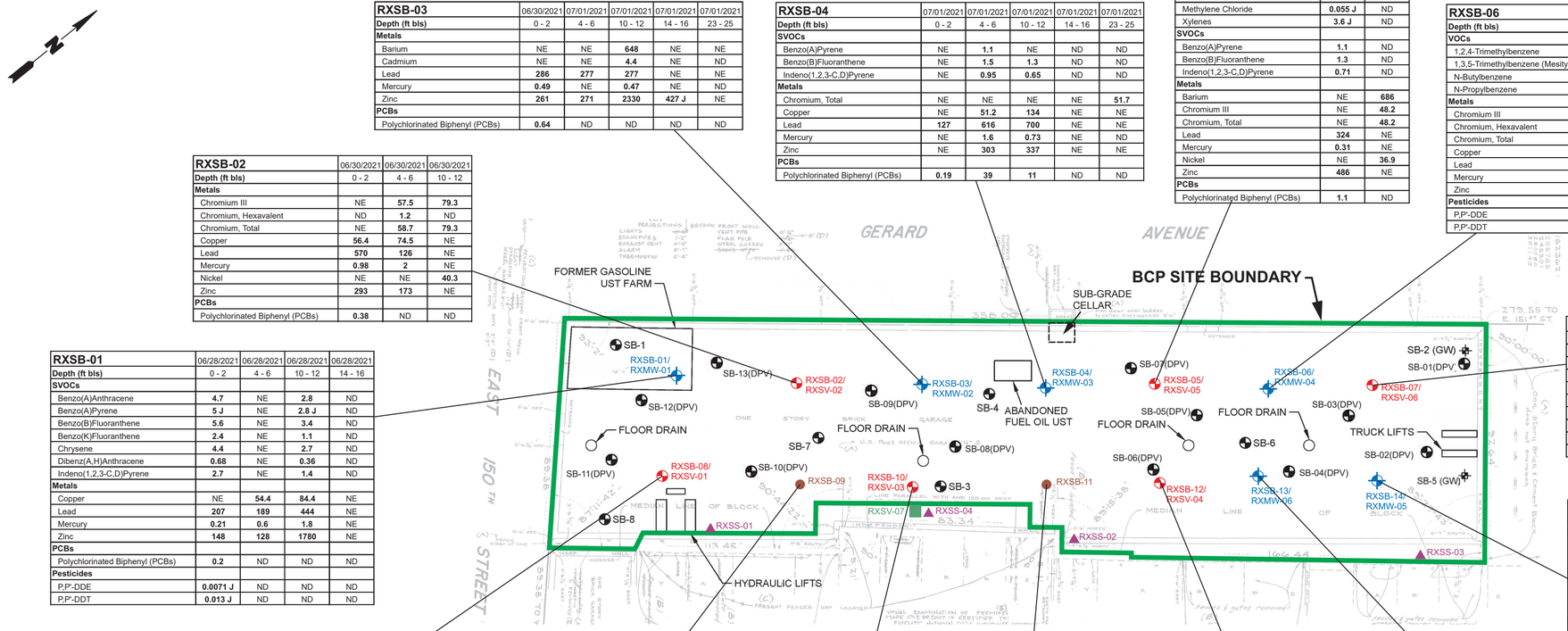
Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: N.P.	Date: 01OCT21	FIGURE
Prepared by: B.H.C..	Scale: AS SHOWN	4
Project Mgr: J.L.	Project: 3523.0001Y000	
File: 3523.0001Y107.01.CDR		

\3523Y\0001Y\100\3523.0001Y107.01.CDR



RXSB-01	06/28/2021	06/28/2021	06/28/2021	06/28/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16
SVOCs				
Benzo(A)Anthracene	**4.7**	NE	**2.8**	ND
Benzo(A)Pyrene	**5 J**	NE	**2.8 J**	ND
Benzo(B)Fluoranthene	**5.6**	NE	**3.4**	ND
Benzo(K)Fluoranthene	**2.4**	NE	**1.1**	ND
Chrysene	**4.4**	NE	**2.7**	ND
Dibenz(A,H)Anthracene	**0.68**	NE	**0.36**	ND
Indeno(1,2,3-C,D)Pyrene	**2.7**	NE	**1.4**	ND
Metals				
Copper	NE	**54.4**	**84.4**	NE
Lead	**207**	**189**	**444**	NE
Mercury	**0.21**	**0.6**	**1.8**	NE
Zinc	**148**	**128**	**1780**	NE
PCBs				
Polychlorinated Biphenyl (PCBs)	**0.2**	ND	ND	ND
Pesticides				
P,P'-DDE	**0.0071 J**	ND	ND	ND
P,P'-DDT	**0.013 J**	ND	ND	ND

RXSB-02	06/30/2021	06/30/2021	06/30/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12
Metals			
Chromium III	NE	**57.5**	**79.3**
Chromium, Hexavalent	ND	**1.2**	ND
Chromium, Total	NE	**58.7**	**79.3**
Copper	**56.4**	**74.5**	NE
Lead	**570**	**126**	NE
Mercury	**0.98**	**2**	NE
Nickel	NE	NE	**40.3**
Zinc	**293**	**173**	NE
PCBs			
Polychlorinated Biphenyl (PCBs)	**0.38**	ND	ND

RXSB-03	06/30/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16	23 - 25
Metals					
Barium	NE	NE	**648**	NE	NE
Cadmium	NE	NE	**4.4**	NE	ND
Lead	**286**	**277**	**277**	NE	NE
Mercury	**0.49**	NE	**0.47**	NE	ND
Zinc	**261**	**271**	**2330**	**427 J**	NE
PCBs					
Polychlorinated Biphenyl (PCBs)	**0.64**	ND	ND	ND	ND

RXSB-04	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16	23 - 25
SVOCs					
Benzo(A)Pyrene	NE	**1.1**	NE	ND	ND
Benzo(B)Fluoranthene	NE	**1.5**	**1.3**	ND	ND
Indeno(1,2,3-C,D)Pyrene	NE	**0.95**	**0.65**	ND	ND
Metals					
Chromium, Total	NE	NE	NE	NE	**51.7**
Copper	NE	**51.2**	**134**	NE	NE
Lead	**127**	**616**	**700**	NE	NE
Mercury	NE	**1.6**	**0.73**	NE	ND
Zinc	NE	**303**	**337**	NE	NE
PCBs					
Polychlorinated Biphenyl (PCBs)	**0.19**	**39**	**11**	ND	ND

RXSB-05	07/06/2021	07/06/2021
Depth (ft bls)	0 - 2	4 - 6
VOCs		
1,2,4-Trimethylbenzene	**47 J**	NE
1,3,5-Trimethylbenzene (Mesitylene)	**21 J**	ND
Benzene	**0.086 J**	ND
Methylene Chloride	**0.055 J**	ND
Xylenes	**3.6 J**	ND
SVOCs		
Benzo(A)Pyrene	**1.1**	ND
Benzo(B)Fluoranthene	**1.3**	ND
Indeno(1,2,3-C,D)Pyrene	**0.71**	ND
Metals		
Barium	NE	**686**
Chromium III	NE	**48.2**
Chromium, Total	NE	**48.2**
Lead	**324**	NE
Mercury	**0.31**	NE
Nickel	NE	**36.9**
Zinc	**486**	NE
PCBs		
Polychlorinated Biphenyl (PCBs)	**1.1**	ND

RXSB-06	07/07/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16	23 - 25
VOCs					
1,2,4-Trimethylbenzene	ND	ND	ND	ND	**96**
1,3,5-Trimethylbenzene (Mesitylene)	ND	ND	ND	ND	**40**
N-Butylbenzene	ND	ND	ND	ND	**22**
N-Propylbenzene	ND	ND	ND	ND	**15**
Metals					
Chromium III	**33.5**	NE	NE	NE	NE
Chromium, Hexavalent	ND	ND	ND	ND	**5.1**
Chromium, Total	**33.5**	NE	NE	NE	NE
Copper	**67.7**	NE	NE	NE	NE
Lead	**335**	**166**	NE	NE	NE
Mercury	**0.42**	NE	ND	ND	ND
Zinc	**328**	**126**	NE	NE	NE
Pesticides					
P,P'-DDE	**0.014**	**0.0087**	ND	ND	ND
P,P'-DDT	**0.025**	**0.025**	ND	ND	ND

RXSB-07	07/08/2021	07/09/2021	07/09/2021	07/09/2021	07/09/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16	23 - 25
Metals					
Chromium III	NE	**38.1**	NE	NE	NE
Chromium, Total	NE	**38.1**	NE	NE	NE
Lead	**150 J**	NE	NE	NE	NE
Mercury	**0.31 J**	NE	NE	NE	NE
Zinc	**127 J**	NE	NE	NE	NE
Pesticides					
P,P'-DDE	**0.0047 J**	ND	ND	ND	ND
P,P'-DDT	**0.0062 J**	ND	ND	ND	ND

RXSB-08	06/28/2021	06/28/2021	06/28/2021
Depth (ft bls)	0 - 2	4 - 6	4 - 6 DUP
SVOCs			
Benzo(A)Anthracene	**1.8**	NE	NE
Benzo(A)Pyrene	**2 J**	NE	NE
Benzo(B)Fluoranthene	**2.4**	**1.2 J**	NE
Benzo(K)Fluoranthene	**0.81**	NE	NE
Chrysene	**1.8**	NE	NE
Dibenz(A,H)Anthracene	**0.35**	NE	NE
Indeno(1,2,3-C,D)Pyrene	**1.4**	**0.68 J**	NE
Metals			
Copper	**70**	**84.7**	**70.6**
Lead	**733**	**336**	**306**
Mercury	**0.62**	**0.56**	**0.53**
Nickel	**36.1**	NE	NE
Zinc	**302**	**215**	**148**
Pesticides			
P,P'-DDT	**0.0085**	ND	ND

RXSB-09	06/29/2021	06/29/2021	06/29/2021	06/29/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16
SVOCs				
Benzo(A)Anthracene	**1.2**	NE	NE	NE
Benzo(A)Pyrene	**1.5**	NE	NE	NE
Benzo(B)Fluoranthene	**1.5**	NE	NE	NE
Benzo(K)Fluoranthene	**0.81**	NE	NE	ND
Chrysene	**1.2**	NE	NE	NE
Indeno(1,2,3-C,D)Pyrene	**0.84**	NE	NE	ND
Metals				
Chromium III	NE	**65.6**	**66.6**	NE
Chromium, Total	NE	**65.6**	**66.6**	NE
Lead	**275**	NE	NE	NE
Mercury	**0.42**	NE	**0.27**	NE
Nickel	NE	**32.4**	**33.7**	NE
Zinc	**186**	NE	**130**	**112**
PCBs				
Polychlorinated Biphenyl (PCBs)	**0.74**	ND	ND	ND
Pesticides				
P,P'-DDT	**0.06**	ND	ND	ND

RXSB-10	06/29/2021	06/29/2021	06/29/2021	06/29/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16
SVOCs				
Benzo(B)Fluoranthene	**1.2**	NE	NE	ND
Indeno(1,2,3-C,D)Pyrene	**0.52**	NE	NE	ND
Metals				
Barium	NE	**762**	**369**	NE
Cadmium	NE	NE	**5.2**	ND
Copper	**86.2 J**	NE	NE	NE
Lead	**181**	**816**	**1110**	NE
Mercury	**0.26 J**	**0.43**	**0.73**	ND
Zinc	**389**	**425**	**3010**	NE
PCBs				
Polychlorinated Biphenyl (PCBs)	**0.44 J**	ND	ND	ND

RXSB-11	07/02/2021	07/02/2021
Depth (ft bls)	0 - 2	0 - 2 DUP
VOCs		
Acetone	NE	**0.051**
Metals		
Barium	NE	**361 J**
Chromium III	**31.6**	**50.8**
Chromium, Total	**31.6**	**50.8**
Lead	**166**	**125**
Mercury	**0.28**	**0.21**
Nickel	NE	**30.8**
Zinc	**141**	**141**
PCBs		
Polychlorinated Biphenyl (PCBs)	**1.3**	**0.88**

RXSB-12	07/06/2021	07/06/2021	07/06/2021	07/06/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16
Metals				
Barium	**370**	NE	NE	NE
Chromium III	**31.5**	NE	NE	NE
Chromium, Total	**31.5**	NE	NE	NE
Lead	**116**	NE	NE	NE
Nickel	**30.1**	NE	NE	NE
Zinc	**130 J**	NE	NE	NE
PCBs				
Polychlorinated Biphenyl (PCBs)	**0.13**	ND	ND	ND

RXSB-13	07/07/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16	23 - 25
SVOCs					
Benzo(A)Anthracene	NE	**1.3**	ND	ND	ND
Benzo(A)Pyrene	NE	**2.1**	ND	ND	ND
Benzo(B)Fluoranthene	NE	**2.2**	ND	ND	NE
Benzo(K)Fluoranthene	NE	**0.96**	ND	ND	ND
Chrysene	NE	**1.5**	ND	ND	NE
Indeno(1,2,3-C,D)Pyrene	NE	**1.4**	ND	ND	ND
Metals					
Copper	**83.6**	NE	NE	NE	NE
Lead	**342**	**370**	NE	NE	NE
Mercury	**0.25**	NE	ND	ND	ND
Nickel	**78**	NE	NE	NE	NE
Zinc	**565**	**194**	NE	NE	NE

RXSB-14	07/08/2021	07/08/2021	07/08/2021	07/08/2021	07/08/2021
Depth (ft bls)	0 - 2	4 - 6	4 - 6 DUP	10 - 12	14 - 16
SVOCs					
Benzo(A)Anthracene	**1.9**	NE	NE	ND	ND
Benzo(A)Pyrene	**1.8**	NE	NE	ND	ND
Benzo(B)Fluoranthene	**2.3**	NE	NE	ND	ND
Chrysene	**1.6**	NE	NE	ND	ND
Dibenz(A,H)Anthracene	**0.34**	ND	ND	ND	ND
Indeno(1,2,3-C,D)Pyrene	**1.1**	ND	ND	ND	ND
Metals					
Chromium III	**45.5**	NE	NE	NE	NE
Chromium, Total	**45.4**	NE	NE	NE	NE
Copper	**57.7**	NE	NE	NE	NE
Lead	**362**	NE	NE	NE	NE
Mercury	**0.22**	NE	NE	NE	NE
Zinc	**236**	NE	NE	NE	NE

Parameter	NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives	Units
VOCs		
1,2,4-Trimethylbenzene	**3.6**	MG/KG
1,3,5-Trimethylbenzene (Mesitylene)	**8.4**	MG/KG
Acetone	**0.05**	MG/KG
Benzene	**0.06**	MG/KG
Methylene Chloride	**0.05**	MG/KG
N-Butylbenzene	**12**	MG/KG
N-Propylbenzene	**3.9**	MG/KG
Xylenes	**0.26**	MG/KG
SVOCs		
Benzo(A)Anthracene	**1**	MG/KG
Benzo(A)Pyrene	**1**	MG/KG
Benzo(B)Fluoranthene	**1**	MG/KG
Benzo(K)Fluoranthene	**0.8**	MG/KG
Chrysene	**1**	MG/KG
Dibenz(A,H)Anthracene	**0.33**	MG/KG
Indeno(1,2,3-C,D)Pyrene	**0.5**	MG/KG
Metals		
Barium	**350**	MG/KG
Cadmium	**2.5**	MG/KG
Chromium III	**30**	MG/KG
Chromium, Hexavalent	**1**	MG/KG
Chromium, Total	**30**	MG/KG
Copper	**50**	MG/KG
Lead	**63**	MG/KG
Mercury	**0.18**	MG/KG
Nickel	**30**	MG/KG
Zinc	**109**	MG/KG
PCBs		
Polychlorinated Biphenyl (PCBs)	**0.1**	MG/KG
Pesticides		
P,P'-DDE	**0.0033**	MG/KG
P,P'-DDT	**0.0033**	MG/KG
PFAS	NE	UG/KG

mg/kg - Milligrams per kilogram
µg/kg - Micrograms per kilogram
NYSDEC - New York State Department of Environmental Conservation
-- - No NYSDEC Part 375 Soil Cleanup Objectives available
J - Estimated value
P - The Relative Percent Difference between the results for the two columns exceeds the method-specified criteria
DUP - Duplicate Sample
VOCs - Volatile Organic Compounds
SVOCs - Semivolatile Organic Compounds
PCBs - Polychlorinated Biphenyls
PFAS - Per- and Polyfluoroalkyl Substances
NE - No exceedance
ND - No detection
ft bls - Feet below land surface

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use SCO

LEGEND

RXSB-09 — RI SOIL BORING LOCATION AND DESIGNATION

RXSB-01/ RXMW-01 — RI SOIL BORING AND GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

RXSB-01/ RXSV-01 — RI SOIL BORING AND SOIL VAPOR SAMPLE LOCATION AND DESIGNATION

RXSS-01 — RI SUB-SLAB VAPOR SAMPLE LOCATION AND DESIGNATION

RXSV-07 — RI SOIL VAPOR SAMPLE LOCATION AND DESIGNATION

SB-1 — PREVIOUS SOIL BORING SAMPLE LOCATION AND DESIGNATION

SB-2 (GW) — PREVIOUS SOIL/GROUNDWATER SAMPLE LOCATION AND DESIGNATION

TYPICAL DATA BOX INFORMATION

SAMPLE ID → RXSB-11 | 07/02/2021 | 07/02/2021 ← SAMPLE DATE
Depth (ft bls) | 0 - 2 | 0 - 2 DUP ← SAMPLE DEPTH
VOCs
Acetone | NE | **0.051**
Metals
Barium | NE | **361 J**
Chromium III | **31.6** | **50.8**
Chromium, Total | **31.6** | **50.8**
Lead | **166** | **125**
Mercury | **0.28** | **0.21**
Nickel | NE | **30.8**
Zinc | **141** | **141**
PCBs
Polychlorinated Biphenyl (PCBs) | **1.3** | **0.88**

ANALYTES — CONCENTRATIONS

SOURCE:

1. PLAN BASED ON MAP PREPARED BY EARL B. LOVELL - S.P. BELCHER, INC

NOTES

1. BCP - BROWNFIELD CLEANUP PROGRAM
2. RI - REMEDIAL INVESTIGATION

40' 0 40'

Title:

SOIL SAMPLE EXCEEDANCES OF UNRESTRICTED USE SOIL CLEANUP OBJECTIVES

580 GERARD AVENUE
BRONX, NEW YORK

Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: J.L.	Date: 01OCT21	FIGURE
Prepared by: B.H.C..	Scale: AS SHOWN	5
Project Mgr: J.L.	Project: 3523.0001Y000	
File: 3523.0001Y100.01.CDR		

3523Y000\Y\Y100\3523.0001Y100.01.CDR

RXSB-03	06/30/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16	23 - 25
Metals					
Barium	NE	NE	648	NE	NE
Cadmium	NE	NE	4.4	NE	ND

RXSB-02	06/30/2021	06/30/2021	06/30/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12
Metals			
Lead	570	NE	NE
Mercury	0.98	2	NE

RXSB-04	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16	23 - 25
SVOCs					
Benzo(A)Pyrene	NE	1.1	NE	ND	ND
Benzo(B)Fluoranthene	NE	1.5	1.3	ND	ND
Indeno(1,2,3-C,D)Pyrene	NE	0.95	0.65	ND	ND
Metals					
Lead	NE	616	700	NE	NE
Mercury	NE	1.6	NE	NE	ND
PCBs					
Polychlorinated Biphenyl (PCBs)	NE	39	11	ND	ND

RXSB-05	07/06/2021	07/06/2021
Depth (ft bls)	0 - 2	4 - 6
VOCs		
1,2,4-Trimethylbenzene	47 J	NE
1,3,5-Trimethylbenzene (Mesitylene)	21 J	ND
Benzene	0.086 J	ND
Methylene Chloride	0.055 J	ND
Xylenes	3.6 J	ND
SVOCs		
Benzo(A)Pyrene	1.1	ND
Benzo(B)Fluoranthene	1.3	ND
Indeno(1,2,3-C,D)Pyrene	0.71	ND
Metals		
Barium	NE	686
PCBs		
Polychlorinated Biphenyl (PCBs)	1.1	ND

RXSB-06	07/07/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16	23 - 25
VOCs					
1,2,4-Trimethylbenzene	ND	ND	ND	ND	96
1,3,5-Trimethylbenzene (Mesitylene)	ND	ND	ND	ND	40
N-Butylbenzene	ND	ND	ND	ND	22
N-Propylbenzene	ND	ND	ND	ND	15

RXSB-01	06/28/2021	06/28/2021	06/28/2021	06/28/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16
SVOCs				
Benzo(A)Anthracene	4.7	NE	2.8	ND
Benzo(A)Pyrene	5	NE	2.8 J	ND
Benzo(B)Fluoranthene	5.6	NE	3.4	ND
Benzo(K)Fluoranthene	2.4	NE	NE	ND
Chrysene	4.4	NE	2.7	ND
Dibenz(A,H)Anthracene	0.68	NE	0.36	ND
Indeno(1,2,3-C,D)Pyrene	2.7	NE	1.4	ND
Metals				
Lead	NE	NE	444	NE
Mercury	NE	NE	1.8	NE

RXSB-08	06/28/2021	06/28/2021	06/28/2021
Depth (ft bls)	0 - 2	4 - 6	4 - 6 DUP
SVOCs			
Benzo(A)Anthracene	1.8	NE	NE
Benzo(A)Pyrene	2 J	NE	NE
Benzo(B)Fluoranthene	2.4	1.2 J	NE
Chrysene	1.8	NE	NE
Dibenz(A,H)Anthracene	0.35	NE	NE
Indeno(1,2,3-C,D)Pyrene	1.4	0.68 J	NE
Metals			
Lead	733	NE	NE

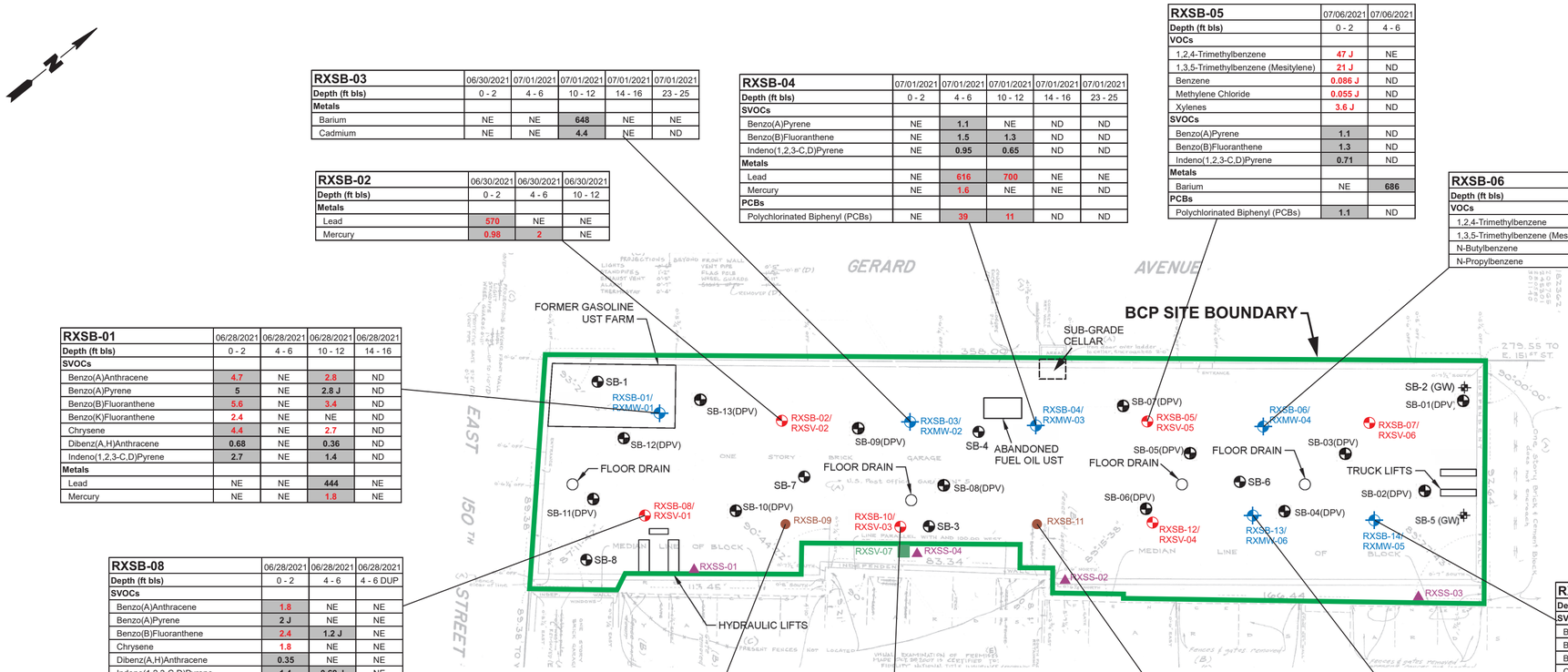
RXSB-14	07/08/2021	07/08/2021	07/08/2021	07/08/2021	07/08/2021
Depth (ft bls)	0 - 2	4 - 6	4 - 6 DUP	10 - 12	14 - 16
SVOCs					
Benzo(A)Anthracene	1.9	NE	NE	ND	ND
Benzo(A)Pyrene	1.8	NE	NE	ND	ND
Benzo(B)Fluoranthene	2.3	NE	NE	ND	ND
Chrysene	1.6	NE	NE	ND	ND
Dibenz(A,H)Anthracene	0.34	ND	ND	ND	ND
Indeno(1,2,3-C,D)Pyrene	1.1	ND	ND	ND	ND

RXSB-09	06/29/2021	06/29/2021	06/29/2021	06/29/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16
SVOCs				
Benzo(A)Anthracene	1.2	NE	NE	NE
Benzo(A)Pyrene	1.5	NE	NE	NE
Benzo(B)Fluoranthene	1.5	NE	NE	NE
Chrysene	1.2	NE	NE	NE
Indeno(1,2,3-C,D)Pyrene	0.84	NE	NE	ND

RXSB-10	06/29/2021	06/29/2021	06/29/2021	06/29/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16
SVOCs				
Benzo(B)Fluoranthene	1.2	NE	NE	ND
Indeno(1,2,3-C,D)Pyrene	0.52	NE	NE	ND
Metals				
Barium	NE	762	NE	NE
Cadmium	NE	NE	5.2	ND
Lead	NE	816	1110	NE
Zinc	NE	NE	3010	NE

RXSB-11	07/02/2021	07/02/2021
Depth (ft bls)	0 - 2	0 - 2 DUP
VOCs		
Acetone	NE	0.051
PCBs		
Polychlorinated Biphenyl (PCBs)	1.3	NE

RXSB-13	07/07/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021
Depth (ft bls)	0 - 2	4 - 6	10 - 12	14 - 16	23 - 25
SVOCs					
Benzo(A)Anthracene	NE	1.3	ND	ND	ND
Benzo(A)Pyrene	NE	2.1	ND	ND	ND
Benzo(B)Fluoranthene	NE	2.2	ND	ND	NE
Chrysene	NE	1.5	ND	ND	NE
Indeno(1,2,3-C,D)Pyrene	NE	1.4	ND	ND	ND



Parameter	NYSDEC Part 375 Restricted Residential Soil Cleanup Objectives	NYSDEC Part 375 Protection of Groundwater Soil Cleanup Objectives	Units
VOCs			
1,2,4-Trimethylbenzene	52	3.6	MG/KG
1,3,5-Trimethylbenzene (Mesitylene)	52	8.4	MG/KG
Acetone	100	0.05	MG/KG
Benzene	4.8	0.06	MG/KG
Methylene Chloride	100	0.05	MG/KG
N-Butylbenzene	100	12	MG/KG
N-Propylbenzene	100	3.9	MG/KG
Xylenes	100	1.6	MG/KG
SVOCs			
Benzo(A)Anthracene	1	1	MG/KG
Benzo(A)Pyrene	1	22	MG/KG
Benzo(B)Fluoranthene	1	1.7	MG/KG
Benzo(K)Fluoranthene	3.9	1.7	MG/KG
Chrysene	3.9	1	MG/KG
Dibenz(A,H)Anthracene	0.33	1000	MG/KG
Indeno(1,2,3-C,D)Pyrene	0.5	8.2	MG/KG
Metals			
Barium	400	820	MG/KG
Cadmium	4.3	7.5	MG/KG
Lead	400	450	MG/KG
Mercury	0.81	0.73	MG/KG
Zinc	10000	2480	MG/KG
PCBs			
Polychlorinated Biphenyl (PCBs)	1	3.2	MG/KG
Pesticides	NE	NE	MG/KG
PFAS	NE	NE	UG/KG

mg/kg - Milligrams per kilogram
µg/kg - Micrograms per kilogram
NYSDEC - New York State Department of Environmental Conservation
-- - No NYSDEC Part 375 Soil Cleanup Objectives available
J - Estimated value
P - The Relative Percent Difference between the results for the two columns exceeds the method-specified criteria
DUP - Duplicate Sample
VOCs - Volatile Organic Compounds
SVOCs - Semivolatile Organic Compounds
PCBs - Polychlorinated Biphenyls
PFAS - Per- and Polyfluoroalkyl Substances
NE - No exceedance
ND - No detection
ft bls - Feet below land surface

Bold data indicates that parameter was detected above the NYSDEC Part 375 Unrestricted Use SCO

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

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

LEGEND

RXSB-09 - RI SOIL BORING LOCATION AND DESIGNATION

RI SOIL BORING AND GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

RXSB-01/ RXSV-01 - RI SOIL BORING AND SOIL VAPOR SAMPLE LOCATION AND DESIGNATION

RXSS-01 - RI SUB-SLAB VAPOR SAMPLE LOCATION AND DESIGNATION

RXSV-07 - RI SOIL VAPOR SAMPLE LOCATION AND DESIGNATION

SB-1 - PREVIOUS SOIL BORING SAMPLE LOCATION AND DESIGNATION

SB-2 (GW) - PREVIOUS SOIL/GROUNDWATER SAMPLE LOCATION AND DESIGNATION

TYPICAL DATA BOX INFORMATION

SAMPLE ID → RXSB-11	07/02/2021	07/02/2021 ← SAMPLE DATE
Depth (ft bls)	0 - 2	0 - 2 DUP ← SAMPLE DEPTH
VOCs		
ANALYTES — Acetone	NE	0.051 — CONCENTRATIONS
PCBs		
ANALYTES — Polychlorinated Biphenyl (PCBs)	1.3	NE — CONCENTRATIONS

SOURCE:

1. PLAN BASED ON MAP PREPARED BY EARL B. LOVELL - S.P. BELCHER, INC

NOTES

1. BCP - BROWNFIELD CLEANUP PROGRAM
2. RI - REMEDIAL INVESTIGATION
3. THERE WERE NO EXCEEDANCES OF THE RESTRICTED RESIDENTIAL SCO OR PROTECTION OF GROUNDWATER SCO IDENTIFIED IN SOIL BORINGS RXSB-07 AND RXSB-12.

40' 0 40'

Title:

SOIL SAMPLE EXCEEDANCES OF RESTRICTED RESIDENTIAL USE AND PROECTION OF GROUNDWATER SOIL CLEANUP OBJECTIVES

580 GERARD AVENUE
BRONX, NEW YORK

Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: J.L.	Date: 01OCT21	FIGURE 6
Prepared by: B.H.C..	Scale: AS SHOWN	
Project Mgr: J.L.	Project: 3523.0001Y000	
File: 3523.0001Y100.01.CDR		

\3523\Y000\Y107\3523.0001Y107.01.CDR

RXMW-01	07/16/2021
Metals, Total	
Iron	**682**
Magnesium	**38100**
Sodium	**222000**
Metals, Dissolved	
Magnesium	**38500**
Sodium	**225000**
PFAS	
Perfluorooctanoic acid (PFOA)	**14.8**

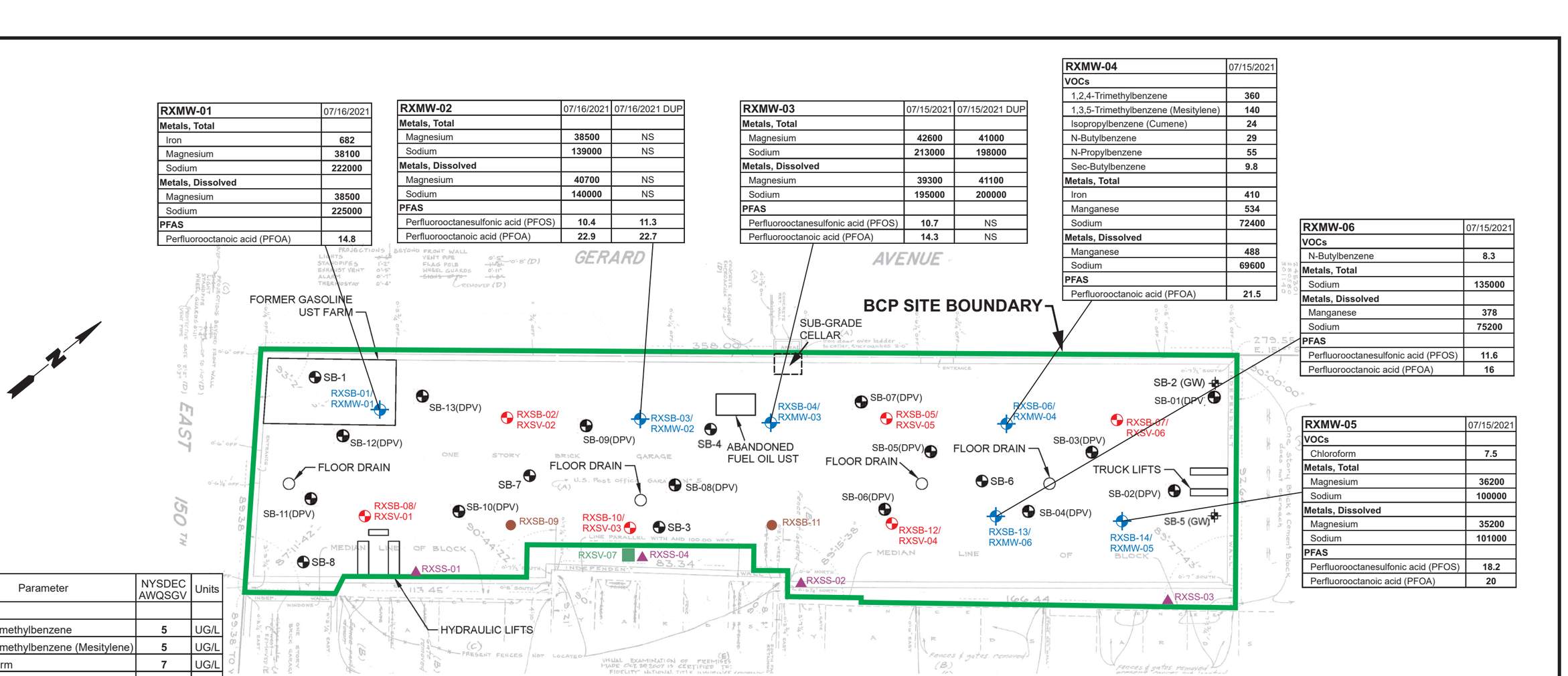
RXMW-02	07/16/2021	07/16/2021 DUP
Metals, Total		
Magnesium	**38500**	NS
Sodium	**139000**	NS
Metals, Dissolved		
Magnesium	**40700**	NS
Sodium	**140000**	NS
PFAS		
Perfluorooctanesulfonic acid (PFOS)	**10.4**	**11.3**
Perfluorooctanoic acid (PFOA)	**22.9**	**22.7**

RXMW-03	07/15/2021	07/15/2021 DUP
Metals, Total		
Magnesium	**42600**	**41000**
Sodium	**213000**	**198000**
Metals, Dissolved		
Magnesium	**39300**	**41100**
Sodium	**195000**	**200000**
PFAS		
Perfluorooctanesulfonic acid (PFOS)	**10.7**	NS
Perfluorooctanoic acid (PFOA)	**14.3**	NS

RXMW-04	07/15/2021
VOCs	
1,2,4-Trimethylbenzene	**360**
1,3,5-Trimethylbenzene (Mesitylene)	**140**
Isopropylbenzene (Cumene)	**24**
N-Butylbenzene	**29**
N-Propylbenzene	**55**
Sec-Butylbenzene	**9.8**
Metals, Total	
Iron	**410**
Manganese	**534**
Sodium	**72400**
Metals, Dissolved	
Manganese	**488**
Sodium	**69600**
PFAS	
Perfluorooctanoic acid (PFOA)	**21.5**

RXMW-06	07/15/2021
VOCs	
N-Butylbenzene	**8.3**
Metals, Total	
Sodium	**135000**
Metals, Dissolved	
Manganese	**378**
Sodium	**75200**
PFAS	
Perfluorooctanesulfonic acid (PFOS)	**11.6**
Perfluorooctanoic acid (PFOA)	**16**

RXMW-05	07/15/2021
VOCs	
Chloroform	**7.5**
Metals, Total	
Magnesium	**36200**
Sodium	**100000**
Metals, Dissolved	
Magnesium	**35200**
Sodium	**101000**
PFAS	
Perfluorooctanesulfonic acid (PFOS)	**18.2**
Perfluorooctanoic acid (PFOA)	**20**



Parameter	NYSDEC AWQSGV	Units
VOCs		
1,2,4-Trimethylbenzene	**5**	UG/L
1,3,5-Trimethylbenzene (Mesitylene)	**5**	UG/L
Chloroform	**7**	UG/L
Isopropylbenzene (Cumene)	**5**	UG/L
N-Butylbenzene	**5**	UG/L
N-Propylbenzene	**5**	UG/L
Sec-Butylbenzene	**5**	UG/L
SVOCs	NE	UG/L
Metals, Total		
Iron	**300**	UG/L
Magnesium	**35000**	UG/L
Manganese	**300**	UG/L
Sodium	**20000**	UG/L
Metals, Dissolved		
Iron	**300**	UG/L
Magnesium	**35000**	UG/L
Manganese	**300**	UG/L
Sodium	**20000**	UG/L
PCBs	ND	UG/L
Pesticides	ND	UG/L
Parameter	NYSDEC Drinking Water MCL	Units
PFAS		
Perfluorooctanesulfonic acid (PFOS)	**10**	NG/L
Perfluorooctanoic acid (PFOA)	**10**	NG/L

µg/L - Micrograms per liter
ng/L - Nanograms per liter
NYSDEC - New York State Department of Environmental Conservation
AWQSGV - Ambient Water-Quality Standards and Guidance Values
NYSDEC Drinking Water MCL - Maximum Contaminant Levels (PFAS only)
-- - Not detected above NYSDEC AWQSGV
J - Estimated value
DUP - Duplicate Sample
VOCs - Volatile Organic Compounds
SVOCs - Semivolatile Organic Compounds
PCBs - Polychlorinated Biphenyls
PFAS - Per- and Polyfluoroalkyl Substances
NE - No exceedances
ND - No detection
NS - Not sampled

TYPICAL DATA BOX INFORMATION

SAMPLE ID → | SAMPLE DATE ←

RXMW-1	07/16/2021
Metals, Total	
Iron	**682**
Magnesium	**38100**
Sodium	**222000**
Metals, Dissolved	
Magnesium	**38500**
Sodium	**225000**
PFAS	
Perfluorooctanoic acid (PFOA)	**14.8**

ANALYTES | CONCENTRATIONS

LEGEND

- RXSB-09 — RI SOIL BORING LOCATION AND DESIGNATION
- RI SOIL BORING AND GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- RXSB-01/ RXSV-01 — RI SOIL BORING AND SOIL VAPOR SAMPLE LOCATION AND DESIGNATION
- RXSS-01 — RI SUB-SLAB VAPOR SAMPLE LOCATION AND DESIGNATION
- RXSV-07 — RI SOIL VAPOR SAMPLE LOCATION AND DESIGNATION
- SB-1 — PREVIOUS SOIL BORING SAMPLE LOCATION AND DESIGNATION
- SB-2 (GW) — PREVIOUS SOIL/GROUNDWATER SAMPLE LOCATION AND DESIGNATION

NOTES

1. BCP - BROWNFIELD CLEANUP PROGRAM
2. RI - REMEDIAL INVESTIGATION

40’ 0 40’

SOURCE:

1. PLAN BASED ON MAP PREPARED BY EARL B. LOVELL - S.P. BELCHER, INC

Title:

GROUNDWATER SAMPLE EXCEEDANCES OF AWQSGVs

580 GERARD AVENUE
BRONX, NEW YORK

Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: J.L.	Date: 01OCT21	FIGURE	
Prepared by: B.H.C..	Scale: AS SHOWN	7	
Project Mgr: J.L.	Project: 3523.0001Y000		
File: 3523.0001Y100.01.CDR			

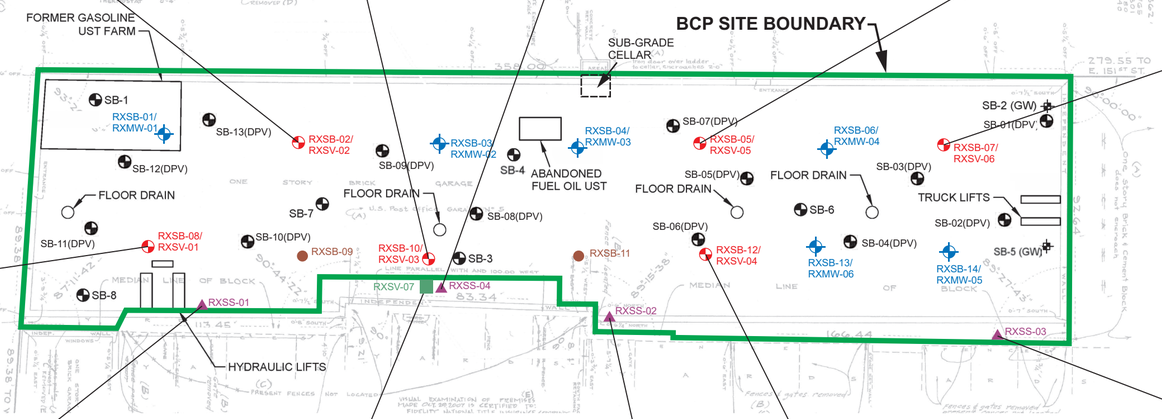
3523\0001Y\100\3523.0001Y100.01.CDR

RXSV-02	07/15/2021
Depth (ft bls)	13
VOCs	
1,1,1-Trichloroethane (TCA)	0.56 J
1,2,4-Trimethylbenzene	5
1,3,5-Trimethylbenzene (Mesitylene)	1.7
2,2,4-Trimethylpentane	14
2-Hexanone	1.9 J
4-Ethyltoluene	0.66 J
Acetone	11 J
Benzene	0.9
Butane	3.2
Carbon Disulfide	2.6
Chloroform	2.4
Cyclohexane	7.9
Dichlorodifluoromethane	2.7
Ethylbenzene	1.7
Isopropylbenzene (Cumene)	0.55 J
m,p-Xylene	5.6
Methyl Ethyl Ketone (2-Butanone)	2.6
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	1.1 J
Naphthalene	1.6 J
N-Heptane	4.4
N-Hexane	4.2
N-Propylbenzene	0.59 J
O-Xylene (1,2-Dimethylbenzene)	3.9
Tetrachloroethylene (PCE)	65
Toluene	4.7
Trichlorofluoromethane	2.1

RXSV-03	07/15/2021
Depth (ft bls)	16
VOCs	
2,2,4-Trimethylpentane	1.7
Acetone	36
Butane	6.6
Carbon Disulfide	1.1 J
Chlorodifluoromethane	3.2
Chloroform	17
Cis-1,2-Dichloroethylene	0.64
Cyclohexane	21
Dichlorodifluoromethane	2.5
Isopropanol	8.8 J
Methyl Ethyl Ketone (2-Butanone)	0.97 J
N-Heptane	1.1
N-Hexane	4.8
Tetrachloroethylene (PCE)	11
Toluene	1.7
Trichloroethylene (TCE)	47
Trichlorofluoromethane	2.4

RXSS-04	12/21/2021
VOCs	
1,2,4-Trimethylbenzene	48 D
1,3,5-Trimethylbenzene (Mesitylene)	18 D
4-Ethyltoluene	32 D
Acetone	50 D
Benzene	3.1 D
Carbon Disulfide	1.1 D
Chloromethane	0.42 D
Cyclohexane	1 D
Dichlorodifluoromethane	2.4 D
Ethylbenzene	3.6 D
Isopropanol	4.4 J-
Methyl Ethyl Ketone (2-Butanone)	12 D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.95 D
M-P-Xylene	16 D
N-Heptane	4.2 D
N-Hexane	2.3 D
O-Xylene (1,2-Dimethylbenzene)	8.1 D
Propylene	3.3 D
Tetrachloroethylene (PCE)	3.6 D
Toluene	5.4 D
Trichloroethylene (TCE)	0.23 D
Trichlorofluoromethane	1.3 D

RXSV-05	07/16/2021
Depth (ft bls)	5.5
VOCs	
1,2,4-Trimethylbenzene	5.1 J
1,3,5-Trimethylbenzene (Mesitylene)	20
2,2,4-Trimethylpentane	1200
4-Ethyltoluene	6.3 J
Butane	21
Carbon Disulfide	11 J
Chloroform	34
Cyclohexane	38
Cymene	2.2 J
Isopropylbenzene (Cumene)	6.8 J
m,p-Xylene	25
N-Heptane	210
N-Hexane	31
N-Propylbenzene	6.3 J
O-Xylene (1,2-Dimethylbenzene)	23
Tetrachloroethylene (PCE)	34



RXSV-01	07/16/2021
Depth (ft bls)	8.5
VOCs	
2,2,4-Trimethylpentane	3.3 J
Chlorodifluoromethane	10 J
Tetrachloroethylene (PCE)	19
Toluene	6.5 J

RXSV-06	07/16/2021
Depth (ft bls)	16
VOCs	
1,1,1-Trichloroethane (TCA)	3.8 J
2,2,4-Trimethylpentane	9.3
Acetone	55 J
Bromodichloromethane	31
Butane	14
Chloroform	400
Cyclohexane	5.6 J
m,p-Xylene	14 J
N-Heptane	7 J
Tetrachloroethylene (PCE)	86
Toluene	45

RXSS-01	07/15/2021
VOCs	
1,2,4-Trimethylbenzene	4.1
2,2,4-Trimethylpentane	0.37 J
Acetone	17
Butane	3.8
Carbon Disulfide	5.1
Carbon Tetrachloride	0.51
Chlorodifluoromethane	4.2
Chloroform	0.33 J
Cyclohexane	1.7
Dichlorodifluoromethane	3.1
Ethylbenzene	1.1
Isopropanol	3 J
m,p-Xylene	4.7
Methyl Ethyl Ketone (2-Butanone)	3.5
N-Heptane	2
N-Hexane	12
O-Xylene (1,2-Dimethylbenzene)	2.1
Styrene	2.4
Tert-Butyl Alcohol	21
Tetrachloroethylene (PCE)	4.4
Toluene	8.5
Trichlorofluoromethane	2

RXSV-07	12/21/2021
VOCs	
1,2,4-Trimethylbenzene	18 D
1,3,5-Trimethylbenzene (Mesitylene)	5.4 D
2-Hexanone	1.6 D
4-Ethyltoluene	23 D
Acetone	7.5 D
Benzene	9.7 D
Carbon Disulfide	0.84 D
Cyclohexane	8.7 D
Dichlorodifluoromethane	2.1 D
Ethylbenzene	29 D
Isopropanol	1.2 UJ
Methyl Ethyl Ketone (2-Butanone)	5.4 D
Methylene Chloride	3.1 D
M-P-Xylene	81 D
N-Heptane	25 D
N-Hexane	23 D
O-Xylene (1,2-Dimethylbenzene)	29 D
Propylene	1.8 D
Tetrachloroethylene (PCE)	13 D
Toluene	110 D
Trichlorofluoromethane	1.5 D

RXSS-02	07/15/2021
VOCs	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.54 J
1,2,4-Trimethylbenzene	1.9
1,2-Dichloroethane	2
1,3,5-Trimethylbenzene (Mesitylene)	0.67 J
2,2,4-Trimethylpentane	1.7
4-Ethyltoluene	0.51 J
Acetone	49
Benzene	0.95
Butane	110 D
Carbon Disulfide	7.5
Carbon Tetrachloride	0.46
Chlorodifluoromethane	1.7 J
Chloroform	0.33 J
Chloromethane	1.6
Cyclohexane	3.5
Dichlorodifluoromethane	2.9
Ethylbenzene	2.4
Isopropanol	18
Isopropylbenzene (Cumene)	0.32 J
m,p-Xylene	9.3
Methyl Ethyl Ketone (2-Butanone)	8.7
Methylene Chloride	4.4
Naphthalene	1.8 J
N-Heptane	19
N-Hexane	12
N-Propylbenzene	0.45 J
O-Xylene (1,2-Dimethylbenzene)	3.5
Styrene	2
Tert-Butyl Alcohol	16
Toluene	25
Trichlorofluoromethane	1.4

RXSV-04	07/15/2021
Depth (ft bls)	16
VOCs	
1,1,1-Trichloroethane (TCA)	1.6
1,2,4-Trimethylbenzene	5.1
1,3,5-Trimethylbenzene (Mesitylene)	3.8
2,2,4-Trimethylpentane	11
2-Hexanone	1.2 J
4-Ethyltoluene	3.8
Acetone	13
Benzene	1.5
Bromodichloromethane	0.9 J
Butane	3.7
Carbon Disulfide	5.6
Chlorodifluoromethane	1.6 J
Chloroform	54
Cyclohexane	4.9
Dichlorodifluoromethane	2.2 J
Ethylbenzene	3
Isopropylbenzene (Cumene)	0.58 J
m,p-Xylene	28
Methyl Ethyl Ketone (2-Butanone)	2.1
N-Heptane	3.4
N-Propylbenzene	0.65 J
O-Xylene (1,2-Dimethylbenzene)	6.4
Tetrachloroethylene (PCE)	56
Toluene	15
Trichlorofluoromethane	2

RXSS-03	07/15/2021
VOCs	
1,2,4-Trimethylbenzene	3.3
2,2,4-Trimethylpentane	0.47 J
Acetone	20
Benzene	0.93
Butane	3.4
Carbon Disulfide	3.4
Cyclohexane	2.1
Dichlorodifluoromethane	2.3 J
Ethylbenzene	1.2
Isopropanol	6.5 J
m,p-Xylene	4.6
Methyl Ethyl Ketone (2-Butanone)	3.9
N-Heptane	2.3
N-Hexane	11
O-Xylene (1,2-Dimethylbenzene)	2.3
Styrene	2.2
Tert-Butyl Alcohol	18
Tetrachloroethylene (PCE)	7.8
Toluene	10
Trichlorofluoromethane	2

40’ 0 40’

LEGEND

- RXSB-09 — RI SOIL BORING LOCATION AND DESIGNATION
- RXSB-01/ RXMW-01 — RI SOIL BORING AND GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- RXSB-01/ RXSV-01 — RI SOIL BORING AND SOIL VAPOR SAMPLE LOCATION AND DESIGNATION
- RXSS-01 — RI SUB-SLAB VAPOR SAMPLE LOCATION AND DESIGNATION
- RXSV-07 — RI SOIL VAPOR SAMPLE LOCATION AND DESIGNATION
- SB-1 — PREVIOUS SOIL BORING SAMPLE LOCATION AND DESIGNATION
- SB-2 (GW) — PREVIOUS SOIL/GROUNDWATER SAMPLE LOCATION AND DESIGNATION

TYPICAL DATA BOX INFORMATION

SAMPLE ID →	RXSV-01	07/16/2021 ← SAMPLE DATE
	Depth (ft bls)	8.5 ← SAMPLE DEPTH
ANALYTES →	**VOCs**	
	2,2,4-Trimethylpentane	3.3 J → CONCENTRATIONS
	Chlorodifluoromethane	10 J
	Tetrachloroethylene (PCE)	19
	Toluene	6.5 J

Concentrations in µg/m^3

µg/m^3 - Micrograms per cubic meter
VOCs - Volatile Organic Compounds
ND - Compound was analyzed for but not detected
J - Estimated value
J- - The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased low.
UJ - The analyte was analyzed for, but was not detected. The associated reported quantitation limit is approximate and may be inaccurate or imprecise.
D - A secondary analysis after dilution due to exceedance of the calibration range in the original sample
ft bls - Feet Below Land Surface

SOURCE

PLAN BASED ON MAP PREPARED BY EARL B. LOVELL - S.P. BELCHER, INC.

NOTES

1. BCP - BROWNFIELD CLEANUP PROGRAM
2. RI - REMEDIAL INVESTIGATION

Title:

SOIL VAPOR SAMPLE DETECTIONS

580 GERARD AVENUE
BRONX, NEW YORK

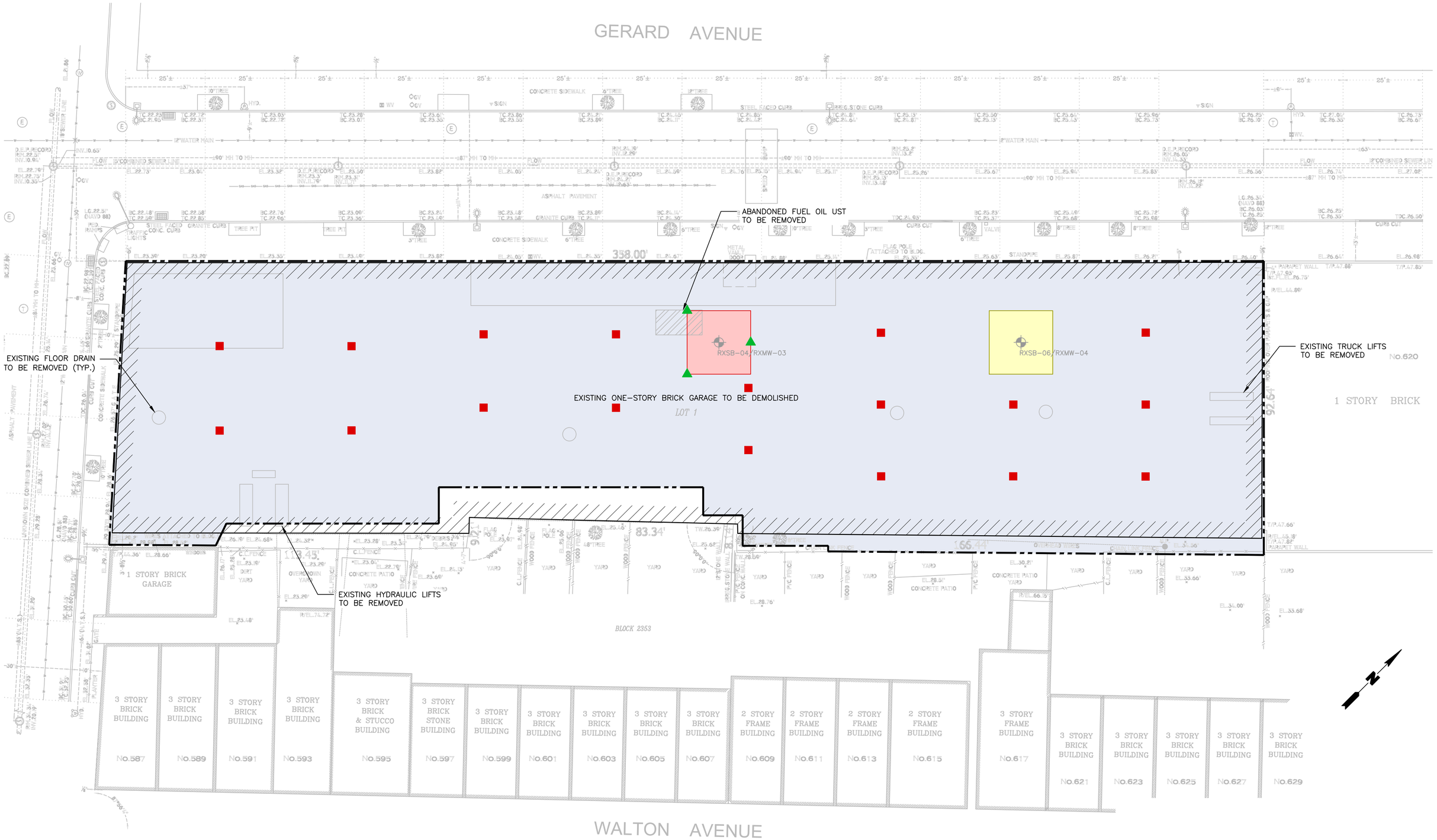
Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: J.L.	Date: 01OCT21	FIGURE
Prepared by: B.H.C..	Scale: AS SHOWN	8
Project Mgr: J.L.	Project: 3523.0001Y000	
File: 3523.0001Y100.01.CDR		

3523\Y0001\Y10\0323.0001Y107.01.CDR



LEGEND

- BCP SITE BOUNDARY
- PROPOSED LIMITS OF EXCAVATION TO A MINIMUM OF 16 FT BLS OR DEEPER TO MEET NYSDEC UUSCOs
- EXISTING BUILDING
- CHROMIUM HOT SPOT EXCAVATION TO 27 FT BLS OR BEDROCK
- IN-SITU CHEMICAL OXIDATION AREA/VOC HOT SPOT EXCAVATION AREA TO 27 FT BLS
- PROPOSED BOTTOM CONFIRMATION SAMPLE
- PROPOSED SIDEWALL CONFIRMATION SAMPLE
- RXSB-04/RXMW-03 — RI SOIL BORING AND GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

BCP	BROWNFIELD CLEANUP PROGRAM
BLS	BELOW LAND SURFACE
NYSDEC	NEW YORK STATE DEPARTMENT OF ENNRIONMENTAL CONSERVATION
RI	REMEDIAL INVESTIGATION
UUSCOs	PART 375 UNRESTRICTED USE SOIL CLEANUP OBJECTIVES
VOCs	VOLATILE ORGANIC COMPOUNDS

NOTES

1. FOLLOWING EXCAVATION TO 16 FT BLS, EXCAVATION BOTTOM CONFIRMATION SAMPLES WILL BE COLLECTED AT A RATE OF 1 SAMPLE PER 1,500 SQUARE FEET. SAMPLES WILL BE ANALYZED FOR THE FULL SUITE OF PART 375 PARAMETERS AND EMERGING CONTAMINANTS OF CONCERN. SIDEWALL CONFIRMATION SAMPLES ARE NOT REQUIRED BASED ON EXCAVATION EXTENDING TO BCP SITE BOUNDARY.
2. IN THE CHROMIUM HOT SPOT EXCAVATION AREA, SIDEWALL SAMPLES WILL BE COLLECTED AT A RATE OF 1 SAMPLE PER 30 LINEAR FEET. BOTTOM CONFIRMATION SAMPLES WILL BE COLLECTED AT A RATE OF 1 SAMPLE PER 900 SQUARE FEET IF BEDROCK IS NOT ENCOUNTERED.
3. A WORK PLAN FOR IMPLEMENTATION OF IN-SITU CHEMICAL OXIDATION (ISCO) WILL BE PROVIDED TO NYSDEC UNDER SEPARATE COVER. THE WORK PLAN WILL INCLUDE POST-ISCO SAMPLING TO EVALUATE THE PERFORMANCE OF THE REMEDY FOR GROUNDWATER AND FOR SOIL WITHIN THE VOC HOT SPOT EXCAVATION AREA.
4. BACKFILL WILL MEET NYSDEC UUSCOS. FILL MATERIALS WITH LESS THAN 10 PERCENT PASSING THE NUMBER 80 SIEVE (I.E. STONE, GRAVEL, ETC.) DO NOT REQUIRE SAMPLING.
5. TEMPORARY DEWATERING FOR HOT SPOT EXCAVATION, CONSTRUCTION OF ELEVATOR PITS, FOOTINGS, AND OTHER FOUNDATION COMPONENTS SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS. EXTRACTED GROUNDWATER SHALL EITHER BE CONTAINERIZED FOR OFF-SITE LICENSED OR PERMITTED DISPOSAL OR TREATED ON-SITE AND DISCHARGED TO THE CITY SEWER SYSTEM UNDER APPROPRIATE PERMITS.
6. A VAPOR BARRIER SYSTEM (MINIMUM THICKNESS OF 20 MIL) SHALL BE INSTALLED UNDER THE BUILDING FOUNDATION'S SLAB AND UP THE FOUNDATION WALLS.

20' 0 20'

Title:

REMEDIAL ALTERNATIVE 1: TRACK 1 CLEANUP

580 GERARD AVENUE
BRONX, NEW YORK

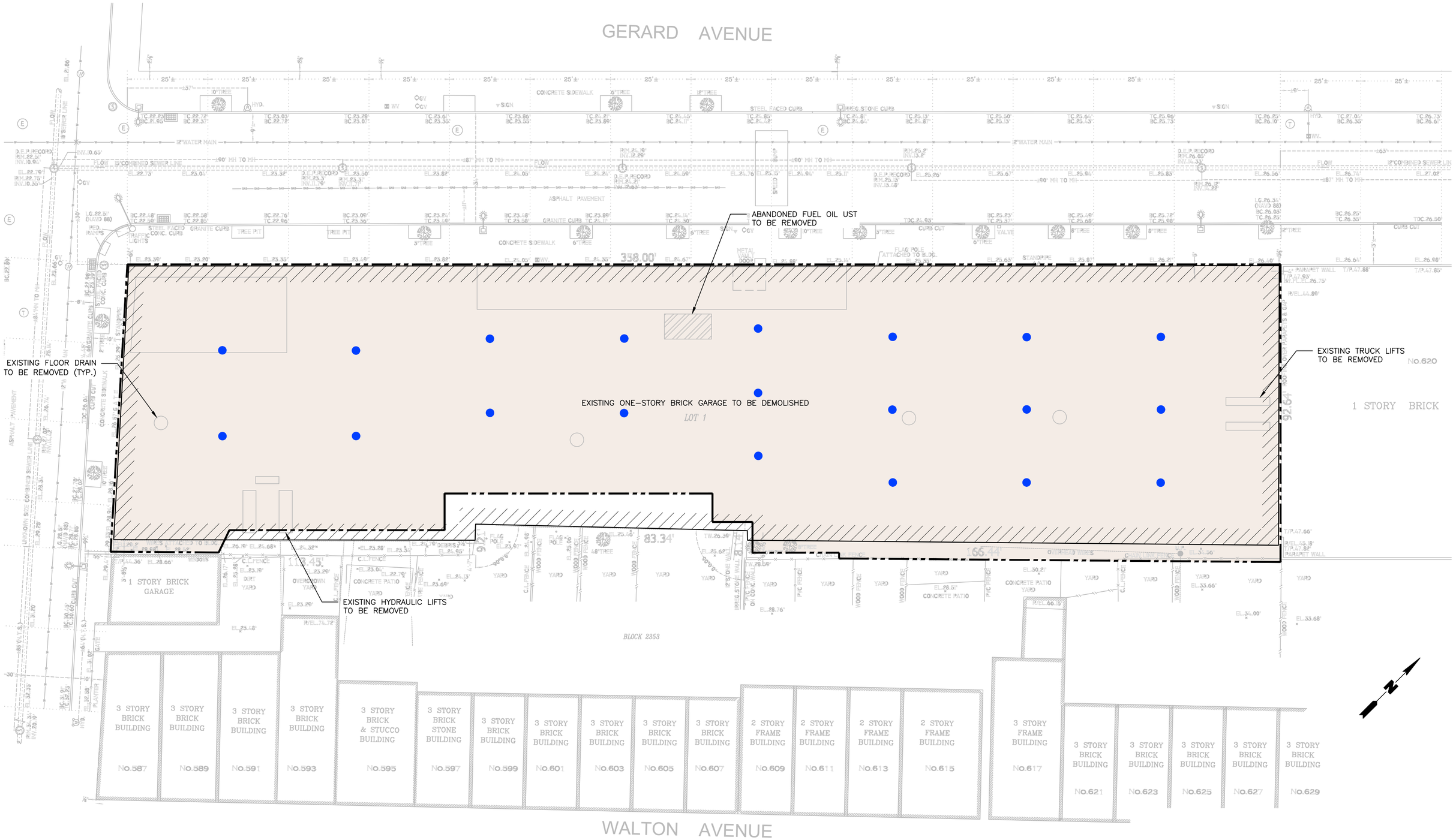
Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: N.P.	Date: 30AUG21	FIGURE 9
Prepared by: G.M.	Scale: AS SHOWN	
Project Mgr: J.L.	Project: 3523.0001Y000	
File: 3523.0001Y107.02.DWG		

V:\CAD\PROJECTS\3523Y\0001Y\107\3523.0001Y107.02.DWG



LEGEND

	BCP SITE BOUNDARY
	PROPOSED LIMITS OF EXCAVATION TO 15 FT BLS
	EXISTING BUILDING
●	PROPOSED BOTTOM DOCUMENTATION SAMPLE
BCP	BROWNFIELD CLEANUP PROGRAM
BLS	BELOW LAND SURFACE
NYSDEC	NEW YORK STATE DEPARTMENT OF ENNRIONMENTAL CONSERVATION
UUSCOs	PART 375 UNRESTRICTED USE SOIL CLEANUP OBJECTIVES
RRSCOs	RESTRICTED RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
PGWSCOs	PROTECTION OF GROUNDWATER SOIL CLEANUP OBJECTIVES

NOTES

1. EXCAVATION BOTTOM DOCUMENTATION SAMPLES WILL BE COLLECTED AT A RATE OF 1 SAMPLE PER 1,500 SQUARE FEET OF AREA (20 SAMPLES TOTAL). SAMPLES WILL BE ANALYZED FOR THE FULL SUITE OF PART 375 PARAMETERS AND EMERGING CONTAMINANTS OF CONCERN. SIDEWALL DOCUMENTATION SAMPLES ARE NOT REQUIRED BASED ON EXCAVATION EXTENDING TO BCP SITE BOUNDARY.
2. THE RESULTS OF DOCUMENTATION SAMPLING WILL DETERMINE THE CLEANUP TRACK ACHIEVED IN EACH AREA OF THE SITE. TRACK 1 AREAS SHALL MEET NYSDEC UUSCOS.
3. BACKFILL WILL MEET NYSDEC UUSCOS IN TRACK 1 AREAS AND THE LOWER OF THE NYSDEC RRSCOS AND PGWSCOS IN TRACK 2 AREAS. FILL MATERIALS WITH LESS THAN 10 PERCENT PASSING THE NUMBER 80 SIEVE (I.E. STONE, GRAVEL, ETC.) DO NOT REQUIRE SAMPLING.
4. A VAPOR BARRIER SYSTEM (MINIMUM THICKNESS OF 20 MIL) SHALL BE INSTALLED UNDER THE BUILDING FOUNDATION'S SLAB AND UP THE FOUNDATION WALLS.
5. TEMPORARY DEWATERING FOR CONSTRUCTION OF ELEVATOR PITS, FOOTINGS, AND OTHER FOUNDATION COMPONENTS SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS. EXTRACTED GROUNDWATER SHALL EITHER BE CONTAINERIZED FOR OFF-SITE LICENSED OR PERMITTED DISPOSAL OR TREATED ON-SITE AND DISCHARGED TO THE CITY SEWER SYSTEM UNDER APPROPRIATE PERMITS.
6. AN ENVIRONMENTAL EASEMENT WILL BE PLACED ON THE SITE AND REQUIRE A GROUNDWATER USE RESTRICTION AND COMPLIANCE WITH A SITE MANAGEMENT PLAN.
7. THE SITE MANAGEMENT PLAN WILL INCLUDE A GROUNDWATER MONITORING PROGRAM AND REQUIRE MANAGEMENT OF SOILS REMAINING AT DEPTH THAT EXCEED THE LOWER OF THE NYSDEC RRSCOS AND UUSCOS IN TRACK 2 AREAS.

20' 0 20'

Title:

REMEDIAL ALTERNATIVE 2: TRACK 2 CLEANUP

580 GERARD AVENUE
BRONX, NEW YORK

Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: N.P.	Date: 30AUG21	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	10
Project Mgr: J.L.	Project: 3523.0001Y000	
File: 3523.0001Y107.02.DWG		

V:\CAD\PROJECTS\3523Y\0001Y\107\3523.0001Y107.02.DWG

APPENDICES

A. Metes and Bounds
B. Soil Boring and Well Construction Logs
C. Groundwater Sampling Forms
D. Soil Vapor Sampling Forms
E. Analytical Data from the Remedial Investigation
F. Data Usability Summary Report for Remedial Investigation Data
G Site-Specific Quality Assurance Project Plan
H. Site-Specific Health and Safety Plan
I. Site Specific Community Air Monitoring Plan
J. Resumes of Key Personnel
K. Proposed Demolition Plans
L. Proposed Support of Excavation Plans
M. NYSDEC Request to Import/Reuse Fill Material Form

APPENDIX A

Metes and Bounds

TREE PIT	HYDRANT	WATER VALVE	CATCH BASIN	LIGHT POST	WATER MANHOLE	TELEPHONE MANHOLE	EL. ELEVATION	BC-EL. ON BOTTOM OF CURB	LG-LEGAL GRADE	C.D.-CELLAR DOOR	ENT. ENTRANCE	C.L. CLEAR
ELECTRIC BOX	UTILITY POLE	TRAFFIC SIGN	GAS VALVE	PARKING METER	ELECTRIC MANHOLE	SEWER MANHOLE	TC-EL.ON TOP OF CURB	C.L-EL. ON CENTER OF ROAD	LA LOW AREA	F.E-FIRE ESCAPE	BT.- BIGHT ON LINE	N.T.S. NOT TO SCALE

— LEGEND —

ADDRESS:
580 GERARD AVENUE
BRONX, N.Y.

GERARD (60' WIDE) AVENUE

EAST 150TH (60' WIDE) STREET

WALTON (60' WIDE) AVENUE

P.O.B. BCP SITE BOUNDARY

358.00'

92.56'

89.38'

83.16'

66.93'

33.48'

11.43'

8.85'

12.49'

9.50'

26.94'

1.55'

136.98'

166.44'

7.69'

93°20'35"

87°11'42"

110°40'58"

115°14'24"

89°57'54"

89°48'13"

89°51'48"

89°50'16"

90°02'02"

90°3'09"

90°3'02"

90°00'00"

90°27'57"

BCP SITE BOUNDARY No. 203142

1 STORY BRICK GARAGE

580 GERARD
FORMER POST OFFICE VEHICLE REPAIR SHOP

No.620
1 STORY BRICK BUILDING

BCP SITE - AREA OF EXCAVATION

BEGINNING AT THE INTERSECTION FORMED BY THE NORTH SIDE OF EAST 150TH STREET WITH THE EAST SIDE OF GERARD AVENUE;
THENCE NORTH ALONG THE EAST SIDE OF SAID GERARD AVENUE A DISTANCE OF 358.00 FEET;
THENCE EAST WITH AN INTERIOR ANGLE OF 90°00'00" A DISTANCE OF 92.56 FEET;
THENCE SOUTH WITH AN INTERIOR ANGLE OF 89°27'43" A DISTANCE OF 136.98 FEET;
THENCE WEST WITH AN INTERIOR ANGLE OF 90°03'19" A DISTANCE OF 1.55 FEET;
THENCE SOUTH WITH AN EXTERIOR ANGLE OF 90°03'22" A DISTANCE OF 26.94 FEET;
THENCE WEST WITH AN INTERIOR ANGLE OF 90°36'06" A DISTANCE OF 9.50 FEET;
THENCE SOUTH WITH AN EXTERIOR ANGLE OF 90°02'02" A DISTANCE OF 12.49 FEET;
THENCE WEST WITH AN INTERIOR ANGLE OF 89°50'16" A DISTANCE OF 8.85 FEET;
THENCE SOUTH WITH AN EXTERIOR ANGLE OF 89°51'48" A DISTANCE OF 83.16 FEET;
THENCE EAST WITH AN EXTERIOR ANGLE OF 89°57'54" A DISTANCE OF 11.43 FEET;
THENCE SOUTH WITH AN INTERIOR ANGLE 89°58'13" A DISTANCE OF 66.93 FEET;
THENCE SOUTHEASTERLY WITH AN EXTERIOR ANGLE OF 115°14'24" A DISTANCE OF 7.69 FEET;
THENCE SOUTH WITH AN INTERIOR ANGLE OF 114°41'38" A DISTANCE OF 33.48 FEET TO A POINT ON THE NORTH SIDE OF EAST 150TH STREET;
THENCE WEST ALONG SAID NORTH SIDE OF EAST 150TH STREET A DISTANCE OF 89.38 FEET TO THE POINT OF BEGINNING.
SAID EASEMENT CONTAINS 0.6998 ACRES

DATE	DESCRIPTION
SEPT. 29, 2021	SOE ESMNT - AREA OF EXCAVATION

BLOCK 2353
LOT 1
SECTION
COUNTY BRONX
DWG BY A.G.
CHKD BY J.A.

SCALE: 1"= 15'

MERIDIAN LAYOUT INC
3280 SUNRISE HWY, SUITE 341
WANTAGH, NY 11793
TEL. 516-787-3299

APPENDIX B

Soil Boring and Well Construction Logs

RXSB-01/RXMW-01

Client:	Site:	Project Number:
SB Gerard Avenue, LLC	Former Post Office Vehicle Repair Shop	3523.0001Y000
Address:	**City/State:**	**Logged By:**
580 Gerard Avenue	Bronx, NY	V.Ricigliano

Start to Finish Date:	Contractor:	Drill Type:	Sampler Type/Method:
6/28/2021 - 6/28/2021	Trinity Environmental Corp	Geoprobe	2" Macro-Core
Borehole Depth:	**Backfill:**	**Borehole Diameter:**	**DTW:**
25.25 feet	Clean cuttings	4-inches	22.38 feet
Area:	**Elevation:**	**Northing:**	**Easting:**
Bronx	26.43	238072.969	1004011.222

Well Depth:	Well Dia./Materials:	Screen Interval:	Screen Slot Size:	Sand/Filter Pack Size:	Annular Seal:
25.25 feet	2-inch PVC	15.25-25.25 feet	10-Slot	#2	Bentonite Chips

Depth (ft)	Well Diagram	USCS	USCS Graphic	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
	Flushmount J-Plug	MIXD		Medium grey, fine to coarse SAND, trace medium to fine gravel and brick [FILL]; moist.		5	0.3	
				Medium brown, fine to medium SAND, trace fine gravel, and cobble [FILL]; moist.	G		0.3	Collected RXSB-01 (0-2).
		MIXD						Pre-cleared to 5 ft bls.
5							0.0	
								Collected RXSB-01 (4-6).
	15.25' of 2-inch diameter PVC riser.					3	0.0	
		SWG		Light grey, medium to fine SAND, trace gravel and cobble; dry.				
10				Medium brown, fine to medium SAND; moist.			2.4	
	Bentonite pellets.					1.5	2.1	Collected RXSB-01 (10-12).
	#2 Morie Sand.							Collected RXSB-01 (14-16).
15		GW					0.0	
						1.5	0.0	
20	10' of 2-inch diameter, 20-slot PVC screen.						0.0	Groundwater encountered at 22.38 ft bls.
	GROUND WATER LEVEL 6/28/2021					1.5	0.0	
		GW		Medium brown, fine to medium SAND; wet.			0.0	
25	Well bottom.							RXMW-01 installed at 25.25 ft bls.

Bottom of borehole at 25.25 feet

RXSB-02/RXSV-02

Client: SB Gerard Avenue, LLC	Site: Former Post Office Vehicle Repair Shop	Project Number: 3523.0001Y000
Address: 580 Gerard Avenue	City/State: Bronx, NY	Logged By: V.Ricigliano

Start to Finish Date: 6/29/2021 - 6/30/2021	Contractor: Trinity Environmental Corp	Drill Type: Geoprobe	Sampler Type/Method: 2" Macro-Core
Borehole Depth: 13 feet	Backfill: Clean cuttings	Borehole Diameter: 4-inches	DTW:
Area: Bronx	Elevation: NM	Northing: NM	Easting: NM

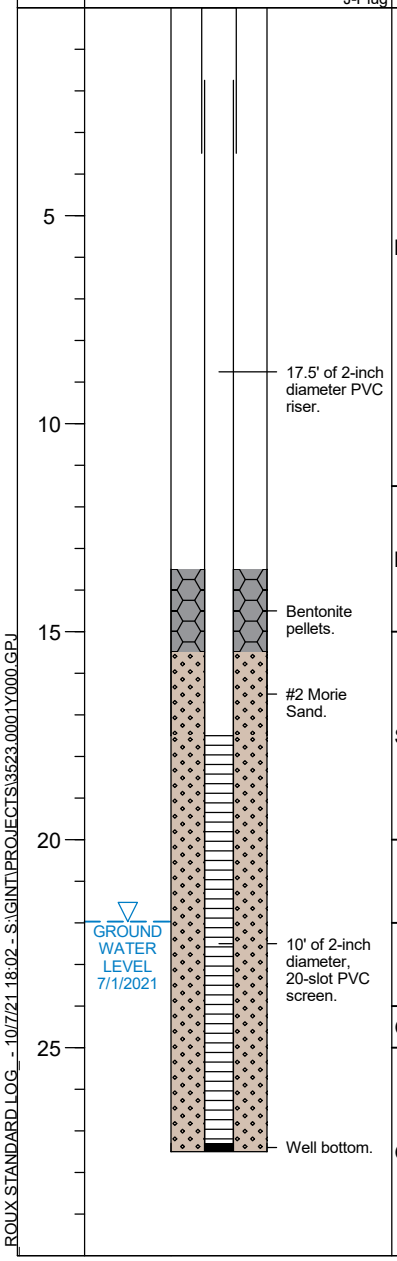
Depth (ft)	USCS	USCS Graphic	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
	MIXD		Dark brown SAND, some fine to coarse Gravel, trace brick and construction debris (nails and metal scrap)[FILL]; moist.	G	5	0.0 0.1	Collected RXSB-02 (0-2).
5	MIXD		Dark to medium brown SAND, some fine to coarse Gravel, trace slag and brick [FILL]; dry.			0.0	Pre-cleared to 5 ft bls. Collected RXSB-02 (4-6).
	CL		Greyish brown, fine to medium SAND, some fine to medium Gravel; dry.		2	0.0	Collected RXSB-02 (10-12).
10	GWS		Light grey, fine to coarse SAND, some coarse Gravel; dry		0.5	0.0 0.0	RXSV-02 installed at 13 ft bls. Refusal encountered at 13 ft bls.
			Bottom of borehole at 13 feet				

RXSB-03/RXMW-02

Client: SB Gerard Avenue, LLC	Site: Former Post Office Vehicle Repair Shop	Project Number: 3523.0001Y000
Address: 580 Gerard Avenue	City/State: Bronx, NY	Logged By: V.Ricigliano

Start to Finish Date: 6/30/2021 - 7/1/2021	Contractor: Trinity Environmental Corp	Drill Type: Geoprobe	Sampler Type/Method: 2" Macro-Core
Borehole Depth: 30 feet	Backfill: Clean cuttings	Borehole Diameter: 4-inches	DTW: 21.97 feet
Area: Bronx	Elevation: 26.48	Northing: 238195.473	Easting: 1004055.428

Well Depth: 27.5 feet	Well Dia./Materials: 2-inch PVC	Screen Interval: 17.5-27.5 feet	Screen Slot Size: 10-Slot	Sand/Filter Pack Size: #2	Annular Seal: Bentonite Chips



USCS	USCS Graphic	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
		Dark medium brown, fine to medium SAND, some fine to medium Gravel, trace brick[FILL]; moist.	G	5	0.3	
					0.3	Collected RXSB-03 (0-2).
						Pre-cleared to 5 ft bls.
MIXD					0.2	
				2.5	0.0	Collected RXSB-03 (4-6).
					0.4	
MIXD		Reddish brown, fine to medium SAND, trace fine gravel; moist.		2.5	0.1	Collected RXSB-03 (10-12).
						Collected RXSB-03 (14-16).
SWG		Medium brown, fine to medium SAND; very moist.		4.75	0.1	
					0.1	
GW		Medium reddish brown, fine to medium SAND, trace medium to coarse gravel; wet.				
GW		Medium brown, fine to medium SAND, trace medium to coarse gravel; wet.		5	0.4	Groundwater encountered at 21.97 ft bls. Collected RXSB-03 (23-25).
GWS		Dark grey, fine to coarse Gravel, some fine to medium Sand; wet.			669.4 1100	Staining and odor detected at 24 ft bls.
		Medium to light brown SAND, some fine to coarse Gravel; wet.			176.5	RXMW-02 installed at 27.5 ft bls.
GWS				5	76.7 4.7 3.5 1.2	Refusal encountered at 30 ft bls.

Bottom of borehole at 30 feet

RXSB-04/RXMW-03

Client: SB Gerard Avenue, LLC	Site: Former Post Office Vehicle Repair Shop	Project Number: 3523.0001Y000
Address: 580 Gerard Avenue	City/State: Bronx, NY	Logged By: V.Ricigliano

Start to Finish Date: 7/1/2021 - 7/2/2021	Contractor: Trinity Environmental Corp	Drill Type: Geoprobe	Sampler Type/Method: 2" Macro-Core
Borehole Depth: 30 feet	Backfill: Clean cuttings	Borehole Diameter: 4-inches	DTW: 22.03 feet
Area: Bronx	Elevation: 26.48	Northing: 238237.722	Easting: 1004066.151

Well Depth: 27.5 feet	Well Dia./Materials: 2-inch PVC	Screen Interval: 17.5-27.5 feet	Screen Slot Size: 10-Slot	Sand/Filter Pack Size: #2	Annular Seal: Bentonite Chips

Depth (ft)	Well Diagram	USCS	USCS Graphic	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
	Flushmount J-Plug	MIXD		Greyish brown, fine to medium SAND, trace fine to medium gravel and brick (garbage and metal debris) [FILL]; moist.	G	5	0.4	
							0.3	Collected RXSB-04 (0-2).
		MIXD		Medium to dark brown, fine to medium SAND, some fine Gravel, trace coarse gravel and brick [FILL]; moist.				Pre-cleared to 5 ft bls.
5							14.1	
								Collected RXSB-04 (4-6).
		MIXD		Dark grey, fine to medium SAND, trace fine to coarse gravels, brick, and construction debris (tiles) [FILL]; moist.		2.5	0.3	
	17.5' of 2-inch diameter PVC riser.							
10							0.4	
		GP		Reddish brown, fine to medium SAND, trace fine gravel; moist.		2.5	0.3	Collected RXSB-04 (10-12).
								Collected RXSB-04 (14-16).
15	Bentonite pellets.						0.3	
	#2 Morie Sand.					4.5	0.2	
20							0.3	
		SM		Medium brown, fine to coarse SILTY SAND, trace fine gravel; wet.		4.5	0.3	Groundwater encountered at 22.03 ft bls. Collected RXSB-04 (23-25).
	GROUND WATER LEVEL 7/2/2021	CL-CH		Dark to light greyish brown, medium to coarse SAND; wet.			64.7	Staining and odor detected at 24 ft bls.
	10' of 2-inch diameter, 20-slot PVC screen.						317.2	
25							296.2	RXMW-03 installed at 27.5 ft bls.
		MIXD		Reddish brown to grey, fine to coarse SAND, trace fine gravel; wet.		2.5	163	
	Well bottom.						256	Refusal encountered at 30 ft bls.

Bottom of borehole at 30 feet

RXSB-05/RXSV-05

Client: SB Gerard Avenue, LLC	Site: Former Post Office Vehicle Repair Shop	Project Number: 3523.0001Y000
Address: 580 Gerard Avenue	City/State: Bronx, NY	Logged By: V.Ricigliano

Start to Finish Date: 7/6/2021 - 7/6/2021	Contractor: Trinity Environmental Corp	Drill Type: Geoprobe	Sampler Type/Method: 2" Macro-Core
Borehole Depth: 5.5 feet	Backfill: Clean cuttings	Borehole Diameter: 4-inches	DTW:
Area: Bronx	Elevation: NM	Northing: NM	Easting: NM

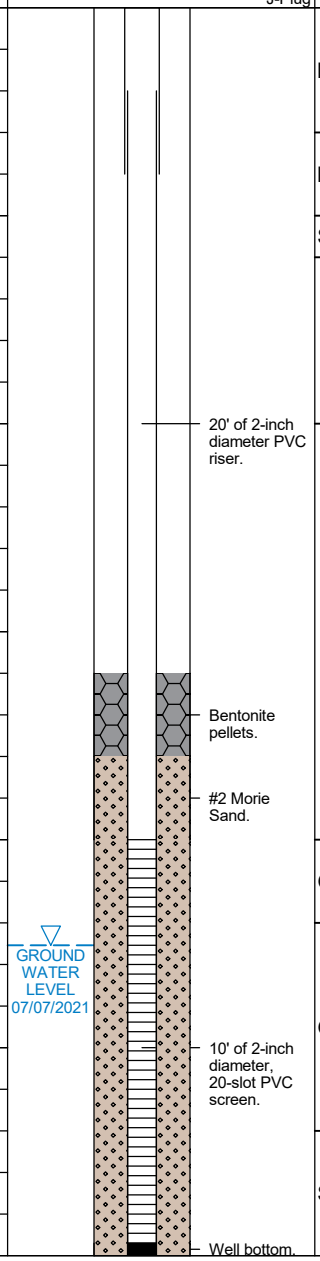
Depth (ft)	USCS	USCS Graphic	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
	MIXD		Dark gray to black, fine to medium SAND, some fine Gravel, trace brick, and wood [FILL]; moist.	G	5.5	2489 2441 2463 1257 11.5	Collected RXSB-11 (0-2).
	MIXD		Medium to dark brown, fine to medium SAND, some fine to medium Gravel, trace brick, wood, and glass [FILL]; moist.				Pre-cleared to 5.5 ft bls. RXSV-05 installed at 5.5 ft bls.
	SWG		Cobbles and boulders, trace fine to medium sand; dry.				
5						2.4	Refusal encountered at 5.5 ft bls.
			Bottom of borehole at 5.5 feet				

RXSB-06/RXMW-04

Client: SB Gerard Avenue, LLC	Site: Former Post Office Vehicle Repair Shop	Project Number: 3523.0001Y000
Address: 580 Gerard Avenue	City/State: Bronx, NY	Logged By: V.Ricigliano

Start to Finish Date: 7/7/2021 - 7/7/2021	Contractor: Trinity Environmental Corp	Drill Type: Geoprobe	Sampler Type/Method: 2" Macro-Core
Borehole Depth: 30 feet	Backfill: Clean cuttings	Borehole Diameter: 4-inches	DTW: 22.54 feet
Area: Bronx	Elevation: 26.53	Northing: 238322.44	Easting: 1004088.428

Well Depth: 30 feet	Well Dia./Materials: 2-inch PVC	Screen Interval: 20-30 feet	Screen Slot Size: 10-Slot	Sand/Filter Pack Size: #2	Annular Seal: Bentonite Chips



USCS	USCS Graphic	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
MIXD		Dark brown, fine to medium SAND, some fine Gravel, trace coarse gravel, brick, and glass [FILL]; moist.	G	5	4.6	
					2.6	Collected RXSB-06 (0-2).
MIXD		Dark brown, fine to medium SAND, trace fine gravel, and brick [FILL]; moist.				Pre-cleared to 5 ft bls.
SWG		Dark brown, fine to medium SAND; moist.			4.4	
					6.4	Collected RXSB-06 (4-6).
GW		Reddish brown, fine to medium SAND; moist.		3	1.8	
		Medium to reddish brown, fine to medium SAND; moist.			4.2	
						Collected RXSB-06 (10-12).
				1.5	4.3	
GW					3.8	Collected RXSB-06 (14-16).
				1.5	4.6	
					12	
GWS		Medium to reddish brown, fine to medium SAND; very moist.				
		Medium to light brown SAND, some fine to coarse Gravel; wet.		1.5	12.8	Groundwater encountered at 22.54 ft bls. Collected RXSB-06 (23-25).
GWS					1007 1294 1604	Staining and odor detected at 24 ft bls. RXMW-04 installed at 30 ft bls.
					324	
					310	
SWG		Grey, fine to medium SAND, some fine Gravel, trace silt and coarse gravel; wet.			16	Refusal encountered at 30 ft bls.
					9.4	

Bottom of borehole at 30 feet

RXSB-07/RXSV-06

Client: SB Gerard Avenue, LLC	Site: Former Post Office Vehicle Repair Shop	Project Number: 3523.0001Y000	
Address: 580 Gerard Avenue	City/State: Bronx, NY	Logged By: V.Ricigliano	
Start to Finish Date: 7/8/2021 - 7/9/2021	Contractor: Trinity Environmental Corp	Drill Type: Geoprobe	Sampler Type/Method: 2" Macro-Core
Borehole Depth: 25 feet	Backfill: Clean cuttings	Borehole Diameter: 4-inches	DTW:
Area: Bronx	Elevation: NM	Northing: NM	Easting: NM

Depth (ft)	USCS	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
	MIXD	Dark to medium brown, fine to medium SAND, some fine Gravel, trace coarse gravel, brick and glass [FILL]; moist.	G	5	3.0	Collected RXSB-07 (0-2).
					3.3	Pre-cleared to 5 ft bls.
	GWS	Cobble and boulders, trace fine to medium SAND; moist.				
5	SPG	Reddish brown to medium brown, fine to medium SAND, trace fine to coarse gravels; moist.			0.0	
					3.0	Collected RXSB-07 (4-6).
		Medium to reddish brown, fine to medium SAND; moist.		3	4.0	
10					2.1	
	SW			1.5	10.6	
15					11.6	Collected RXSB-07 (14-16).
						RXSV-06 installed at 16 ft bls.
				1.5	12.12	
20		Medium brown, fine to medium SANDY SILT; wet.			31.4	
	MLS			1.5	32.12	
	SP	Dark Grey, fine to medium SAND, trace silt; wet.			3061	Staining and odor detected from 23 to 25 ft bls.
25		Bottom of borehole at 25 feet			2628	Collected RXSB-07 (23-25). Refusal encountered at 25 ft bls.

RXSB-08/RXSV-01

Client:	Site:	Project Number:
SB Gerard Avenue, LLC	Former Post Office Vehicle Repair Shop	3523.0001Y000
Address:	**City/State:**	**Logged By:**
580 Gerard Avenue	Bronx, NY	V.Ricigliano

Start to Finish Date:	Contractor:	Drill Type:	Sampler Type/Method:
6/28/2021 - 6/28/2021	Trinity Environmental Corp	Geoprobe	2" Macro-Core
Borehole Depth:	**Backfill:**	**Borehole Diameter:**	**DTW:**
9 feet	Clean cuttings	4-inches	
Area:	**Elevation:**	**Northing:**	**Easting:**
Bronx	NM	NM	NM

Depth (ft)	USCS	USCS Graphic	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
	MIXD		Dark brown, medium to coarse SAND, trace medium to fine gravel and brick [FILL]; moist.	G	5	0.0 0.0	Collected RXSB-08 (0-2). Pre-cleared to 5 ft bls.
5	MIXD		Medium to dark brown, fine to medium SAND, some coarse Gravel, trace silt and brick [FILL]; moist.		4	0.0 0.0	Collected RXSB-08 (4-6) and DUP_062821. RXSV-01 installed at 9 ft bls Refusal encountered at 9 ft bls.
			Bottom of borehole at 9 feet				

RXSB-09

Client: SB Gerard Avenue, LLC	Site: Former Post Office Vehicle Repair Shop	Project Number: 3523.0001Y000
Address: 580 Gerard Avenue	City/State: Bronx, NY	Logged By: V.Ricigliano

Start to Finish Date: 6/29/2021 - 6/29/2021	Contractor: Trinity Environmental Corp	Drill Type: Geoprobe	Sampler Type/Method: 2" Macro-Core
Borehole Depth: 22 feet	Backfill: Clean cuttings	Borehole Diameter: 4-inches	DTW:
Area: Bronx	Elevation: NM	Northing: NM	Easting: NM

Depth (ft)	USCS	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
	MIXD	Medium to dark brown, fine to medium SAND, some fine to medium Gravel, trace brick [FILL]; moist.	G	5	0.3	Collected RXSB-09 (0-2).
					0.1	Pre-cleared to 5 ft bls.
	MIXD	Medium to dark brown, fine to medium SAND, some fine to coarse grave; dry.			0.1	
5					0.1	Collected RXSB-09 (4-6).
		Greyish brown, fine to medium SAND, some fine to medium gravel; dry.		3	0.1	
10	SWG				0.1	Collected RXSB-09 (10-12).
				2.5	0.1	
		Reddish brown, fine to medium SAND, trace fine gravel; moist.			0.3	Collected RXSB-09 (14-16).
15	SWG			3.5	0.2	
	SPG	Grey to medium brown, fine to medium SAND, some fine to medium gravel; moist.				
		Light brown, medium to coarse SAND, trace fine to coarse gravel; moist.				Refusal encountered at 22 ft bls.
20	GWS			1	0.1	
		Bottom of borehole at 22 feet			0.1	

RXSB-10/RXSV-03

Client: SB Gerard Avenue, LLC	Site: Former Post Office Vehicle Repair Shop	Project Number: 3523.0001Y000	
Address: 580 Gerard Avenue	City/State: Bronx, NY	Logged By: V.Ricigliano	
Start to Finish Date: 6/29/2021 - 6/29/2021	Contractor: Trinity Environmental Corp	Drill Type: Geoprobe	Sampler Type/Method: 2" Macro-Core
Borehole Depth: 19.75 feet	Backfill: Clean cuttings	Borehole Diameter: 4-inches	DTW:
Area: Bronx	Elevation: NM	Northing: NM	Easting: NM

Depth (ft)	USCS	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
	MIXD	Medium to dark brown, fine to medium SAND, some fine to coase Gravel, trace brick [FILL]; dry.	G	5	0.4	Collected RXSB-10 (0-2)
					0.4	Pre-clear to 5 ft bls.
		Greyish brown, fine to medium SAND, some fine to medium Gravel and brick [FILL]; dry.				
5					0.4	
	MIXD				0.2	Collected RXSB-10 (4-6)
				2.5	0.1	
	MIXD	Dark brown, fine to medium SAND, trace brick, some fine to coarse Gravel [FILL]; dry.				
10		Reddish brown, fine to medium SAND; moist.			0.4	
	SP					Collected RXSB-10 (10-12)
				3.75	0.4	
15		Medium brown, fine to medium SAND; moist.			0.3	Collected RXSB-10 (14-16)
	SP			4	0.3	RXSV-03 installed at 16 ft bls.
					0.3	Refusal encountered at 19.75 ft bls.
		Bottom of borehole at 19.75 feet				

RXSB-11

Client: SB Gerard Avenue, LLC	Site: Former Post Office Vehicle Repair Shop	Project Number: 3523.0001Y000
Address: 580 Gerard Avenue	City/State: Bronx, NY	Logged By: V.Ricigliano

Start to Finish Date: 7/2/2021 - 7/2/2021	Contractor: Trinity Environmental Corp	Drill Type: Geoprobe	Sampler Type/Method: 2" Macro-Core
Borehole Depth: 5.5 feet	Backfill: Clean cuttings	Borehole Diameter: 4-inches	DTW:
Area: Bronx	Elevation: NM	Northing: NM	Easting: NM

Depth (ft)	USCS	USCS Graphic	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
	MIXD		Dark gray, fine to medium SAND, some fine Gravel, trace brick [FILL]; moist.			2.4	
	MIXD		Dark gray, fine to medium SAND, some fine Gravel, trace coarse gravel and brick [FILL]; moist.	G	5.5	2.0	Collected RXSB-11 (0-2) and DUP_070221.
	SWG		Cobble and boulder, trace sand; dry.				Pre-cleared to 5.5 ft bls.
5						1.7	Refusal encountered at 5.5 ft bls.
			Bottom of borehole at 5.5 feet				

RXSB-12/RXSV-04

Client:	Site:	Project Number:
SB Gerard Avenue, LLC	Former Post Office Vehicle Repair Shop	3523.0001Y000
Address:	**City/State:**	**Logged By:**
580 Gerard Avenue	Bronx, NY	V.Ricigliano

Start to Finish Date:	Contractor:	Drill Type:	Sampler Type/Method:
7/6/2021 - 7/6/2021	Trinity Environmental Corp	Geoprobe	2" Macro-Core
Borehole Depth:	**Backfill:**	**Borehole Diameter:**	**DTW:**
18.5 feet	Clean cuttings	4-inches	
Area:	**Elevation:**	**Northing:**	**Easting:**
Bronx	NM	NM	NM

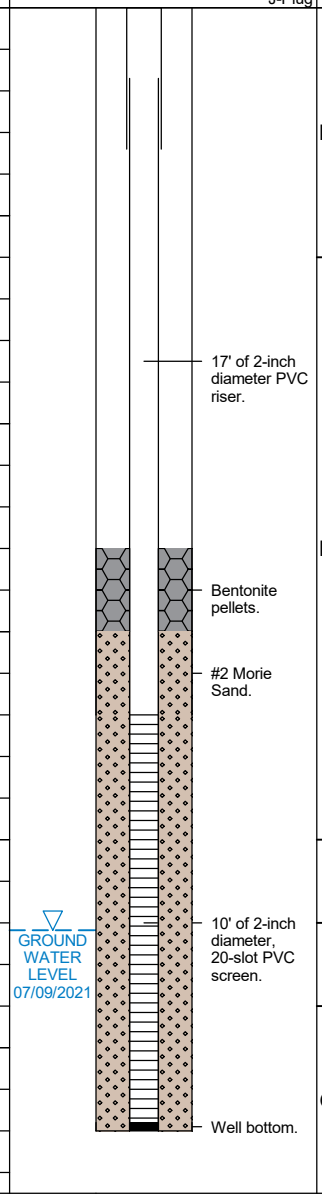
Depth (ft)	USCS	USCS Graphic	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
	MIXD		Dark gray to brown, fine to medium SAND, some fine to coarse Gravel, trace brick, tile, and glass [FILL]; dry.	G	5	2.5 4.0	Collected RXSB-12 (0-2).
	GWS		Cobble and boulders, trace fine to medium sand [FILL]; moist.				Pre-cleared to 5 ft bls.
5	MIXD		Dark gray, fine to medium SAND, trace fine gravel and brick [FILL]; moist.			2.0	
	SP		Reddish brown, fine to medium SAND, trace fine gravel; moist.		2	2.0	Collected RXSB-12 (4-6).
10						0.5	Collected RXSB-12 (10-12).
	SP		Reddish to medium brown, fine to medium SAND, trace fine gravel; moist.		4.5	0.3	
15						0.3	Collected RXSB-12 (14-16).
					2.5		RXSV-04 installed at 16 ft bls.
						0.3	
			Bottom of borehole at 18.5 feet				Refusal encountered at 18.5 ft bls.

RXSB-13/RXMW-06

Client: SB Gerard Avenue, LLC	Site: Former Post Office Vehicle Repair Shop	Project Number: 3523.0001Y000
Address: 580 Gerard Avenue	City/State: Bronx, NY	Logged By: V.Ricigliano

Start to Finish Date: 7/7/2021 - 7/8/2021	Contractor: Trinity Environmental Corp	Drill Type: Geoprobe	Sampler Type/Method: 2" Macro-Core
Borehole Depth: 28.5 feet	Backfill: Clean cuttings	Borehole Diameter: 4-inches	DTW: 22.18 feet
Area: Bronx	Elevation: 26.51	Northing: 238307.552	Easting: 1004111.365

Well Depth: 27 feet	Well Dia./Materials: 2-inch PVC	Screen Interval: 17-27 feet	Screen Slot Size: 10-Slot	Sand/Filter Pack Size: #2	Annular Seal: Bentonite Chips



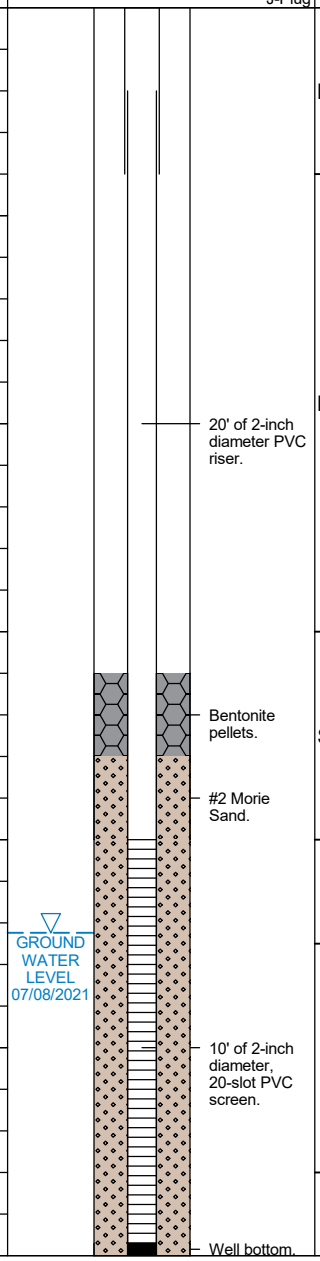
Depth (ft)	USCS	USCS Graphic	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
0	MIXD		Dark to medium brown, fine to medium SAND, some fine to coarse Gravel, trace brick, construction debris (plastic and glass)[FILL]; moist.	G	5	0.3	
						4.2	Collected RXSB-13 (0-2).
							Pre-cleared to 5 ft bls.
5						5.6	
			Reddish brown, fine to medium SAND, trace fine gravel; moist.		3	0.9	Collected RXSB-13 (4-6).
10						0.5	Collected RXSB-13 (10-12).
	MIXD				1.5	0.5	RXMW-06 installed at 27 ft bls. Refusal encountered at 28.5 ft bls.
15						0.4	Collected RXSB-13 (14-16).
					1.5	0.9	
20						10	
	SW		Medium brown, fine to medium SAND; very moist.			12	
	GW		Medium brown, fine to medium SAND, trace medium to coarse gravel; wet.		1.5	204	Groundwater encountered at 22.18 ft bls.
			Dark gray, fine to coarse gravel, some fine to medium Sand; wet.			914.4	
						913.5	Collected RXSB-13 (23-25).
25						294	Odor and staining detected from 24 to 27 ft bls.
	GWS				2	197.5	
						101.8	
			Bottom of borehole at 28.5 feet			60.9	

RXSB-14/RXMW-05

Client: SB Gerard Avenue, LLC	Site: Former Post Office Vehicle Repair Shop	Project Number: 3523.0001Y000
Address: 580 Gerard Avenue	City/State: Bronx, NY	Logged By: V.Ricigliano

Start to Finish Date: 7/8/2021 - 7/8/2021	Contractor: Trinity Environmental Corp	Drill Type: Geoprobe	Sampler Type/Method: 2" Macro-Core
Borehole Depth: 30 feet	Backfill: Clean cuttings	Borehole Diameter: 4-inches	DTW: 22.24 feet
Area: Bronx	Elevation: 26.66	Northing: 238351.847	Easting: 1004125.283

Well Depth: 30 feet	Well Dia./Materials: 2-inch PVC	Screen Interval: 20-30 feet	Screen Slot Size: 10-Slot	Sand/Filter Pack Size: #2	Annular Seal: Bentonite Chips



USCS	USCS Graphic	Visual Description	Sample Interval	Recovery (ft)	PID	Notes
MIXD		Dark grey, fine to medium SAND, trace fine to coarse Gravel, brick, glass and construction debris (metal, plastic)[FILL]; moist.	G	5	1.2	
					1.0	Collected RXSB-14 (0-2).
		Medium brown, fine to medium SAND; moist.				Pre-cleared to 5 ft bls.
					0.6	
						Collected RXSB-14 (4-6).
				4.5	0.6	
MIXD					3.0	Collected RXSB-14 (10-12).
				4.5	3.0	
						Refusal encountered at 30 ft bls.
		Medium brown, fine to medium SAND; very moist.			7.1	Collected RXSB-14 (14-16).
SWG				4.5	1.2	
		Medium brown, CLAYEY SAND, trace fine to medium gravel; very moist.			0.8	
SC				4.5	0.9	Groundwater encountered at 22.24 ft bls.
		Medium brown, CLAYEY SAND, trace fine to medium gravel; wet.				
SC					1.2	
				3.5	1.5	
GW		Brown to grey CLAY, trace gravel; wet.			1.5	RXMW-05 installed at 30 ft bls.

Bottom of borehole at 30 feet

APPENDIX C

Groundwater Sampling Forms

Well Sampling Data Form

Client: SB Gerard Avenue LLC **Project Number:** 3523.0001Y000

Site Location: 580 Gerard Ave, Bronx, NY

Well No: RXMW-01 Weather: Clear/Sunny 80 deg. F

Date: 7/16/2021 Purge Water Disposal: Drum

Sampled By: V. Ricigliano Well Diameter / Type: 2" PVC Flush Mount

Depth of Well (ft): 24.58 Water Column (ft): 3.44

Depth to Water(ft): 21.14 Volume of Water in Well (gal) 0.561

Depth to Product (ft): -

well diameter:	1 in	2 in	4 in	6 in	8 in
gallons per foot:	0.041	0.163	0.653	1.469	2.611

Start Purging: 11:40 Purge Rate: 200

End Purging: 12:30 Volume of Water Removed (gal): 2

Method of Purge: Low-Flow Method of Sampling: Peri-Pump

Physical Appearance/ Comments: Clear

Samples Collected: (analyses / no. bottles) RXMW-01

VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)

Time: 11:40 Laboratory : Eurofins

Field Measurements:

Time	DTW ft	Flow Rate ml/min	ORP mV (+/- 10 mV)	Conductivity mS/m - S/m (w/in 3%)	Turbidity NTU (w/in %10)	pH SU (+/- 0.1)	Temperature C^o - F^o (w/in 3%)	Dissolved O_2 mg/L (w/in 10%)
11:40	21.14	200	213	1.99	12.6	6.99	18.42	5.19
11:45	21.14	200	214	1.99	12.8	6.98	18.66	5.05
11:50	21.14	200	215	1.99	12.1	6.98	18.69	5.01
11:55	21.14	200	220	2.00	11.0	6.97	18.80	4.95
12:00	21.14	200	224	2.00	10.9	6.96	19.24	4.84
12:05	21.14	200	226	2.00	10.2	6.96	19.24	4.85
12:10	21.14	200	227	2.00	10.1	6.95	19.5	4.74
12:15	21.14	200	228	2.01	10.4	6.94	19.72	4.74

ROUX

Well Sampling Data Form

Client: SB Gerard Avenue LLC **Project Number:** 3523.0001Y000

Site Location: 580 Gerard Ave, Bronx, NY

Well No: RXMW-02 Weather: Clear/Sunny 80 deg. F

Date: 7/16/2021 Purge Water Disposal: Drum

Sampled By: V. Ricigliano Well Diameter / Type: 2" PVC Flush Mount

Depth of Well (ft): 26.79 Water Column (ft): 5.59

Depth to Water(ft): 21.20 Volume of Water in Well (gal) 0.912

Depth to Product (ft): -

well diameter:	1 in	2 in	4 in	6 in	8 in
gallons per foot:	0.041	0.163	0.653	1.469	2.611

Start Purging: 7:30 Purge Rate: 200

End Purging: 8:00 Volume of Water Removed (gal): 2

Method of Purge: Low-Flow Method of Sampling: Peri-Pump

Physical Appearance/ Comments: Clear

Samples Collected: (analyses / no. bottles) RXMW-02, Duplicate Sample (PFAS only)

VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)

Time: 7:30 Laboratory : Eurofins

Field Measurements:

Time	DTW ft	Flow Rate ml/min	ORP mV (+/- 10 mV)	Conductivity mS/m - S/m (w/in 3%)	Turbidity NTU (w/in %10)	pH SU (+/- 0.1)	Temperature C^o - F^o (w/in 3%)	Dissolved O_2 mg/L (w/in 10%)
7:30	21.49	200	163	1.46	47.7	7.03	18.73	7.62
7:35	21.49	200	164	1.48	44.6	7.01	18.28	6.94
7:40	21.49	200	174	1.53	38.8	6.90	17.65	6.00
7:45	21.49	200	176	1.54	37.6	6.85	17.57	5.82
7:50	21.49	200	178	1.54	30.9	6.84	17.58	5.79
7:55	21.49	200	180	1.54	31.0	6.80	17.56	5.56
8:00	21.49	200	182	1.54	31.2	6.79	17.56	5.56

ROUX

Well Sampling Data Form

Client: SB Gerard Avenue LLC **Project Number:** 3523.0001Y000

Site Location: 580 Gerard Ave, Bronx, NY

Well No: RXMW-03 Weather: Clear/Sunny, 80 deg. F

Date: 7/15/2021 Purge Water Disposal: Drum

Sampled By: M. Sarni Well Diameter / Type: 2" PVC Flush Mount

Depth of Well (ft): 26.73 Water Column (ft): 5.51

Depth to Water(ft): 21.22 Volume of Water in Well (gal) 0.899

Depth to Product (ft): -

well diameter:	1 in	2 in	4 in	6 in	8 in
gallons per foot:	0.041	0.163	0.653	1.469	2.611

Start Purging: 12:20 Purge Rate: 100

End Purging: 12:55 Volume of Water Removed (gal): 2

Method of Purge: Low-Flow Method of Sampling: Peri-Pump

Physical Appearance/ Comments: Clear

Samples Collected: (analyses / no. bottles) RXMW-03, Duplicate Sample

VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)

Time: 12:55 Laboratory : Eurofins

Field Measurements:

Time	DTW ft	Flow Rate ml/min	ORP mV (+/- 10 mV)	Conductivity mS/m - S/m (w/in 3%)	Turbidity NTU (w/in %10)	pH SU (+/- 0.1)	Temperature C° - F° (w/in 3%)	Dissolved O_2 mg/L (w/in 10%)
12:20	21.22	100	142	1.71	904	7.48	17.20	11.46
12:23	21.22	100	149	1.71	661	7.48	17.23	7.40
12:26	21.22	100	152	1.71	577	7.48	17.22	6.83
12:29	21.22	100	154	1.71	533	7.47	17.21	6.65
12:32	21.22	100	155	1.71	469	7.47	17.14	6.41
12:35	21.22	100	157	1.71	430	7.46	17.12	6.35
12:40	21.22	100	158	1.71	373	7.45	17.15	6.29
12:45	21.22	100	158	1.71	328	7.44	17.19	6.12
12:50	21.22	100	159	1.72	304	7.43	17.24	6.00
12:55	21.50	100	159	1.72	297	7.43	17.26	5.98

ROUX

Well Sampling Data Form

Client: SB Gerard Avenue LLC **Project Number:** 3523.0001Y000

Site Location: 580 Gerard Ave, Bronx, NY

Well No: RXMW-04 Weather: 73-88 deg. F

Date: 7/15/2021 Purge Water Disposal: Drum

Sampled By: V. Ricigliano Well Diameter / Type: 2" PVC Flush Mount

Depth of Well (ft): 29.93 Water Column (ft): 7.67

Depth to Water(ft): 22.26 Volume of Water in Well (gal) 1.252

Depth to Product (ft): -

well diameter:	1 in	2 in	4 in	6 in	8 in
gallons per foot:	0.041	0.163	0.653	1.469	2.611

Start Purging: 13:45 Purge Rate: 200

End Purging: 14:30 Volume of Water Removed (gal): 1

Method of Purge: Low-Flow Method of Sampling: Peri-Pump

Physical Appearance/ Comments: Clear, slight odor

Samples Collected: (analyses / no. bottles) RXMW-04

VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)

Time: 13:45 Laboratory : Eurofins

Field Measurements:

Time	DTW ft	Flow Rate ml/min	ORP mV (+/- 10 mV)	Conductivity mS/m - S/m (w/in 3%)	Turbidity NTU (w/in %10)	pH SU (+/- 0.1)	Temperature C^o - F^o (w/in 3%)	Dissolved O_2 mg/L (w/in 10%)
13:45	22.21	200	-112	0.596	138.0	6.93	18.40	5.39
13:50	22.21	200	-112	0.596	135.0	6.93	18.40	5.29
13:55	22.21	200	-112	0.596	131.0	6.91	18.50	5.13
14:00	22.21	200	-111	0.599	124.0	6.90	18.77	4.74
14:05	22.21	200	-113	0.599	104.0	6.89	18.87	4.54
14:10	22.21	200	-112	0.599	102.0	6.83	18.85	4.45
14:15	22.21	200	-111	0.593	61.4	6.83	19.09	4.35
14:20	22.21	200	-111	0.593	48.3	6.83	19.09	4.35
14:25	22.21	200	-111	0.593	47.3	6.83	19.09	4.35
14:30	22.21	200	-110	0.592	48.1	6.82	19.09	4.35

ROUX

Well Sampling Data Form

Client: SB Gerard Avenue LLC **Project Number:** 3523.0001Y000

Site Location: 580 Gerard Ave, Bronx, NY

Well No: RXMW-05 Weather: 73-88 deg. F

Date: 7/15/2021 Purge Water Disposal: Drum

Sampled By: V. Ricigliano Well Diameter / Type: 2" PVC Flush Mount

Depth of Well (ft): 30.00 Water Column (ft): 6.70

Depth to Water(ft): 23.30 Volume of Water in Well (gal) 1.094

Depth to Product (ft): -

well diameter:	1 in	2 in	4 in	6 in	8 in
gallons per foot:	0.041	0.163	0.653	1.469	2.611

Start Purging: 11:20 Purge Rate: 200

End Purging: 11:45 Volume of Water Removed (gal): 1

Method of Purge: Low-Flow Method of Sampling: Peri-Pump

Physical Appearance/ Comments: Clear

Samples Collected: (analyses / no. bottles) RXMW-05

VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)

Time: 12:10 Laboratory : Eurofins

Field Measurements:

Time	DTW ft	Flow Rate ml/min	ORP mV (+/- 10 mV)	Conductivity mS/m - S/m (w/in 3%)	Turbidity NTU (w/in %10)	pH SU (+/- 0.1)	Temperature C^o - F^o (w/in 3%)	Dissolved O_2 mg/L (w/in 10%)
11:20	23.30	200	229	1.31	61.2	7.08	17.21	6.61
11:25	22.07	200	228	1.33	63.2	7.08	17.20	6.61
11:30	22.12	200	223	1.30	76.4	7.12	17.09	6.04
11:35	22.19	200	221	1.30	63.5	7.10	17.02	5.91
11:40	22.07	200	221	1.30	63.2	7.09	17.02	5.71
11:45	22.07	200	219	1.30	67.2	7.08	17.11	5.67

ROUX

Well Sampling Data Form

Client: SB Gerard Avenue LLC **Project Number:** 3523.0001Y000

Site Location: 580 Gerard Ave, Bronx, NY

Well No: RXMW-06 Weather: Clear/Sunny, 80 deg. F

Date: 7/15/2021 Purge Water Disposal: Drum

Sampled By: M. Sarni Well Diameter / Type: 2" PVC Flush Mount

Depth of Well (ft): 26.90 Water Column (ft): 5.32

Depth to Water(ft): 21.58 Volume of Water in Well (gal) 0.868

Depth to Product (ft): -

well diameter:	1 in	2 in	4 in	6 in	8 in
gallons per foot:	0.041	0.163	0.653	1.469	2.611

Start Purging: 8:05 Purge Rate: 100

End Purging: 11:15 Volume of Water Removed (gal): 2

Method of Purge: Low-Flow Method of Sampling: Peri-Pump

Physical Appearance/ Comments: Clear

Samples Collected: (analyses / no. bottles) RXMW-06

VOC, SVOC, Metals, PCB, Pest/Herb, Cyanide, Tri/Hex Chrom, EC (PFAS + 1,4-Dioxane)

Time: 11:05 Laboratory : Eurofins

Field Measurements:

Time	DTW ft	Flow Rate ml/min	ORP mV (+/- 10 mV)	Conductivity mS/m - S/m (w/in 3%)	Turbidity NTU (w/in %10)	pH SU (+/- 0.1)	Temperature C° - F° (w/in 3%)	Dissolved O_2 mg/L (w/in 10%)
10:30	22.21	100	178	0.779	24.9	7.33	17.02	8.07
10:33	22.21	100	90	0.657	28.1	7.44	17.30	7.99
10:36	22.21	100	83	0.656	26.4	7.45	17.36	7.91
10:39	22.21	100	72	0.658	25.0	7.43	17.43	7.71
10:42	22.21	100	71	0.653	22.1	7.44	17.44	7.40
10:45	22.21	100	68	0.646	20.5	7.45	17.41	6.87
10:50	22.21	100	65	0.643	20.1	7.45	17.39	6.83
10:55	22.21	100	60	0.640	20.7	7.45	17.34	6.82
11:00	22.21	100	58	0.639	21.0	7.45	17.32	6.79

ROUX

APPENDIX D

Soil Vapor Sampling Forms

Soil Vapor Sampling Form

Site Name: SB Gerard Avenue LLC

Location: 580 Gerard Avenue, Bronx, NY

Date: 7/16/2021 **Time:** 0654

Weather : Partly cloudy

Temperature: 93 F - 77 F Humidity: 43%

Wind Magnitude: 10 mph Wind Direction: SW

Barometric Pressure: 29.97" Hg Precipitation: 0"

Sampling Team: V. Ricigliano

Sampling Location: 580 Gerard Avenue, Bronx, NY

Site Condition (i.e. any adjacent questionable facilities, vent pipes, tanks, etc. and type of basement present)

Large, empty warehouse. Enclosed.

Prior to commencing the GeoProbe activity, ensure that all the rods were properly deconed and a new disposable tip is present at the end of the rods.

Calibrate the Helium detection meter

Utility Clearance Completed: Yes

Sampling Depth: 8 to 8.5 feet inches below land surface

Sealed at land surface : Yes

Purge Rate: 0.2L/min Must be less than 0.2 L/min

Purge Time: 1-2 min Assuming 0.17"tubing internal dia. purge 15sec./every 10ft of tubing

Helium Rate at enclosure:

Helium Rate from sample tubing: 0 ppm Is this rate <10% of the rate at the enclosure

If the Helium readings have a greater ratio than 10% the seals should be rechecked and the tracer gas should be reapplied.

Once the tracer gas screening procedures are completed and no short-circuiting is determined to be present at the location the soil vapor sample can be collected in a lab certified clean summa canister at a rate less than 0.2 L/min.

Finishing pressure should be within 0.5 - 4 in. of Hg

Is the Summa Canister Certified Clean and within the proper holding time ? Yes

Starting Pressure: -30.0 in. of Hg

Starting Time: 656

Ending Time: 1504

Ending Pressure: -6 in. of Hg

Summa Canister Identification #: 4088

Flow Regulator ID # 4993

Sample ID # RXSV-01 **Time** 8-hour

Analysis TO-15

Laboratory Eurofins

Comments

Soil Vapor Sampling Form

Site Name: SB Gerard Avenue LLC

Location: 580 Gerard Avenue, Bronx, NY

Date: 7/15/2021 **Time:** 0600

Weather : Partly cloudy

Temperature: 88 F - 78 F Humidity: 51%

Wind Magnitude: 16 mph Wind Direction: SSW

Barometric Pressure: 30.01" Hg Precipitation: 0"

Sampling Team: J. Lam

Sampling Location: 580 Gerard Avenue, Bronx, NY

Site Condition (i.e. any adjacent questionable facilities, vent pipes, tanks, etc. and type of basement present)

Large, empty warehouse. Enclosed.

Prior to commencing the GeoProbe activity, ensure that all the rods were properly deconed and a new disposable tip is present at the end of the rods.

Calibrate the Helium detection meter

Utility Clearance Completed: Yes

Sampling Depth: 2.5 to 13 fee inches below land surface

Sealed at land surface : Yes

Purge Rate: 0.2L/min Must be less than 0.2 L/min

Purge Time: 1-2 min Assuming 0.17"tubing internal dia. purge 15sec./every 10ft of tubing

Helium Rate at enclosure:

Helium Rate from sample tubing: 0 ppm Is this rate <10% of the rate at the enclosure

If the Helium readings have a greater ratio than 10% the seals should be rechecked and the tracer gas should be reapplied.

Once the tracer gas screening procedures are completed and no short-circuiting is determined to be present at the location the soil vapor sample can be collected in a lab certified clean summa canister at a rate less than 0.2 L/min.

Finishing pressure should be within 0.5 - 4 in. of Hg

Is the Summa Canister Certified Clean and within the proper holding time ? Yes

Starting Pressure: -29.0 in. of Hg

Starting Time: 749

Ending Time: 1545

Ending Pressure: -5 in. of Hg

Summa Canister Identification #: 6232

Flow Regulator ID # 2788

Sample ID # RXSV-02 **Time** 8-hour

Analysis TO-15

Laboratory Eurofins

Comments

Soil Vapor Sampling Form

Site Name: SB Gerard Avenue LLC

Location: 580 Gerard Avenue, Bronx, NY

Date: 7/15/2021 **Time:** 0600

Weather : Partly cloudy

Temperature: 88 F - 78 F Humidity: 51%

Wind Magnitude: 16 mph Wind Direction: SSW

Barometric Pressure: 30.01" Hg Precipitation: 0"

Sampling Team: J. Lam

Sampling Location: 580 Gerard Avenue, Bronx, NY

Site Condition (i.e. any adjacent questionable facilities, vent pipes, tanks, etc. and type of basement present)

Large, empty warehouse. Enclosed.

Prior to commencing the GeoProbe activity, ensure that all the rods were properly deconed and a new disposable tip is present at the end of the rods.

Calibrate the Helium detection meter

Utility Clearance Completed: Yes

Sampling Depth: 5.5 to 16 fee inches below land surface

Sealed at land surface : Yes

Purge Rate: 0.2L/min Must be less than 0.2 L/min

Purge Time: 1-2 min Assuming 0.17"tubing internal dia. purge 15sec./every 10ft of tubing

Helium Rate at enclosure:

Helium Rate from sample tubing: 0 ppm Is this rate <10% of the rate at the enclosure

If the Helium readings have a greater ratio than 10% the seals should be rechecked and the tracer gas should be reapplied.

Once the tracer gas screening procedures are completed and no short-circuiting is determined to be present at the location the soil vapor sample can be collected in a lab certified clean summa canister at a rate less than 0.2 L/min.

Finishing pressure should be within 0.5 - 4 in. of Hg

Is the Summa Canister Certified Clean and within the proper holding time ? Yes

Starting Pressure: -30.0 in. of Hg

Starting Time: 750

Ending Time: 1620

Ending Pressure: -4 in. of Hg

Summa Canister Identification #: 4449

Flow Regulator ID # 2667

Sample ID # RXSV-03 **Time** 8-hour

Analysis TO-15

Laboratory Eurofins

Comments

Soil Vapor Sampling Form

Site Name: SB Gerard Avenue LLC

Location: 580 Gerard Avenue, Bronx, NY

Date: 7/15/2021 **Time:** 0600

Weather : Partly cloudy

Temperature: 88 F - 78 F Humidity: 51%

Wind Magnitude: 16 mph Wind Direction: SSW

Barometric Pressure: 30.01" Hg Precipitation: 0"

Sampling Team: J. Lam

Sampling Location: 580 Gerard Avenue, Bronx, NY

Site Condition (i.e. any adjacent questionable facilities, vent pipes, tanks, etc. and type of basement present)

Large, empty warehouse. Enclosed.

Prior to commencing the GeoProbe activity, ensure that all the rods were properly deconed and a new disposable tip is present at the end of the rods.

Calibrate the Helium detection meter

Utility Clearance Completed: Yes

Sampling Depth: 5.5 to 16 fee inches below land surface

Sealed at land surface : Yes

Purge Rate: 0.2L/min Must be less than 0.2 L/min

Purge Time: 1-2 min Assuming 0.17"tubing internal dia. purge 15sec./every 10ft of tubing

Helium Rate at enclosure:

Helium Rate from sample tubing: 0 ppm Is this rate <10% of the rate at the enclosure

If the Helium readings have a greater ratio than 10% the seals should be rechecked and the tracer gas should be reapplied.

Once the tracer gas screening procedures are completed and no short-circuiting is determined to be present at the location the soil vapor sample can be collected in a lab certified clean summa canister at a rate less than 0.2 L/min.

Finishing pressure should be within 0.5 - 4 in. of Hg

Is the Summa Canister Certified Clean and within the proper holding time ? Yes

Starting Pressure: -29.0 in. of Hg

Starting Time: 751

Ending Time: 1610

Ending Pressure: -3 in. of Hg

Summa Canister Identification #: 4572

Flow Regulator ID # 4188

Sample ID # RXSV-04 **Time** 8-hour

Analysis TO-15

Laboratory Eurofins

Comments

Soil Vapor Sampling Form

Site Name: SB Gerard Avenue LLC

Location: 580 Gerard Avenue, Bronx, NY

Date: 7/16/2021 **Time:** 0652

Weather : Partly cloudy

Temperature: 93 F - 77 F Humidity: 43%

Wind Magnitude: 10 mph Wind Direction: SW

Barometric Pressure: 29.97" Hg Precipitation: 0"

Sampling Team: V. Ricigliano

Sampling Location: 580 Gerard Avenue, Bronx, NY

Site Condition (i.e. any adjacent questionable facilities, vent pipes, tanks, etc. and type of basement present)

Large, empty warehouse. Enclosed.

Prior to commencing the GeoProbe activity, ensure that all the rods were properly deconed and a new disposable tip is present at the end of the rods.

Calibrate the Helium detection meter

Utility Clearance Completed: Yes

Sampling Depth: 5 to 5.5 feet inches below land surface

Sealed at land surface : Yes

Purge Rate: 0.2L/min Must be less than 0.2 L/min

Purge Time: 1-2 min Assuming 0.17"tubing internal dia. purge 15sec./every 10ft of tubing

Helium Rate at enclosure:

Helium Rate from sample tubing: 0 ppm Is this rate <10% of the rate at the enclosure

If the Helium readings have a greater ratio than 10% the seals should be rechecked and the tracer gas should be reapplied.

Once the tracer gas screening procedures are completed and no short-circuiting is determined to be present at the location the soil vapor sample can be collected in a lab certified clean summa canister at a rate less than 0.2 L/min.

Finishing pressure should be within 0.5 - 4 in. of Hg

Is the Summa Canister Certified Clean and within the proper holding time ? Yes

Starting Pressure: -30.0 in. of Hg

Starting Time: 652

Ending Time: 1451

Ending Pressure: -4 in. of Hg

Summa Canister Identification #: 4335

Flow Regulator ID # 2995

Sample ID # RXSV-05 **Time** 8-hour

Analysis TO-15

Laboratory Eurofins

Comments

Soil Vapor Sampling Form

Site Name: SB Gerard Avenue LLC

Location: 580 Gerard Avenue, Bronx, NY

Date: 7/16/2021 **Time:** 0654

Weather : Partly cloudy

Temperature: 93 F - 77 F Humidity: 43%

Wind Magnitude: 10 mph Wind Direction: SW

Barometric Pressure: 29.97" Hg Precipitation: 0"

Sampling Team: V. Ricigliano

Sampling Location: 580 Gerard Avenue, Bronx, NY

Site Condition (i.e. any adjacent questionable facilities, vent pipes, tanks, etc. and type of basement present)

Large, empty warehouse. Enclosed.

Prior to commencing the GeoProbe activity, ensure that all the rods were properly deconed and a new disposable tip is present at the end of the rods.

Calibrate the Helium detection meter

Utility Clearance Completed: Yes

Sampling Depth: 5.5 to 16 fee inches below land surface

Sealed at land surface : Yes

Purge Rate: 0.2L/min Must be less than 0.2 L/min

Purge Time: 1-2 min Assuming 0.17"tubing internal dia. purge 15sec./every 10ft of tubing

Helium Rate at enclosure:

Helium Rate from sample tubing: 0 ppm Is this rate <10% of the rate at the enclosure

If the Helium readings have a greater ratio than 10% the seals should be rechecked and the tracer gas should be reapplied.

Once the tracer gas screening procedures are completed and no short-circuiting is determined to be present at the location the soil vapor sample can be collected in a lab certified clean summa canister at a rate less than 0.2 L/min.

Finishing pressure should be within 0.5 - 4 in. of Hg

Is the Summa Canister Certified Clean and within the proper holding time ? Yes

Starting Pressure: -28.0 in. of Hg

Starting Time: 645

Ending Time: 1452

Ending Pressure: -4 in. of Hg

Summa Canister Identification #: 5387

Flow Regulator ID # 5226

Sample ID # RXSV-06 **Time** 8-hour

Analysis T0-15

Laboratory Eurofins

Comments

Soil Vapor Sampling Form

Site Name: SB Gerard Avenue LLC

Location: 580 Gerard Avenue, Bronx, NY

Date: 12/21/2021 **Time:** 0730

Weather : Partly cloudy

Temperature: 35 F - 45 F Humidity: 58%

Wind Magnitude: 5 mph Wind Direction: W

Barometric Pressure: 30.15" Hg Precipitation: 10"

Sampling Team: R. Fenwick

Sampling Location: 580 Gerard Avenue, Bronx, NY

Site Condition (i.e. any adjacent questionable facilities, vent pipes, tanks, etc. and type of basement present)

Large, empty warehouse. Enclosed.

Prior to commencing the GeoProbe activity, ensure that all the rods were properly deconed and a new disposable tip is present at the end of the rods.

Calibrate the Helium detection meter

Utility Clearance Completed: Yes

Sampling Depth: nderneath Sl inches below land surface

Sealed at land surface : Yes

Purge Rate: 0.2L/min Must be less than 0.2 L/min

Purge Time: 1-2 min Assuming 0.17"tubing internal dia. purge 15sec./every 10ft of tubing

Helium Rate at enclosure:

Helium Rate from sample tubing: 0 ppm Is this rate <10% of the rate at the enclosure

If the Helium readings have a greater ratio than 10% the seals should be rechecked and the tracer gas should be reapplied.

Once the tracer gas screening procedures are completed and no short-circuiting is determined to be present at the location the soil vapor sample can be collected in a lab certified clean summa canister at a rate less than 0.2 L/min.

Finishing pressure should be within 0.5 - 4 in. of Hg

Is the Summa Canister Certified Clean and within the proper holding time ? Yes

Starting Pressure: -30.0 in. of Hg

Starting Time: 0803

Ending Time: 1600

Ending Pressure: -6 in. of Hg

Summa Canister Identification #: 24117

Flow Regulator ID # 7077

Sample ID # RXSV-07 **Time** 8-hour

Analysis TO-15

Laboratory York Analytical

Comments

Soil Vapor Sampling Form

Site Name: SB Gerard Avenue LLC

Location: 580 Gerard Avenue, Bronx, NY

Date: 7/15/2021 **Time:** 0600

Weather : Partly cloudy

Temperature: 88 F - 78 F Humidity: 51%

Wind Magnitude: 16 mph Wind Direction: SSW

Barometric Pressure: 30.01" Hg Precipitation: 0"

Sampling Team: J. Lam

Sampling Location: 580 Gerard Avenue, Bronx, NY

Site Condition (i.e. any adjacent questionable facilities, vent pipes, tanks, etc. and type of basement present)

Large, empty warehouse. Enclosed.

Prior to commencing the GeoProbe activity, ensure that all the rods were properly deconed and a new disposable tip is present at the end of the rods.

Calibrate the Helium detection meter

Utility Clearance Completed: Yes

Sampling Depth: nderneath Sl inches below land surface

Sealed at land surface : Yes

Purge Rate: 0.2L/min Must be less than 0.2 L/min

Purge Time: 1-2 min Assuming 0.17"tubing internal dia. purge 15sec./every 10ft of tubing

Helium Rate at enclosure:

Helium Rate from sample tubing: 0 ppm Is this rate <10% of the rate at the enclosure

If the Helium readings have a greater ratio than 10% the seals should be rechecked and the tracer gas should be reapplied.

Once the tracer gas screening procedures are completed and no short-circuiting is determined to be present at the location the soil vapor sample can be collected in a lab certified clean summa canister at a rate less than 0.2 L/min.

Finishing pressure should be within 0.5 - 4 in. of Hg

Is the Summa Canister Certified Clean and within the proper holding time ? Yes

Starting Pressure: -30.0 in. of Hg

Starting Time: 812

Ending Time: 1620

Ending Pressure: -7 in. of Hg

Summa Canister Identification #: 2975

Flow Regulator ID # 3735

Sample ID # RXSS-01 **Time** 8-hour

Analysis TO-15

Laboratory Eurofins

Comments

Soil Vapor Sampling Form

Site Name: SB Gerard Avenue LLC

Location: 580 Gerard Avenue, Bronx, NY

Date: 7/15/2021 **Time:** 0600

Weather : Partly cloudy

Temperature: 88 F - 78 F Humidity: 51%

Wind Magnitude: 16 mph Wind Direction: SSW

Barometric Pressure: 30.01" Hg Precipitation: 0"

Sampling Team: J. Lam

Sampling Location: 580 Gerard Avenue, Bronx, NY

Site Condition (i.e. any adjacent questionable facilities, vent pipes, tanks, etc. and type of basement present)

Large, empty warehouse. Enclosed.

Prior to commencing the GeoProbe activity, ensure that all the rods were properly deconed and a new disposable tip is present at the end of the rods.

Calibrate the Helium detection meter

Utility Clearance Completed: Yes

Sampling Depth: nderneath Sl inches below land surface

Sealed at land surface : Yes

Purge Rate: 0.2L/min Must be less than 0.2 L/min

Purge Time: 1-2 min Assuming 0.17"tubing internal dia. purge 15sec./every 10ft of tubing

Helium Rate at enclosure:

Helium Rate from sample tubing: 0 ppm Is this rate <10% of the rate at the enclosure

If the Helium readings have a greater ratio than 10% the seals should be rechecked and the tracer gas should be reapplied.

Once the tracer gas screening procedures are completed and no short-circuiting is determined to be present at the location the soil vapor sample can be collected in a lab certified clean summa canister at a rate less than 0.2 L/min.

Finishing pressure should be within 0.5 - 4 in. of Hg

Is the Summa Canister Certified Clean and within the proper holding time ? Yes

Starting Pressure: -30.0 in. of Hg

Starting Time: 804

Ending Time: 1330

Ending Pressure: -5 in. of Hg

Summa Canister Identification #: 3207

Flow Regulator ID # 3935

Sample ID # RXSS-02 **Time** 8-hour

Analysis TO-15

Laboratory Eurofins

Comments

Soil Vapor Sampling Form

Site Name: SB Gerard Avenue LLC

Location: 580 Gerard Avenue, Bronx, NY

Date: 7/15/2021 **Time:** 0600

Weather : Partly cloudy

Temperature: 88 F - 78 F Humidity: 51%

Wind Magnitude: 16 mph Wind Direction: SSW

Barometric Pressure: 30.01" Hg Precipitation: 0"

Sampling Team: J. Lam

Sampling Location: 580 Gerard Avenue, Bronx, NY

Site Condition (i.e. any adjacent questionable facilities, vent pipes, tanks, etc. and type of basement present)

Large, empty warehouse. Enclosed.

Prior to commencing the GeoProbe activity, ensure that all the rods were properly deconed and a new disposable tip is present at the end of the rods.

Calibrate the Helium detection meter

Utility Clearance Completed: Yes

Sampling Depth: nderneath Sl inches below land surface

Sealed at land surface : Yes

Purge Rate: 0.2L/min Must be less than 0.2 L/min

Purge Time: 1-2 min Assuming 0.17"tubing internal dia. purge 15sec./every 10ft of tubing

Helium Rate at enclosure:

Helium Rate from sample tubing: 0 ppm Is this rate <10% of the rate at the enclosure

If the Helium readings have a greater ratio than 10% the seals should be rechecked and the tracer gas should be reapplied.

Once the tracer gas screening procedures are completed and no short-circuiting is determined to be present at the location the soil vapor sample can be collected in a lab certified clean summa canister at a rate less than 0.2 L/min.

Finishing pressure should be within 0.5 - 4 in. of Hg

Is the Summa Canister Certified Clean and within the proper holding time ? Yes

Starting Pressure: -30.0 in. of Hg

Starting Time: 807

Ending Time: 1630

Ending Pressure: -6 in. of Hg

Summa Canister Identification #: 5141

Flow Regulator ID # 7493

Sample ID # RXSS-03 **Time** 8-hour

Analysis TO-15

Laboratory Eurofins

Comments

Soil Vapor Sampling Form

Site Name: SB Gerard Avenue LLC

Location: 580 Gerard Avenue, Bronx, NY

Date: 12/21/2021 **Time:** 0730

Weather : Partly cloudy

Temperature: 35 F - 45 F Humidity: 58%

Wind Magnitude: 5 mph Wind Direction: W

Barometric Pressure: 30.15" Hg Precipitation: 10"

Sampling Team: R. Fenwick

Sampling Location: 580 Gerard Avenue, Bronx, NY

Site Condition (i.e. any adjacent questionable facilities, vent pipes, tanks, etc. and type of basement present)

Large, empty warehouse. Enclosed.

Prior to commencing the GeoProbe activity, ensure that all the rods were properly deconed and a new disposable tip is present at the end of the rods.

Calibrate the Helium detection meter

Utility Clearance Completed: Yes

Sampling Depth: nderneath Sl inches below land surface

Sealed at land surface : Yes

Purge Rate: 0.2L/min Must be less than 0.2 L/min

Purge Time: 1-2 min Assuming 0.17"tubing internal dia. purge 15sec./every 10ft of tubing

Helium Rate at enclosure:

Helium Rate from sample tubing: 0 ppm Is this rate <10% of the rate at the enclosure

If the Helium readings have a greater ratio than 10% the seals should be rechecked and the tracer gas should be reapplied.

Once the tracer gas screening procedures are completed and no short-circuiting is determined to be present at the location the soil vapor sample can be collected in a lab certified clean summa canister at a rate less than 0.2 L/min.

Finishing pressure should be within 0.5 - 4 in. of Hg

Is the Summa Canister Certified Clean and within the proper holding time ? Yes

Starting Pressure: -30.0 in. of Hg

Starting Time: 747

Ending Time: 1600

Ending Pressure: -5 in. of Hg

Summa Canister Identification #: 41846

Flow Regulator ID # 7080

Sample ID # RXSS-04 **Time** 8-hour

Analysis TO-15

Laboratory York Analytical

Comments

APPENDIX E

Analytical Data from the Remedial Investigation

APPENDIX F

Data Usability Summary Report for
Remedial Investigation Data

MEMORANDUM

Date: September 9, 2021

To: Jessica Lam, Roux Environmental Engineering and Geology, D.P.C.

From: Josh Cope, Roux Associates, Inc.

Subject: **Data Usability Summary Report (DUSR)**
Validation of Laboratory Analytical Data for 580 Gerard Avenue, Bronx, New York
Eurofins TestAmerica SDG Nos.: 200-59106-1; 200-59109-1; 200-59146-1; 200-59320-1; 200-59336-1; 200-59356-1; 460-237649-1; 460-237723-1; 460-237728-1; 460-237799-1; 460-237916-1; 460-237975-1; 460-238084-1; 460-238141-1; 460-239161-1; 460-238265-1; 460-238332-1; 460-238339-1; 460-238361-1; 460-238498-1; 460-238855-1; 460-238909-1; 460-238980-1; 460-238996-1;

Review has been completed for the data packages generated by Eurofins TestAmerica of Burlington, Vermont and Eurofins TestAmerica of Edison, New Jersey. The data packages pertain to samples collected during June 2021 through July 2021 at 580 Gerard Avenue, Bronx, New York. Groundwater samples were analyzed for volatiles, semivolatiles, pesticides, PCBs, herbicides, metals, cyanide, hexavalent chromium and perfluorinated hydrocarbons (PFC). Soil samples were analyzed for volatiles, semivolatiles, pesticides, PCBs, herbicides, metals, cyanide, hexavalent chromium and PFCs. Soil vapor samples were analyzed for volatiles.

The data packages submitted by the laboratory contain full deliverables for validation. This usability report is generated from review of the QC summary form information, full review of sample raw data, and limited review of associated QC raw data. The reported QC summary forms and sample raw data have been reviewed for application of validation qualifiers, in accordance with the project QAPP, with guidance from USEPA national and regional validation guidance, and in consideration of the specific analytical method requirements. The following items were reviewed:

- Data completeness;
- Case narrative;
- Custody documentation;
- Holding times;
- Surrogate and internal standard recoveries;
- Trip, method, and field blanks;
- Matrix spikes and duplicates;
- Field duplicates;
- Laboratory control samples;
- Instrument tunes checks;
- Initial calibrations;
- Calibration checks;
- Isotope dilutions;
- Method compliance; and
- Analytical result verification.

The data review includes evaluation of the items noted in the NYS DER-10 Appendix 2B Section 2.0(c). Deficiencies noted during data review are discussed within the following text. The laboratory QC forms discussed herein can be found within the laboratory data packages.

402 Heron Drive ■ Logan Township, New Jersey 08085 ■ +1.856.423.8800 ■ www.rouxinc.com
California ■ Illinois ■ Massachusetts ■ New Jersey ■ New York ■ Texas

The sample analyses were performed in general accordance with analytical protocols, and sample results are usable as reported or with minor qualifications as discussed herein.

Some samples were diluted due to extract or matrix effects. This resulted in elevated reporting limits for those samples. Sample results which exceed the calibration range are qualified with an "E" flag, for any analytes that exceed the calibration range.

Data completeness, accuracy, precision, representativeness, and comparability are acceptable. The validator qualifications recommended in this report are provided on the EDDs.

Perfluorinated Hydrocarbons by EPA E537-LL

The following method blank had a detection of at a level that was above the detection limit but below the reporting limit: perfluorobutyric acid (PFBA) for SDGs 200-59106-1 and 200-59109-1; PFBA and perfluorobutanesulfonic acid (PFBS) for SDGs 200-59146-1 and 460-237728-1. The associated detections below the reporting limit have been qualified as non-detect.

Volatiles by EPA TO-15

The associated QC data were acceptable.

Volatile Organic Compounds by EPA 8260

One or more surrogate recoveries are above criteria for the following sample: 460-238265-10. The results for this sample are qualified biased high.

The laboratory control sample (LCS) and LCS duplicate (LCS/LCSD) had acceptable recoveries and/or RPDs with the following exceptions outside control limits:

- Low recoveries for toluene, 1,1,2-trichloroethane, and 1,2-dibromoethane in SDG 460-238332-1. The associated sample results for these analytes are qualified biased low.
- Low recovery of tetrachloroethene in SDG 460-238361-1. The associated sample results for this analyte are qualified biased low.

The MS/MSD and laboratory duplicates had acceptable recoveries and/or RPDs with the following exceptions outside control limits:

- Several analytes in samples 460-238141-1 and 460-238332-5;

The detections of these analytes in the parent samples are qualified as estimated.

Semivolatile Organic Compounds by EPA 8270

The continuing calibration verification is outside criteria for the following analytes: benzo(a)pyrene in SDGs 460-237649-1 and 460-238141-1. The associated sample detections are estimated.

The LCS/LCSD had acceptable recoveries and/or RPDs with the following exceptions outside control limits:

- Low recovery for diethyl phthalate in SDG 460-237975-1. The associated sample results for the analyte are qualified biased low.

The MS/MSD had acceptable recoveries and/or RPDs with the following exceptions outside control limits:

- Indeno(1,2,3-c,d)pyrene and 4-chloroaniline in sample 460-238141-1; and
- Several analytes in sample 460-238332-5.

The detections of these analytes in the parent samples are qualified as estimated.

The field duplicate pair RPDs met criteria with the following exceptions:

- Benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-c,d)pyrene in duplicate pair 460-237649-2/-3.

The associated analytes in the duplicate pair have been qualified as estimated.

Pesticides by EPA 8081

The dual column percent difference is outside acceptance criteria for 4,4'-DDT in sample 460-237649-4; therefore, the lower of the two results is reported and the associated sample result is qualified as estimated.

PCBs by EPA 8082

The MS/MSD had acceptable recoveries and/or RPDs with the following exception outside control limits: Aroclor 1260 in sample 460-237723-6. Detections of this analyte in the parent sample are qualified as estimated.

Herbicides by EPA 8151

The MS/MSD and laboratory duplicates had acceptable recoveries and/or RPDs with the following exceptions outside control limits:

- Silvex, 2,4,5-T, and 2,4-D in sample 460-237799-4;

The detections of these analytes in the parent samples are qualified as estimated.

Metals by EPA 6020/7470/7471

The MS/MSD and laboratory duplicates had acceptable recoveries and/or RPDs with the following exceptions outside control limits:

- Antimony, calcium, magnesium, potassium, and thallium in sample 460-237649-7;
- Antimony, arsenic, chromium, cobalt, copper, nickel, vanadium, and mercury in sample 460-237723-6;
- Antimony, calcium, and copper in sample 460-237799-3;
- Antimony, cadmium, iron, lead, and zinc in sample 460-237916-3;
- Antimony and zinc in sample 460-238141-1;
- Several analytes in sample 460-238332-5; and
- Antimony, barium, and calcium in sample 460-238361-3.

The detections of these analytes in the parent samples are qualified as estimated.

Sodium is detected in method blank for SDG 460-238332-1 at less than half the reporting limit. The associated sample detections less than the reporting limit are qualified as "B" to indicate detection of sodium in the associated blank. Associated sample results above the reporting limit are not qualified.

The field duplicate pair RPDs met criteria with the following exceptions:

- Barium in duplicate pair 460-237649-2/-3;
- Barium, potassium, magnesium, and vanadium in duplicate pair 460-237975-1/-2; and
- Total manganese in duplicate pair 460-238855-3/-4.

The associated analytes in the duplicate pairs have been qualified as estimated.

Cyanide by EPA 9012

The associated QC data were acceptable.

Hexavalent Chromium by EPA 7196A

The associated QC data were acceptable.

Data Validation Services

120 Cobble Creek Road P. O. Box 208
North Creek, NY 12853
Phone (518) 251-4429
harry@frontiernet.net

January 21, 2022

Jessica Lam
Roux Associates Environmental Engineering and Geology, D. P. C. Inc.
209 Shafter St
Islandia, NY 11749

RE: Validation of the SB Gerard Avenue LLC Analytical Laboratory Data
Data Usability Summary Report (DUSR)
York SDG 21L1332

Dear Ms. Lam:

Review has been completed for the data package generated by York Analytical Laboratories, Inc. that pertains to soil vapor samples collected 12/21/21 at the SB Gerard Avenue LLC site. Two 6 L summa canisters were processed for volatile analytes by USEPA method TO-15.

The data packages submitted by the laboratory contain full deliverables for validation, and this usability report is generated from review of the QC summary form information, with full review of sample raw data and limited review of associated QC raw data. The reported QC summary forms and sample raw data have been reviewed for application of validation qualifiers, with guidance from the USEPA national and regional validation documents and the specific requirements of the analytical methodology. The following items were reviewed:

* Data Completeness
* Case Narrative
* Custody Documentation
* Holding Times
* Internal Standard Recoveries
* Preparation Blanks
* Laboratory Control Sample (LCS)
* Instrumental Tunes
* Initial and Continuing Calibration Standards
* Method Compliance
* Sample Result Verification

Those items listed above which show deficiencies are discussed within the text of this narrative. All of the other items were determined to be acceptable for the DUSR level review, as discussed in NYS DER-10 Appendix B Section 2.0 (c). Documentation of the outlying parameters cited in this report can be found in the laboratory data package.

In summary, sample results are usable either as reported or with minor qualification.

Data completeness, sensitivity, precision, accuracy, representativeness, reproducibility, and comparability are acceptable.

The client sample identification summary is attached to this text. Also included in this submission is the client EDD, edited in red to reflect the qualifications recommended in this report.

Chain-of-Custody

The interim relinquish entries were not made by the individual previously receiving custody.

Volatile Analyses by USEPA TO-15

The reported detection of 1,3-butadiene in RXSV-04 has been edited to reflect non-detection due to poor mass spectral quality/signal to noise ratio and the subsequent uncertain identification.

Internal standard recoveries are compliant with analytical requirements. Holding times were met, and blanks show no contamination.

Calibration standard responses are within validation guidelines, with the exception of that for isopropanol (44%D). The result for that analyte in the samples is therefore qualified as estimated, with a low bias.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,

Judy Harry

Judy Harry

Attachments: Validation Data Qualifier Definitions
Sample Identification Summary
Qualified Laboratory EQuIS EDD

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
J-	The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased low.
J+	The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased high.
UJ	The analyte was analyzed for, but was not detected. The associated reported quantitation limit is approximate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control limits. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

Sample Summaries

Report Date: 01/17/2022
Client Project ID: 3523.0001Y000 - SB Gerard Avenue LLC
York Project (SDG) No.: 21L1332

Roux Associates
209 Shafter Street
Islandia NY, 11749
Attention: Jessica Lam

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on December 22, 2021 and listed below. The project was identified as your project: **3523.0001Y000 - SB Gerard Avenue LLC**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
21L1332-01	RXSS-04	Soil Vapor	12/21/2021	12/22/2021
21L1332-02	RXSV-07	Soil Vapor	12/21/2021	12/22/2021

APPENDIX G

Site-Specific Quality Assurance Project Plan

Site-Specific Quality Assurance Project Plan / Field Sampling Plan

580 Gerard Former Post Office Vehicle Repair Shop Site
580-610 Gerard Avenue
Bronx, New York
NYSDEC BCP Site No. C203142

October 8, 2021

Prepared for:

SB Gerard Avenue LLC
570 Lexington Avenue, 43rd Floor
New York, New York 10022

Prepared by:

Roux Environmental Engineering and Geology, D.P.C.
209 Shafter Street
Islandia, New York 11749

3523.0001Y108/QAPP-CV

Table of Contents

Tables

Appendix

1. Introduction

Roux Environmental Engineering and Geology, D.P.C. (Roux), on behalf of SB Gerard Avenue LLC (referred to herein as the Volunteer), has prepared this Quality Assurance Project Plan/Field Sampling Plan (QAPP/FSP) to describe the measures that will be taken to ensure the data generated during performance of the Remedial Action Work Plan (RAWP) for the 580 Gerard Former Post Office Vehicle Repair Site located at 580-610 Gerard Avenue, Bronx, New York (Site) are of quality sufficient to meet project-specific data quality objectives (DQOs). This QAPP/FSP also includes field sampling procedures.

The Site is enrolled in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP). Site Number C203142 is assigned to the Site. RAWP activities will be conducted under the NYSDEC BCP. This QAPP/FSP was prepared in accordance with the guidance provided in NYSDEC Technical Guidance DER-10 Technical Guidance for Site Investigation and Remediation (DER-10), the NYSDEC BCP Guide, and the United States Environmental Protection Agency's (USEPA's) Guidance for the Data Quality Objectives Process (EPA QA/G 4).

1.1 Purpose

The QAPP/FSP describes in detail the field sampling and quality assurance/quality control (QA/QC) methods to be used during endpoint soil, backfill material and groundwater sampling tasks that may be required during implementation of the RAWP.

This QAPP/FSP was prepared in accordance with the NYSDEC's DER-10 and provides guidelines and procedures to be followed by field personnel during performance of sampling during the remediation and site management phase. Information contained in this QAPP/FSP relates to:

- Sampling objectives (Section 2);
- Project organization (Section 3);
- Sample media, sampling locations, analytical suites, sampling frequencies, and laboratory analysis (Section 4);
- Field sampling procedures (Section 5);
- Sample handling, sample analysis, and quality assurance/quality control (Section 6); and
- Site control procedures and decontamination (Section 7).

2. Sampling Objectives

The sampling program is designed to meet the data quality objectives (DQOs) set forth in DER-10. Specifically, the potential sampling objectives for this Site are:

- Analyze endpoint documentation and confirmation samples.
- Analyze soil designated for off-site disposal for parameters required by the selected disposal facility.
- Analyze off site backfill to evaluate its suitability for use as backfill that meets the lower of the Restricted Residential Use Soil Cleanup Objectives (SCOs) or the Protection of Groundwater SCO, presented in Table 6.8 (b) of the latest version of Title 6 of New York Code of Rules and Regulations (NYCRR) Part 375 (Part 375).
- Analyze groundwater samples (if required).

Sampling procedures are discussed in Section 5 of this QAPP/FSP. A discussion of the DQOs and quality assurance/quality control is provided in Section 6.

3. Project Organization

A general summary of the overall management structure and responsibilities of project team members are presented below.

Project Principal

Mr. Robert Kovacs, P.G., LSRP, of Roux will serve as Project Principal. The Project Principal is a New York State licensed professional geologist. The Project Principal is responsible for defining project objectives and bears ultimate responsibility for the successful completion of the investigation.

Remedial Engineer

The Remedial Engineer for this project will be Mr. Brian Morrissey, P.E. The Remedial Engineer is a registered professional engineer licensed by the State of New York. The Remedial Engineer will have primary direct responsibility for implementation of the RAWP and future remedial program for the Site. The Remedial Engineer will certify in the Final Engineering Report that the remedial activities were observed by qualified environmental professionals under supervision as well as any other relevant provisions of ECL 27-1419 have been achieved in full conformance with the RAWP.

Project Manager

Jessica Lam. of Roux will serve as Project Manager. The Project Manager is responsible for defining project objectives and bears ultimate responsibility for the successful completion of the work. This individual will provide overall management for the implementation of the scope of work and will coordinate all field activities. The Project Manager is also responsible for data review/interpretation and report preparation.

Field Team Leader

The Field Team Leader will be determined prior to the start of the remedial work. The Field Team Leader bears the responsibility for the successful execution of the field program. The Field Team Leader will direct the activities of the technical staff in the field, as well as all subcontractors. The Field Team Leader will also assist in the interpretation of data and in report preparation. The Field Team Leader reports to the Project Manager.

Laboratory Project Manager

The Laboratory Project Manager will be determined prior to the start of the work. The Laboratory Project Manager is responsible for sample container preparation, sample custody in the laboratory, and completion of the required analysis through oversight of the laboratory staff. The Laboratory Project Manager will ensure that quality assurance procedures are followed, and an acceptable laboratory report is prepared and submitted. The Laboratory Project Manager reports to the Project Principal and Project Manager.

Quality Assurance Officer

Rachel Henke of Roux will serve as the Quality Assurance Officer (QAO) for this project. The QAO is responsible for conducting reviews, inspections, and audits to ensure that the data collection is conducted in accordance with the FSP and QAPP. The QAO's responsibilities range from ensuring effective field equipment decontamination procedures and proper sample collection to the review of all laboratory analytical data for completeness and usefulness. The QAO reports to the Project Manager and makes independent recommendations to the Field Team Leader.

4. Sample Media, Locations, Analytical Suites, and Frequency

The media to be sampled during implementation of the RAWP may include soil and groundwater. A discussion of the sampling schedule is provided below, while the assumed number of field samples to be collected, including QC samples, is to be determined. Specifics regarding the collection of sample are provided in Section 5 of this QAPP/FSP.

4.1 Soil Sampling

Endpoint bottom and sidewall soil samples are to be collected following completion of excavation at the Site.

These confirmation and documentation samples for the remedial action are described in the RAWP and include both existing Remedial Investigation samples and proposed samples to be collected during remedial construction. Sample frequency and locations will be determined prior to the start of the remedial work. The end-point samples will be analyzed for volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8260, semivolatile organic compounds (SVOCs) using USEPA Method 8270, metals using USEPA Methods 6010 and 7471, polychlorinated biphenyls (PCBs) using USEPA Method 8082, and pesticides using USEPA Method 8081A to demonstrate compliance with the SCOs.

QA/QC samples will be collected for documentation samples.

4.2 Groundwater Sampling

If required, groundwater samples may be collected from existing permanent monitoring wells representing upgradient, central, and downgradient locations. Field parameters (e.g., pH, dissolved oxygen, oxidation-reduction potential [ORP], etc.) will also be collected using a water quality meter during purging and prior to sampling.

5. Field Sampling Procedures

This section provides a detailed discussion of the field procedures to be used during sampling as part of the RAWP. The sample locations will be determined following completion of the excavation. Additional details regarding sampling procedures and protocols are described in Roux's relevant Standard Operating Procedures (SOPs), which are provided in Appendix A.

5.1 Soil Sampling

Details for the collection of soil are provided below.

5.1.1 Soil Sampling

Soil will be collected from the sidewalls and bottom of the excavation area. The soil will be observed for lithology and evidence of contamination (e.g., staining, odors, and/or visible free-product) and placed immediately thereafter into large Ziploc® bags for recording headspace using a PID. After a minimum of 15 minutes for equilibration with the headspace in the Ziploc® bag, each sample will be screened for organic vapors using a PID equipped with a 10.6 eV lamp. Samples for possible VOC analysis will be placed in a laboratory-supplied jar or encore sampler prior to screening, due to the potential for loss of VOCs through volatilization. The samples will be placed in the laboratory-supplied containers and shipped to the laboratory under chain of custody procedures in accordance with Roux's SOPs in Appendix A.

5.2 Groundwater Sampling

If required, groundwater samples will be collected from select wells. Additional details for the collection of groundwater samples are included in the Roux SOPs in Appendix A. All groundwater samples will be placed in the laboratory-supplied containers and shipped to the laboratory under chain of custody procedures in accordance with Roux's SOPs.

6. Sample Handling and Analysis

To ensure quality data acquisition and collection of representative samples, there are selective procedures to minimize sample degradation or contamination. These include procedures for preservation of the samples, as well as sample packaging, shipping procedures, and QA/QC.

6.1 Field Sample Handling

A discussion of the proposed number and types of samples to be collected during each task, as well as the analyses to be performed, can be found in Section 4.0 of this QAPP/FSP. The types of containers, volumes, and preservation techniques for the aforementioned testing parameters are presented in Table 1.

6.2 Sample Custody Documentation

The purpose of documenting sample custody is to ensure that the integrity and handling of the samples is not subject to question. Sample custody will be maintained from the point of sampling through the analysis (and return of unused sample portion, if applicable).

Each individual collecting samples is personally responsible for the care and custody of the samples. All sample labels should be pre printed or filled out using waterproof ink. The technical staff will review all field activities with the Field Team Leader to determine whether proper custody procedures were followed during the field work and to decide if additional samples are required.

All samples being shipped offsite for analysis must be accompanied by a properly completed chain of custody form. The sample numbers will be listed on the chain of custody form. When transferring the possession of samples, individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents transfer of custody of samples from the sampler to another person, to/from a secure storage area, and to the laboratory.

Samples will be packaged for shipment and dispatched to the appropriate laboratory for analysis with a separate signed custody record enclosed in each sample box or cooler. Shipping containers will be locked and/or secured with strapping tape in at least two locations for shipment to the laboratory.

6.3 Sample Shipment

If sample shipment is necessary, sample packaging and shipping procedures are based upon USEPA specifications, as well as DOT regulations. The procedures vary according to potential sample analytes, concentration, and matrix and are designed to provide optimum protection for the samples and the public. Sample packaging and shipment must be performed using the general outline described below.

All samples will be shipped within 24 hours of collection and will be preserved appropriately from the time of sample collection. A description of the sample packing and shipping procedures is presented below:

1. Prepare cooler(s) for shipment:
   - tape drain(s) of cooler shut;
   - affix “This Side Up” arrow labels and “Fragile” labels on each cooler; and
   - place mailing label with laboratory address on top of cooler(s).
2. Arrange sample containers in groups by sample number.

3. Ensure that all bottle labels are completed correctly. Place clear tape over bottle labels to prevent moisture accumulation from causing the label to peel off.
4. Arrange containers in front of assigned coolers.
5. Place packaging material approximately at the bottom of the cooler to act as a cushion for the sample containers.
6. Arrange containers in the cooler so that they are not in contact with the cooler or other samples.
7. Fill remaining spaces with packaging material.
8. Ensure all containers are firmly packed in packaging material.
9. If ice is required to preserve the samples, ice cubes should be repackaged in Zip-lock™ bags and placed on top of the packaging material.
10. Sign chain of custody form (or obtain signature) and indicate the time and date it was relinquished to courier as appropriate.
11. Separate chain of custody forms. Seal proper copies within a large Zip-loc™ bag and tape to inside cover of cooler. Retain copies of all forms.
12. Close lid and latch.
13. Secure each cooler using custody seals.
14. Tape cooler shut on both ends.
15. Relinquish to overnight delivery service as appropriate. Retain air bill receipt for project records. (Note: All samples will be shipped for "NEXT A.M." delivery).

6.4 Quality Assurance/Quality Control

The primary intended use for the RAWP data is to confirm that remedial action objectives have been met for soil and to characterize the quality of materials being disposed off-Site. The primary DQO of the sampling program, therefore, is that data be accurate and precise, thus, representative of the actual Site conditions. Accuracy refers to the ability of the laboratory to obtain a true value (i.e., compared to a standard) and is assessed through the use of laboratory quality control (QC) samples, including laboratory control samples and matrix spike samples, as well as through the use of surrogates, which are compounds not typically found in the environment that are injected into the samples prior to analysis. Precision refers to the ability to replicate a value and is assessed through both field and laboratory duplicate samples.

Sensitivity is also a critical issue in generating representative data. Laboratory equipment must be of sufficient sensitivity to detect target compounds and analytes at levels below NYSDEC standards and guidelines whenever possible. Equipment sensitivity can be decreased by field or laboratory contamination of samples, and by sample matrix effects. Assessment of instrument sensitivity is performed through the analysis of reagent blanks, near-detection-limit standards, and response factors. Potential field and/or laboratory contamination is assessed through use of trip blanks, method blanks, and equipment rinse blanks (also called "field blanks").

Table 2 lists the requirements for field and laboratory QC samples that will be analyzed to assess data accuracy and precision, as well as to determine if equipment sensitivity has been compromised. Table 1 lists the preservation, holding times and sample container information.

All RAWP "assessment" analyses (i.e., TCL/Part 375 plus 30/ TAL) will be performed in accordance with the NYSDEC Analytical Services Protocol (ASP), using USEPA SW 846 methods. The laboratory selected to analyze the field samples collected during implementation of the RAWP shall maintain a New York State

Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) Contract Laboratory Protocol (CLP) certification for each of the “assessment” analyses listed in Section 2.0.

All laboratory data are to be reported in NYSDEC ASP Category B deliverables and will be delivered to NYSDEC in electronic data deliverable (EDD) format as described on NYSDEC’s website (http://www.dec.ny.gov/chemical/62440.html) and recent updated procedures enacted in November 2018. A Data Usability Report will be prepared meeting the requirements in Section 2.2(a)1.ii and Appendix 2B of DER-10 for all data packages generated for the RAWP.

7. Site Control Procedures

Site control procedures have been developed to minimize both the risk of exposure to contamination and the spread of contamination during field activities at the Site. In order to accomplish this objective, the QAPP addresses three main considerations:

- The establishment of discrete work zones during performance of the Work;
- The decontamination of field equipment; and
- The disposal of all waste.

All personnel who come into designated work areas, including contractors and observers, will be required to adhere strictly to the conditions imposed herein and to the provisions of a Site-Specific Health and Safety Plan (HASP). The HASP is included as Appendix J to the RIR/RAWP.

7.1 Field Work Zones

Field work zones will be limited to areas where excavation, stockpiling, and soil sampling is being conducted. Access to these areas will be limited in accordance with the HASP. Control of work zone access will be the responsibility of the individual(s) designated as a Site Health and Safety Manager. At the completion of each work day, all loose equipment (e.g., sampling equipment, coolers, etc.) will be secured. Equipment will remain onsite within an established, secured zone.

7.2 Decontamination

To avoid the spread of contamination, all sampling equipment must be decontaminated at a reasonable frequency in a properly designed and located decontamination area. Detailed procedures for the decontamination of field and sampling equipment are included in Roux's SOPs for the Decontamination of Field Equipment located in Appendix A. The location of the decontamination area will be determined prior to the start of field operations. The decontamination area will be constructed to ensure that all wash water generated during decontamination can be collected and containerized for proper disposal.

7.3 Waste Handling and Disposal

All waste materials (cuttings, decontamination water, etc.) generated during implementation of the RAWP will be consolidated, and stored in appropriate labeled bulk containers (drums, etc.), and temporarily staged at an investigation derived waste storage area on-site. Roux will then coordinate waste characterization and disposal by appropriate means.

TABLES

1. Preservation, Holding Times, and Sample Containers
2. Field and Laboratory QC Summary

Table 1. Preservation, Holding Times, and Sample Containers

Analysis	Matrix	Bottle Type	Preservation(a)	Holding Time(b)
TAL/Part 375 Metals (total) SW-846 6010/7471	Soil	8 oz wide mouth glass, teflon lined cap	Cool to 4°C	180 days, Hg 28 days
Hexavalent Chromium SW-846 7196A	Soil	2 oz wide mouth glass, teflon lined cap	None	180 days from sample collection
Total Cyanide SW-846 9012B	Soil	4 oz wide mouth glass, teflon lined cap	Cool to 4°C	14 days from sample collection
PFAS vis EPA 537(M)-Isotope Dilution 1,4-Dioxane via 8270SIM	Water Water	Three 250 mL plastic bottles 500 mL amber glass	Trizma Cool to 4°C	14 days from sample collection 7 days from sample collection
Target Compound List (TCL)/Part 375				
TCL/Part 375 Volatile Organic Compounds (VOCs) SW-846 8260B	Soil	Encore	Cool to 4°C	1 day from sample collection
TCL/Part 375 Semivolatile Organic Compounds (SVOCs) SW-846 8270C	Soil	8 oz wide mouth glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis
TCL/Part 375 Pesticides SW-846 8081A	Soil	8 oz wide mouth glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis
TCL/Part 375 Polychlorinated biphenyls (PCBs) SW-846 8082/TCLP	Soil	8 oz wide mouth glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis

(a) All soil and groundwater samples to be preserved in ice during collection and transport

(b) Days from date of sample collection.

TAL - Target Analyte List

PFAS - Per- and Polyfluoroalkyl Substances

TCL - USEPA Contract Laboratory Program Target Compound List

USEPA - United States Environmental Protection Agency

Table 2. Field and Laboratory QC Summary

QC Check Type	Minimum Frequency	Use
Field QC		
Duplicate	1 per matrix per 20 samples or SI	Precision
Trip Blank	1 per VOC cooler	Sensitivity
Field Blank	1 per matrix per 20 samples	Sensitivity
Laboratory QC		
Laboratory Control Sample	1 per matrix per SDG	Accuracy
Matrix Spike/Matrix Spike Duplicate/Matrix Duplica	1 per matrix per SDG	Accuracy/Precision
Surrogate Spike	All organics samples	Accuracy
Laboratory Duplicate	1 per matrix per SDG	Precision
Method Blank	1 per matrix per SDG	Sensitivity

Notes:
* SDG - Sample Delivery Group - Assumes a single extraction or preparation
** Provided to lab by field sampling personnel

APPENDIX A

Roux Standard Operating Procedures

Date: May 5, 2000

1.0 PURPOSE

The purpose for this standard operating procedure (SOP) is to establish the guidelines for decontamination of all field equipment potentially exposed to contamination during drilling, and soil and water sampling. The objective of decontamination is to ensure that all drilling, and soil-sampling and water-sampling equipment is decontaminated (free of potential contaminants): 1) prior to being brought onsite to avoid the introduction of potential contaminants to the site; 2) between drilling and sampling events/activities onsite to eliminate the potential for cross-contamination between boreholes and/or wells; and 3) prior to the removal of equipment from the site to prevent the transportation of potentially contaminated equipment offsite.

In considering decontamination procedures, state and federal regulatory agency requirements must be considered because of potential variability between state and federal requirements and because of variability in the requirements of individual states. Decontamination procedures must be in compliance with state and/or federal protocols in order that regulatory agency(ies) scrutiny of the procedures and data collected do not result in non-acceptance (invalidation) of the work undertaken and data collected.

2.0 PROCEDURE FOR DRILLING EQUIPMENT

The following is a minimum decontamination procedure for drilling equipment. Drilling equipment decontamination procedures, especially any variation from the method itemized below, will be documented on an appropriate field form or in the field notebook.

2.1 The rig and all associated equipment should be properly decontaminated by the contractor before arriving at the test site.

2.2 The augers, drilling casings, rods, samplers, tools, rig, and any piece of equipment that can come in contact (directly or indirectly) with the soil, will be steam cleaned onsite prior to set up for drilling to ensure proper decontamination.

2.3 The same steam cleaning procedures will be followed between boreholes (at a fixed on-site location[s], if appropriate) and before leaving the site at the end of the study.

2.4 All on-site steam cleaning (decontamination) activities will be monitored and documented by a member(s) of the staff of Roux Associates, Inc.

2.5 If drilling activities are conducted in the presence of thick, sticky oils (e.g., PCBs) which coat drilling equipment, then special decontamination procedures may have to be utilized before steam cleaning (e.g., hexane scrub and wash).

2.6 Containment of decontamination fluids may be necessary (e.g., rinseate from steam cleaning) or will be required (e.g., hexane), and disposal must be in accordance with state and/or federal procedures.

3.0 PROCEDURE FOR SOIL-SAMPLING EQUIPMENT

The following is a minimum decontamination procedure for soil-sampling equipment (e.g., split spoons, stainless-steel spatulas). Soil-sampling equipment decontamination procedures, especially any variation from the method itemized below, will be documented on an appropriate field form or in the field notebook.

3.1 Wear disposable gloves while cleaning equipment to avoid cross-contamination and change gloves as needed.

3.2 Steam clean the sampler or rinse with potable water. If soil-sampling activities are conducted in the presence of thick, sticky oils (e.g., PCBs) which coat sampling equipment, then special decontamination procedures may have to be utilized before steam cleaning and washing in detergent solution (e.g., hexane scrub and wash).

3.3 Prepare a non-phosphate, laboratory-grade detergent solution and distilled or potable water in a clean bucket.

3.4 Disassemble the sampler, as necessary and immerse all parts and other sampling equipment in the solution.

3.5 Scrub all equipment in the bucket with a brush to remove any adhering particles.

3.6 Rinse all equipment with copious amounts of potable water followed by distilled or deionized water.

3.7 Place clean equipment on a clean plastic sheet (e.g., polyethylene)

3.8 Reassemble the cleaned sampler, as necessary.

3.9 Transfer the sampler to the driller (or helper) making sure that this individual is also wearing clean gloves or wrap the equipment with a suitable material (e.g., plastic bag, aluminum foil.

As part of the decontamination procedure for soil-sampling equipment, state and/or federal protocols must be considered. These may require procedures above those specified as minimum for Roux Associates, Inc., such as the use of nitric acid, acetone, etc. Furthermore, the containment and proper disposal of decontamination fluids must be considered with respect to regulatory agency(ies) requirements.

4.0 PROCEDURE FOR WATER-SAMPLING EQUIPMENT

The following is a decontamination procedure for water-sampling equipment (e.g., bailers, pumps). Water-sampling equipment decontamination procedures, especially any variation from the method itemized below, will be documented on an appropriate field form or in the field notebook.

4.1 Decontamination procedures for bailers follow:

a. Wear disposable gloves while cleaning bailer to avoid cross-contamination and change gloves as needed.

b. Prepare a non-phosphate, laboratory-grade detergent solution and potable water in a bucket.

c. Disassemble bailer (if applicable) and discard cord in an appropriate manner and scrub each part of the bailer with a brush and solution.

d. Rinse with potable water and reassemble bailer.

e. Rinse with copious amounts of distilled or deionized water.

f. Air dry.

g. Wrap equipment with a suitable material (e.g., clean plastic bag, aluminum foil).

h. Rinse bailer at least three times with distilled or deionized water before use.

4.2 Decontamination procedures for pumps follow:

a. Wear disposable gloves while cleaning pump to avoid cross-contamination and change gloves as needed.

b. Prepare a non-phosphate, laboratory-grade detergent solution and potable water in a clean bucket, clean garbage can, or clean 55-gallon drum.

c. Flush the pump and discharge hose (if not disposable) with the detergent solution and discard disposable tubing and/or cord in an appropriate manner.

d. Flush the pump and discharge hose (if not disposable) with potable water.

e. Place the pump on clear plastic sheeting.

f. Wipe any pump-related equipment (e.g., electrical lines, cables, discharge hose) that entered the well with a clean cloth and detergent solution, and rinse or wipe with a clean cloth and potable water.

g. Air dry.

h. Wrap equipment with a suitable material (e.g., clean plastic bag).

As part of the decontamination procedure for water-sampling equipment, state and/or federal protocols must be considered. These may require procedures above those specified as minimum for Roux Associates, Inc., such as the use of nitric acid, acetone, etc. Furthermore, the containment and proper disposal of decontamination fluids must be considered with respect to regulatory agency(ies) requirements.

Date: May 5, 2000

1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to establish guidelines for the collection of soil samples for laboratory analysis. This SOP is applicable to soil samples collected from split-spoon samplers during drilling, hand auger samples, grab samples from stockpiled soils, surface samples, test pit samples, etc.

2.0 CONSIDERATIONS

Soil samples may be collected in either a random or biased manner. Random samples can be based on a grid system or statistical methodology. Biased samples can be collected in areas of visible impact or suspected source areas. Soil samples can be collected at the surface, shallow subsurface, or at depth. When samples are collected at depth the water content should be noted, since generally "soil sampling" is restricted to the unsaturated zone. Equipment selection will be determined by the depth of the sample to be collected. A thorough description of the sampling locations and proposed methods of sample collection should be included in the work plan.

Commonly, surface sampling refers to the collection of samples at a 0 to 6-inch depth interval. Certain regulatory agencies may define the depth interval of a surface sample differently, and this must be defined in the work plan. Collection of surface soil samples is most efficiently accomplished with the use of a stainless-steel trowel or scoop. For samples at greater depths a decontaminated bucket auger or power auger may be needed to advance the hole to the point of sample collection. Another clean bucket auger should then be used to collect the sample. To collect samples at depths of greater than approximately six feet the use of a drill rig and split spoon samples will usually be necessary. In some situations, sample locations are accessed with the use of a backhoe.

3.0 MATERIALS/EQUIPMENT

a. A work plan which outlines soil sampling requirements.

b. Field notebook, field form(s), maps, chain-of-custody forms, and custody seals.

c. Decontamination supplies (including: non-phosphate, laboratory grade detergent, buckets, brushes, potable water, distilled water, regulatory-required reagents, aluminum foil, plastic sheeting, etc.).

d. Sampling device (split-spoon sampler, stainless steel hand auger, stainless steel trowel, etc.).

e. Stainless steel spoons or spatulas.

f. Disposable sampling gloves.

g. Laboratory-supplied sample containers with labels.

h. Cooler with blue or wet ice.

i. Plastic sheeting.

j. Black pen and indelible marker.

k. Zip-lock bags and packing material.

l. Tape measure.

m. Paper towels or clean rags.

n. Masking and packing tape.

o. Overnight (express) mail forms.

4.0 DECONTAMINATION

All reusable sampling equipment will be thoroughly cleaned according to the decontamination SOP. Where possible, thoroughly pre-cleaned and wrapped sampling equipment should be used and dedicated to individual sampling locations. Disposable items such as sampling gloves, aluminum foil, and plastic sheeting will be changed after each use and discarded in an appropriate manner.

5.0 PROCEDURE

5.1 Prior to collecting soil samples, ensure that all sampling equipment has been thoroughly cleaned according to the decontamination SOP. If samples are to be collected at depth, then the boring must be advanced with thoroughly cleaned equipment to the desired sampling horizon and a different thoroughly cleaned sampler must be used to collect the sample.

5.2 Using disposable gloves and a pre-cleaned, stainless steel spatula or spoon, extract the soil sample from the sampler, measure the recovery, and separate the wash from the true sample. Where allowed by regulatory agency(ies), disposable plastic spoons may be used.

5.3 Place the sample in a laboratory-supplied, pre-cleaned sample container. This should be done as quickly as possible and this is especially important when sampling for volatile organic compounds (VOCs). Samples to be analyzed for VOCs must be collected prior to other constituents.

5.4 The sample container will be labeled with appropriate information such as, client name, site location, sample identification (location, depth, etc.), date and time of collection, and sampler's initials.

5.5 Using the remaining portion of soil from the sampler, log the sample in detail and record sediment characteristics (color, odor, moisture, texture, density, consistency, organic content, layering, grain size, etc.).

5.6 If soil samples are to be composited in the field, then equal portions from selected locations will be placed on a clean plastic sheet and homogenized. Alternately, several samples may be submitted to the laboratory for compositing by weight. The method used is dependent upon regulatory requirements. Specific compositing procedures shall be approved by the appropriate regulatory agency and described in the work plan. Samples to be analyzed for VOCs will not be composited unless required by a regulatory agency.

5.7 After the sample has been collected, labeled, and logged in detail, it is placed in a zip-lock bag and stored in a cooler at 4°C.

5.8 A chain-of-custody form is completed for all samples collected. One copy is retained and two are sent with the samples in a zip-lock bag to the laboratory. A custody seal is placed on the cooler prior to shipment.

5.9 Samples collected from Monday to Friday are to be delivered to the laboratory within 24 hours of collection. If Saturday delivery is unavailable, samples collected on Friday must be delivered by Monday morning. Check the work plan to determine if any analytes require a shorter delivery time.

5.10 The field notebook and appropriate forms should include, but not be limited to the following: client name, site location, sample location, sample depth, sample identification, date and time collected, sampler's name, method of sample collection, number and type of containers, geologic description of material, description of decontamination procedures, etc. A site map should be prepared with exact measurements to each sample location in case follow-up sampling is necessary.

5.11 All reusable sampling equipment must be thoroughly cleaned in accordance with the decontamination SOP. Following the final decontamination (after all samples are collected) the sampling equipment is wrapped in aluminum foil. Discard any gloves, foil, plastic, etc. in an appropriate manner that is consistent with site conditions.

END OF PROCEDURE

Date: May 5, 2000

1.0 PURPOSE

The purpose of this standard operating procedure (SOP) is to establish guidelines for sample handling which will allow consistent and accurate results. Valid chemistry data are integral to investigations that characterize media-quality conditions. Thus, this SOP is designed to ensure that once samples are collected, they are preserved, packed and delivered in a manner which will maintain sample integrity to as great an extent as possible. The procedures outlined are applicable to most sampling events and any required modifications must be clearly described in the work plan.

2.0 CONSIDERATIONS

Sample containers, sampling equipment decontamination, quality assurance/quality control (QA/QC), sample preservation, and sample handling are all components of this SOP.

2.1 Sample Containers

Prior to collection of a sample, considerations must be given to the type of container that will be used to store and transport the sample. The type and number of containers selected is usually based on factors such as sample matrix, potential contaminants to be encountered, analytical methods requested, and the laboratory's internal quality assurance requirements. In most cases, the overriding considerations will be the analytical methodology, or the state or federal regulatory requirements because these regulations generally encompass the other factors. The sample container selected is usually based on some combination of the following criteria:

a. Reactivity of Container Material with Sample

Choosing the proper composition of sample containers will help to ensure that the chemical and physical integrity of the sample is maintained. For sampling potentially hazardous material, glass is the recommended container type because it is chemically inert to most substances. Plastic containers are not recommended for most hazardous wastes because the potential exists for contaminants to adsorb to the surface of the plastic or for the plasticizer to leach into the sample.

In some instances, however, the sample characteristics or analytes of interest may dictate that plastic containers be used instead of glass. Because some metals species will adhere to the sides of the glass containers in an aqueous matrix, plastic bottles (e.g., nalgene) must be used for samples collected for metals analysis. A separate, plastic

container should accompany glass containers if metals analysis is to be performed along with other analyses. Likewise, other sample characteristics may dictate that glass cannot be used. For example, in the case of a strong alkali waste or hydrofluoric solution, plastic containers may be more suitable because glass containers may be etched by these compounds and create adsorptive sites on the container's surface.

b. Volume of the Container

The volume of sample to be collected will be dictated by the analysis being performed and the sample matrix. The laboratory must supply bottles of sufficient volume to perform the required analysis. In most cases, the methodology dictates the volume of sample material required to complete the analysis. However, individual laboratories may provide larger volume containers for various analytes to ensure sufficient quantities for duplicates or other QC checks.

To facilitate transfer of the sample from the sampler into the container and to minimize spillage and sample disturbance, wide-mouth containers are recommended. Aqueous volatile organic samples must be placed into 40-milliliter (ml) glass vials with polytetrafluoroethylene (PTFE) (e.g., TeflonTM) septums. Non-aqueous volatile organic samples should be collected in the same type of vials or in 4-ounce (oz) wide-mouth jars provided by the laboratory. These jars should have PTFE-lined screw caps.

c. Color of Container

Whenever possible, amber glass containers should be used to prevent photodegradation of the sample, except when samples are being collected for metals analysis. If amber containers are not available, then containers holding samples should be protected from light (i.e., place in cooler with ice immediately after filling).

d. Container Closures

Container closures must screw on and off the containers and form a leak-proof seal. Container caps must not be removed until the container is ready to be filled with the sample, and the container cap must be replaced (securely) immediately after filling it. Closures should be constructed of a material which is inert with respect to the sampled material, such as PTFE (e.g., TeflonTM). Alternately, the closure may be separated from the sample by a closure liner that is inert to the sample material such as PTFE sheeting. If soil or sediment samples are being collected, the threads of the container must be wiped clean with a dedicated paper towel or cloth, so the cap can be threaded properly.

e. Decontamination of Sample Containers

Sample containers must be laboratory cleaned by the laboratory performing the analysis. The cleaning procedure is dictated by the specific analysis to be performed on the sample. Sample containers must be carefully examined to ensure that all containers appear clean. Do not mistake the preservative as unwanted residue. The bottles should not be field cleaned. If there is any question regarding the integrity of the bottle, then the laboratory must be contacted immediately and the bottle(s) replaced.

f. Sample Bottle Storage and Transport

No matter where the sample bottles are, whether at the laboratory waiting to be packed for shipment or in the field waiting to be filled with sample, care must be taken to avoid contamination. Sample shuttles or coolers, and sample bottles must be stored and transported in clean environments. Sample bottles and clean sampling equipment must never be stored near solvents, gasoline, or other equipment that is a potential source of cross-contamination. When under chain of custody, sample bottles must be secured in locked vehicles, and custody sealed in shuttles or in the presence of authorized personnel. Information which documents that proper storage and transport procedures have been followed must be included in the field notebook and on appropriate field forms.

2.2 Decontamination of Sampling Equipment

Proper decontamination of all re-usable sampling equipment is critical for all sampling episodes. The SOP for Decontamination of Field Equipment and SOPs for method-specific or instrument-specific tasks must also be referred to for guidance for decontamination of various types of equipment.

2.3 Quality Assurance/Quality Control Samples

QA/QC samples are intended to provide control over the proper collection and tracking of environmental measurements, and subsequent review, interpretation and validation of generated analytical data. The SOPs for Collection of Quality Control Samples, for Evaluation and Validation of Data, and for Field Record Keeping and Quality Assurance/Quality Control must be referred to for detailed guidance regarding these respective procedures. SOPs for method-specific or instrument-specific tasks must also be referred to for guidance for QA/QC procedures.

2.4 Sample Preservation Requirements

Certain analytical methodologies for specific analytes require chemical additives in order to stabilize and maintain sample integrity. Generally, this is accomplished under the following two scenarios:

a. Sample bottles are preserved at the laboratory prior to shipment into the field.

b. Preservatives are added in the field immediately after the samples are collected.

Many laboratories provide pre-preserved bottles as a matter of convenience and to help ensure that samples will be preserved immediately upon collection. A problem associated with this method arises if not enough sample could be collected, resulting in too much preservative in the sample. More commonly encountered problems with this method include the possibility of insufficient preservative provided to achieve the desired pH level or the need for additional preservation due to chemical reactions caused by the addition of sample liquids to pre-preserved bottles. The use of pre-preserved bottles is acceptable; however, field sampling teams must always be prepared to add additional preservatives to samples if the aforementioned situations occur. Furthermore, care must be exercised not to overfill sample bottles containing preservatives to prevent the sample and preservative from spilling and therefore diluting the preservative (i.e., not having enough preservative for the volume of sample).

When samples are preserved after collection, special care must be taken. The transportation and handling of concentrated acids in the field requires additional preparation and adherence to appropriate preservation procedures. All preservation acids used in the field should be trace-metal or higher-grade.

2.5 Sample Handling

After the proper sample bottles have been received under chain-of-custody, properly decontaminated equipment has been used to collect the sample, and appropriate preservatives have been added to maintain sample integrity, the final step for the field personnel is checking the sample bottles prior to proper packing and delivery of the samples to the laboratory.

All samples should be organized and the labels checked for accuracy. The caps should be checked for tightness and any 40-ml volatile organic compound (VOC) bottles must be checked for bubbles. Each sample bottle must be placed in an individual Ziploc® bag to protect the label, and placed on ice. The bottles must be carefully packed to prevent breakage during transport. When several bottles have been collected for an individual sample, they should not be placed adjacent to each other in the cooler to prevent possible breakage of all bottles for a given sample. If there are any samples which are known or suspected to be highly

contaminated, these should be placed in an individual cooler under separate chain-of-custody to prevent possible cross contamination. Sufficient ice (wet or blue packs) should be placed in the cooler to maintain the temperature at 4 degrees Celsius (°C) until delivery at the laboratory. Consult the work plan to determine if a particular ice is specified as the preservation for transportation (e.g., the United States Environmental Protection Agency does not like the use of blue packs because they claim that the samples will not hold at 4°C). If additional coolers are required, then they should be purchased. The chain-of-custody form should be properly completed, placed in a "zip-lock" bag, and placed in the cooler. One copy must be maintained for the project files. The cooler should be sealed with packing tape and a custody seal. The custody seal number should be noted in the field book. Samples collected from Monday through Friday will be delivered to the laboratory within 24 hours of collection. If Saturday delivery is not available, samples collected on Friday must be delivered by Monday morning. Check the work plan to determine if certain analytes require a shorter delivery time. If overnight mail is utilized, then the shipping bill must be maintained for the files and the laboratory must be called the following day to confirm receipt.

3.0 EQUIPMENT AND MATERIALS

3.1 General equipment and materials may include, but not necessarily be limited to, the following:

a. Sample bottles of proper size and type with labels.

b. Cooler with ice (wet or blue pack).

c. Field notebook, appropriate field form(s), chain-of-custody form(s), custody seals.

d. Black pen and indelible marker.

e. Packing tape, "bubble wrap," and "zip-lock" bags.

f. Overnight (express) mail forms and laboratory address.

g. Health and safety plan (HASP).

h. Work plan/scope of work.

i. Pertinent SOPs for specified tasks and their respective equipment and materials.

3.2 Preservatives for specific samples/analytes as specified by the laboratory. Preservatives must be stored in secure, spillproof glass containers with their content, concentration, and date of preparation and expiration clearly labeled.

3.3 Miscellaneous equipment and materials including, but not necessarily limited to, the following:

a. Graduated pipettes.

b. Pipette bulbs.

c. Litmus paper.

d. Glass stirring rods.

e. Protective goggles.

f. Disposable gloves.

g. Lab apron.

h. First aid kit.

i. Portable eye wash station.

j. Water supply for immediate flushing of spillage, if appropriate.

k. Shovel and container for immediate containerization of spillage-impacted soils, if appropriate.

4.0 PROCEDURE

4.1 Examine all bottles and verify that they are clean and of the proper type, number, and volume for the sampling to be conducted.

4.2 Label bottles carefully and clearly with project name and number, site location, sample identification, date, time, and the sampler's initials using an indelible marker.

4.3 Collect samples in the proper manner (refer to specific sampling SOPs).

4.4 Conduct preservation activities as required after each sample has been collected. Field preservation must be done immediately and must not be done later than 30 minutes after sample collection.

4.5 Conduct QC sampling, as required.

4.6 Seal each container carefully and place in an individual "zip lock" bag.

4.7 Organize and carefully pack all samples in the cooler immediately after collection (e.g., bubble wrap). Insulate samples so that breakage will not occur.

4.8 Complete and place the chain-of-custody form in the cooler after all samples have been collected. Maintain one copy for the project file. If the cooler is to be transferred several times prior to shipment or delivery to the laboratory, it may be easier to tape the chain-of-custody to the exterior of the sealed cooler. When exceptionally hazardous samples are known or suspected to be present, this should be identified on the chain-of-custody as a courtesy to the laboratory personnel.

4.9 Add additional ice as necessary to ensure that it will last until receipt by the laboratory.

4.10 Seal the cooler with packing tape and a custody seal. Record the number of the custody seal in the field notebook and on the field form. If there are any exceptionally hazardous samples, then shipping regulations should be examined to ensure the sample containers and coolers are in compliance and properly labeled.

4.11 Samples collected from Monday through Friday will be delivered to the laboratory within 24 hours of collection. If Saturday delivery is not available, samples collected on Friday must be delivered by Monday morning. Check the work plan to determine if certain analytes require a shorter delivery time.

4.12 Maintain the shipping bill for the project files if overnight mail is utilized and call the laboratory the following day to confirm receipt.

END OF PROCEDURE

APPENDIX H

Site-Specific Health and Safety Plan

Site-Specific Health and Safety Plan

580 Gerard Former Post Office Vehicle Repair Shop Site
580-610 Gerard Avenue
Bronx, New York
NYSDEC BCP Site No. C203142

October 8, 2021

Prepared for:

SB Gerard Avenue LLC
570 Lexington Avenue, 43rd Floor
New York, New York 10022

Prepared by:

Roux Environmental Engineering and Geology, D.P.C.
209 Shafter Street
Islandia, New York 11749

3523.0001Y109/CV

Table of Contents

Table of Contents (Continued)

Tables

Figures

Appendices

Site-Specific Emergency Information

Emergency Phone Numbers

Most emergency services can be obtained by calling **911**. Where 911 service is not available, use the telephone numbers provided in the below table. The following is a master emergency phone list for use by the project management personnel. A more condensed version of the emergency numbers listed below will be posted throughout project work areas. Emergencies encountered on the Site will be responded to by a combination of off-Site emergency services and Site personnel.

Emergency Contact Information			
Site Personnel			
Title	**Contact**		**Telephone**
Office Manager (OM)	Michael Ritorto		Main: (631) 232-2600 Direct: (631) 630-2370 Mobile: (631) 445-0357
Project Principal (PP)	Robert Kovacs		Main: (631) 232-2600 Direct: (631) 630-2320 Mobile: (516) 250-0359
Project Manager (PM)	Jessica Lam		Main: (631) 232-2600 Direct: (631) 630-2349 Mobile: (516) 270-4095
Site Supervisor (SS)	TBD		TBD
Site Health and Site Safety Officer (SHSO)	TBD		TBD
Office Health and Safety Manager (OHSM)	Kristina DeLuca		Main: (631) 232-2600 Direct: (631) 630-2406 Mobile: (516) 830-1189
Corporate Health and Safety Manager (CHSM)	Brian Hobbs		Main: (631) 232-2600 Direct: (631) 630-2419 Mobile: (631)807-0193
AllOne Health	Occupational Health Care Management Provider		800-350-4511
Client Emergency Contact	Steve Wilkowski		Mobile: (718) 326-2808
Outside Assistance			
Agency	**Contact**	**Telephone**	**Address/Location**
Ambulance/emergency medical services (EMS)	FDNY EMS Station 14	(718) 665-1832 / 911	2824 Park Avenue, Bronx, New York
Police	Lincoln Hospital Police Station	(718) 579-5757/ 911	234 East 149th Street, Bronx, New York
Fire	FDNY Squad 41	(347) 272-5083 / 911	330 East 150th Street, Bronx, New York
Site Address	580-610 Gerard Avenue, Bronx, NY 10451		

Directions to Lincoln Medical Center, 34 E 149th Street, Bronx, NY 10451 (Figure 3):

1. Head north on Gerard Avenue towards East 151st Street.
2. Turn right onto East 151st Street.
3. Turn right at the 1st cross street onto Walton Avenue.
4. Turn left onto East 149th Street and the destination will be ahead on the right.

Directions to AFC Urgent Care Bronx 149th, 332 E 149th Street, Bronx, NY 10451 (Figure 3):

1. Head north on Gerard Avenue towards East 151st Street.
2. Turn right onto East 151st Street.
3. Turn right at the 1st cross street onto Walton Avenue.
4. Turn left onto East 149th Street and the destination will be ahead on the right.

1. Introduction

This Site-specific Health and Safety Plan (HASP) has been prepared by Roux Environmental Engineering and Geology, D.P.C. (Roux) for use during the Remedial Action (RA) (e.g., soil excavation/management, endpoint/backfill sampling, construction oversight, vapor barrier installation, etc.) at the 580 Gerard Former Post Office Vehicle Repair Site located at 580-610 Gerard Avenue, Bronx, New York (Site) (see **Figure 1**). These activities fall within the scope of operations covered by the Occupational Safety and Health Administration (OSHA) standards promulgated at 29 CFR 1910.120 and 29 CFR 1926.65, both commonly referred to as the Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard. In accordance with the HAZWOPER Standard, this Site-specific HASP was prepared to address the safety and health hazards associated with the RA activities being performed at the Site by Roux and to provide requirements and procedures for the protection of Roux employees, subcontractor personnel, government oversight personnel, Site personnel, and the general public. It also addresses client- and Site-specific requirements for health and safety. Additionally, subcontractors may be required to submit their own HASP as it relates to their specific work activities and will be kept on-Site during such work.

Implementation of this HASP is the joint responsibility of the Project Manager (PM), the Site Health and Safety Officer (SHSO), and all field staff, with assistance from the Project Principal (PP), Office Health and Safety Manager (OHSM), and Corporate Health and Safety Manager (CHSM). The PM for this project is Jessica Lam. The Site Supervisor (SS) and Site Health and Safety Officer (SHSO) is to be decided and will be communicated prior to the start of any work.

1.1 Roles and Responsibilities

Overall Roles and Responsibilities (R&Rs) of Roux personnel are provided in Roux's Policies and Procedures Manual. Only those R&Rs specific to HASP requirements are listed below.

Project Manager (PM)

The PM has responsibility and authority to direct all work operations. The PM coordinates safety and health functions with the Site Health and Safety Officer (SHSO), has the authority to oversee and monitor the performance of the SHSO, and bears ultimate responsibility for the proper implementation of this HASP. The specific duties of the PM are:

- Preparing and coordinating the Site work plan;
- Providing Site supervisor(s) with work assignments and overseeing their performance; Coordinating safety and health efforts with the SSHO;
- Ensuring effective emergency response through coordination with the Emergency Response Coordinator (ERC); and
- Serving as primary Site liaison with public agencies, officials, and Site contractors.

Site Health and Safety Officer (SHSO)

The SHSO has full responsibility and authority to develop and implement this HASP and to verify compliance. The SHSO reports to the Project Manager. The SHSO is on Site or readily accessible to the Site during all work operations and has the authority to halt Site work if unsafe conditions are detected. The specific responsibilities of the SHSO include:

- Managing the safety and health functions on this Site;

- Serving as the Site's point of contact for safety and health matters;
- Ensuring Site monitoring, worker training, and effective selection and use of PPE;
- Assessing Site conditions for unsafe acts and conditions and providing corrective action;
- Assisting the preparation and review of this hasp;
- Maintaining effective safety and health records as described in this HASP; and
- Coordinating with the Site Supervisor(s) and others as necessary for safety and health efforts.

Site Supervisor

The Site Supervisor is responsible for field operations and reports to the Project Manager (PM). The Site Supervisor ensures the implementation of the HASP requirements and procedures in the field. The specific responsibilities of the Site Supervisor include:

- Executing the work plan and schedule as detailed by the PM;
- Coordination with the SHSO on safety and health; and
- Ensuring Site work compliance with the requirements of this HASP.

Site Workers

Site workers are responsible for complying with this HASP, using the proper PPE, reporting unsafe acts and conditions, and following the work and safety and health instructions of the Project Manager (PM), SHSO, and Site Supervisor.

2. Background

The Site is located in the Concourse Village section of the Bronx, New York as shown on **Figure 1**. The Site is approximately 31,200-square feet in size.

Relevant background information is provided below, including a general description of the Site; a brief review of the Site's history with respect to hazardous material use, handling, and/or storage; and a review of known and potential releases of hazardous substances at the Site.

2.1 Site Description

The Site is approximately 32,200-square feet in area and is developed with a one-story garage building with offices and a partial basement used for utilities. The building is currently vacant but was most recently occupied by a US Postal Service branch.

Adjacent properties include a one-story warehouse and garage building to the north; a one-story warehouse and garage building to the south; residential apartment buildings to the east; and a two-story commercial building and parking lot to the west.

2.2 Site History

Sanborn maps indicated that the Site was first developed in 1951 with the current building located at the Site, which was identified as a post office garage. The maps further indicate that this structure was built in 1950. The Sanborn Maps generally indicate the presence of this garage until the most recent 2007 map. No developments prior to 1950 were identified in any of the Sanborn Maps reviewed.

2.3 Known and Potential Releases of Hazardous Substances at the Site

GEI performed a Phase II ESA of the Site in September 2018 which included the performance of a Ground Penetrating Radar (GPR) survey, advancement of eight soil borings, collection of sixteen soil samples, advancement of two groundwater probes, collection of two groundwater samples and the collection of four sub-slab soil vapor samples.

The results of the soil subsurface investigation identified exceedances of Restricted Residential Soil Cleanup Objectives (RRSCOs) for metals in six (6) of eight (8) borings; semi volatile organic compounds (SVOCs) in four (4) borings; and polychlorinated biphenyls (PCBs) in two (2) borings. Metals and Total PCBs were detected at the highest concentrations in SB-3 at a depth of 0-2 feet bls. SVOCs were detected above RRSCOS in four borings, with the highest concentrations revealed in SB-7 at a depth of 0-2 feet bls. Pesticides were also detected at concentrations above Unrestricted Use Soil Cleanup Objectives (UUSCOs); however, they were below RRSCOs in four (4) borings, with the highest concentration detected in SB-8 at a depth of 0-2 feet bls. VOCs were detected in groundwater sample SB-2(GW) including 1,2,4-Trimethlybenzene, 1,3,5-Trimethlybenzene, Chloroform, Isopropylbenzene, n-Butylbenzene, n-Propylbenzene, and Napthalene at concentrations above NYSDEC Technical and Operational Guidance Series (TOGs) standards.

No detections above NYSDEC TOGs standards were detected in groundwater sample SB-5 (GW). VOCs were detected in soil vapor at mostly low levels throughout the project Site, with the exception of elevated tetrachloroethene (PCE) detected in sub-slab soil vapor sample SV-2.

The Phase II ESA indicates that historical operations at the Site do not appear to have impacted environmental quality. However, based upon the historical use of the Site as an auto repair facility and the detection of metals, SVOCs, and PCBs in soil; VOCs in groundwater; and PCE in sub-slab soil vapor, there is potential for an on-Site source of contamination.

3. Scope of Work

Scope of work involves the following activities, along with the oversight and support of these activities by Roux, associated with the Remedial Action Work Plan (RAWP):

- Excavation, soil handling, and off-Site disposal of soil over the entire Site. The assumed remedial excavation depths range from approximately 15 to 25 ft bls;
- Collection of excavation endpoint and backfill samples;
- Import, backfill, and compaction of certified clean fill;
- Removal/Decommissioning of underground storage tanks (USTs);
- Dust suppression, community air monitoring (CAMP) and stormwater pollution prevention plan (SWPPP) inspections;
- Groundwater monitoring well abandonment and installation;
- Implementation of dewatering/treatment system;
- Provision and installation of vapor barrier; and
- Transportation and disposal of non-hazardous solid waste and dewatering system carbon.

If there are any changes with the scope a revision of the HASP will be required to address any new hazards.

4. Site Control

This Site control program is designed to reduce the spread of hazardous substances from contaminated areas to clean areas, to identify and isolate contaminated areas of the Site, to facilitate emergency evacuation and medical care, to prevent unauthorized entry to the Site, and to deter vandalism and theft.

4.1 Site Map

A map of this site, showing site boundaries, designated work zones, and points of entry and exit is provided in **Figure 2**.

4.2 Site Access

Access to the work areas at the Site is restricted to reduce the potential for exposure to its safety and health hazards. During hours of Site operation, Site entry and exit will be authorized only at designated points to be determined.

4.3 Buddy System

While working in the Exclusion Zone, Site workers use the buddy system. The buddy system means that personnel work in pairs and stay in close visual contact to be able to observe one another and summon rapid assistance in case of an emergency. The responsibilities of workers using the buddy system include:

- Remaining in close visual contact with partner;
- Providing partner with assistance as needed or requested;
- Observing partner for signs of heat stress or other difficulties;
- Periodically checking the integrity of partner's PPE; and
- Notifying the Site manager or other Site personnel if emergency assistance is needed.

4.4 Site Communications

The following communication equipment is used to support on-Site communication: cellular telephones and visual hand signals.

- Cellular telephones will be available for communication with emergency support services/facilities. Each field person is equipped with a cellular telephone and is available for communication with emergency support services. A current list of emergency contact numbers is published and posted on-Site.

As applicable, hand signals will be used according to the following:

Hand Signals

SIGNAL	MEANING
Hand gripping throat	Out of air, can't breathe
Grip partner's wrist	Leave area immediately
Hands on top of head	Need assistance

Hand Signals

SIGNAL	MEANING
Thumbs up	I'm all right, okay
Thumbs down	No, negative

A current list of emergency contact numbers is included in the Site-Specific Emergency Information at the beginning of this HASP.

4.5 Site Work Zones

This Site is divided into three (3) major zones, described below. These zones are characterized by presence or absence of biological and chemical hazards and the activities performed within them. Zone boundaries are clearly marked at all times and the flow of personnel among the zones is controlled. The Site is monitored for changing conditions that may warrant adjustment of zone boundaries. Zone boundaries are adjusted as necessary to protect personnel and clean areas. Whenever boundaries are adjusted, zone markings are also changed and workers are immediately notified of the change. The Heavy Equipment Exclusion Zone Policy is attached in **Appendix F**.

Exclusion Zone

The area where contamination exists is the Exclusion Zone (EZ). All areas where excavation and handling of contaminated materials take place are considered the EZ. This zone will be clearly delineated by orange high visibility fencing. Safety tape may be used as a secondary delineation within the EZ. The zone delineation markings may be opened in areas for varying lengths of time to accommodate equipment operation or specific construction activities. The SHSO may establish more than one EZ where different levels of protection may be employed or where different hazards exist. Personnel are not allowed in the EZ without:

- A buddy (co-worker);
- Required minimum level PPE;
- Medical Authorization;
- Training certification; and
- Requirement to be in the zone.

Contamination Reduction Zone

A Contamination Reduction Zone (CRZ) is established between the exclusion zone and the support zone. The CRZ contains the Contamination Reduction Corridor (CRC) and provides an area for decontamination of personnel and equipment. The CRZ will be used for general Site entry and egress in addition to access for heavy equipment and emergency support services. Personnel are not allowed in the CRZ without:

- A buddy (co-worker)
- Appropriate PPE
- Medical authorization
- Training certification
- Requirement to be in the zone

Support Zone

The Support Zone (SZ) is an uncontaminated area that will be the field support area for the Site operations. The SZ provides for field team communications and staging for emergency response. Appropriate sanitary facilities and safety equipment will be located in this zone. Potentially contaminated personnel or materials are not allowed in this zone. The only exception will be appropriately packaged/decontaminated and labeled samples.

5. Job Hazard Evaluation

Roux's work at the Site is expected to entail a variety of physical, chemical, and biological hazards, all of which must be sufficiently managed to allow the work to be performed safely. Some of the hazards are Site-specific (i.e., they are associated with the nature, physical characteristics, and/or routine operation of the Site itself) while others are activity-specific (i.e., they are associated with [or arise from] the particular activity being performed). The various hazards can be grouped into the following categories:

Caught/Crushed – the potential to become caught in, under, between, or by an object or parts of an object, such as equipment with parts that open and close or move up and down ("pinch points") or equipment that rotates, and the accompanying potential to have body parts cut, mangled, or crushed thereby.

Contact – the potential to be struck by or against moving or stationary objects that can cause physical injury, such as heavy machinery, overhead piping, moving vehicles, falling objects, and equipment (including tools and hand-held equipment) or infrastructure with the ability to cut or impale.

Energy Sources – the potential for bodily harm associated with energy sources, most notably electricity, but also including latent energy sources such as compressed air and equipment under tension (which when released could cause injurious contact or a fall).

Ergonomics – the potential for musculoskeletal injury associated with lifting/carrying, pushing/pulling, bending, reaching, and other physical activity attributable to poor body position/mechanics, repetitive motion, and/or vibration.

Exposure – the potential for injury/illness due to physical, chemical, or biological exposures in the work environment, including but not limited to temperature extremes, solar radiation, and noise (physical), chemical splashes and hazardous atmospheres (chemical), and animal/insect bites and poisonous plants (biological).

Falls – the potential to slip or trip and thus fall or drop a load, resulting in bodily injury to oneself or others

The foregoing is intended to provide Roux employees with a general awareness of the hazards involved with Site work. A more detailed review of the potential hazards associated with each specific activity planned for the Site (or on-going activity, as the case may be) is provided in the activity-specific Job Safety Analysis (JSA) forms in **Appendix A**. As can be seen in the JSA forms, the hazards are identified by category per the above, and specific measures designed to mitigate/manage those hazards are also identified. In preparing the JSA forms, all categories of hazards were considered, and all anticipated potential hazards were identified to the extent possible based on the experience of the personnel preparing and reviewing the JSA forms. However, there is always the possibility for an unanticipated hazard to arise, potentially as condition change over the course of the workday. Roux personnel must maintain a continual awareness of potential hazards in the work zone, regardless of whether the hazard is identified in the JSA form. Particular attention should be paid to hazards associated with exposure to hazardous substances (see Table 1 for a listing of the hazardous substances most likely to be encountered in environmental media at the Site) and to Site personnel being located "in the line of fire" with respect to moving equipment, pinch points, and latent energy (e.g., being located or having body parts located within the swing radius of an excavator, between two sections of pipe being connected, below a piece of suspended equipment, or adjacent to a compressed air line).

5.1 Hazard Communication and Overall Site Information Program

The information in the JSAs and safety data sheets is made available to all employees and subcontractors who could be affected by it prior to the time they begin their work activities. Modifications to JSAs are communicated during routine pre-work briefings.

The information in the JSAs and Safety Data Sheets (SDSs) is made available to all employees and subcontractors who could be affected by an exposure to the hazards covered in them prior to the time they begin their work activities. Modifications to JSAs are communicated during routine pre-work briefings, and periodically updated as needed in the HASP. SDSs will be maintained by the SHSO/SS for new chemicals brought on-Site as needed. Copies of SDSs can be found in **Appendix B**.

5.2 Noise

Noise is associated with the operation of heavy equipment, power tools, pumps, and generators. Noise is also a potential hazard when working near operating equipment such as excavators, drill rigs or pole drivers. High noise (i.e., < 85 dBA) operations may be evaluated by the SHSO utilizing a type 2 handheld sound level meter (SLM) operating on the "A"-weighted scale with slow response because this scale most closely resembles human response to noise and complies with OSHA 29 CFR 1910.95. Hearing protection is required in areas with noise exposure greater than 85 dBA. Double hearing protection (ear plugs and earmuffs) are required in areas where the noise exposure is more than 95 dBA. Noise exposure will be controlled by hearing protection as described above or by maintaining set-backs from high-noise equipment, as warranted. Personnel handling heavy equipment and using power tools that produce noise levels exceeding those described levels above are required by OSHA 29 CFR 1910.95 to wear the appropriate Noise Reduction Rating (NRR) level of hearing protection. Appropriate hearing protection will be evaluated by the SHSO as necessary in consultation with the OHSM and CHSM.

5.3 Biological Hazards

Biological hazards that may potentially be present at a Site, include poisonous plants, insects (ticks, spiders, bees), animals (snakes, dogs), etc. Information on biological hazards can be found within Roux's Biological Hazard Awareness Management Program located within Roux's Corporate Health and Safety Manual. There is also potential for transmission and/or exposure to SARS-CoV-2, the virus that causes COVID-19. Prior to beginning work, on-Site protocols shall be established by the project team, including subcontractors, in accordance with federal, state, county, city, and/or other guidance, as applicable and consistent with **Appendix C**. Government guidance/orders generally consist of implementation of the following protocols/procedures (or some variation thereof):

- Self-monitoring for symptoms;
- Fitness check for work each day;
- Limiting businesses to "essential" operations;
- Social distancing (generally 6 feet);
- Cloth face masks/ coverings;
- Hand washing/ disinfectant use; and
- Care/ awareness of surroundings (public spaces, equipment, hotel rooms, rental cars).

Additional guidance on minimizing potential exposure to SARS-CoV-2, including a JSA, are included in **Appendix C**.

6. Emergency Response Plan

This emergency response plan details actions to be taken in the event of Site emergencies. The PM and SHSO is responsible for the implementation of emergency response procedures on-Site. The SHSO/PM provides specific direction for emergency action based upon information available regarding the incident and response capabilities and initiates emergency procedures and notification of appropriate authorities. In the event of an emergency, Site personnel are evacuated and do not participate in emergency response activities, response is facilitated through external emergency services.

6.1 Emergency Response

The SHSO, after investigating the incident and relevant information, shall determine the level of response required for containment, rescue and medical care. Limited on-Site emergency response activities could occur therefore the SHSO is responsible for notifying external emergency response agencies. The SHSO provides relevant information to the responding organizations, including but not limited to the hazards associated with the emergency incident, potential containment problems, and missing Site personnel.

6.2 Emergency Alerting and Evacuation

If evacuation notice is given, Site workers leave the worksite, if possible, by way of the nearest exit. Appropriate primary and alternate evacuation routes and assembly areas have been identified and are shown on the Site Plan with Emergency Muster Area (**Figure 2**). The routes and assembly area will be determined by conditions at the time of the evacuation based on wind direction, the location of the hazard source, and other factors as determined by SHSO/PM.

Personnel exiting the Site gather at a designated assembly point. To determine that everyone has successfully exited the Site, personnel will be accounted for at the assembly point. If any worker cannot be accounted for, notification is given to the SHSO, PM, and any arriving response authorities so that appropriate action can be initiated. Subcontractors on this Site have coordinated their emergency response plans to ensure that these plans are compatible and potential emergencies are recognized, alarm systems are clearly understood, and evacuation routes are accessible to all personnel relying upon them.

6.3 Emergency Medical Treatment and First Aid

In the event of a work-related injury or illness, employees are required to follow the procedures outlined below. All work-place injury and illness situations require Roux's Project and Corporate Management Team to be notified when an injury/illness incident occurs, and communication with the contracted Occupational Health Care Management Provider, AllOne Health (AOH), is initiated. The Injury/Illness Notification Flowchart is provided below and within Roux's Incident Investigation and Reporting program included as **Appendix G**.

If on-Site personnel require any medical treatment, the following steps will be taken:

a. Notify Roux's Project and Corporate Management Team for any work-related injury and/or illness occurrence, and communicate with the contracted Occupational Health Care Management Provider, AOH, immediately following the notifications provided above.

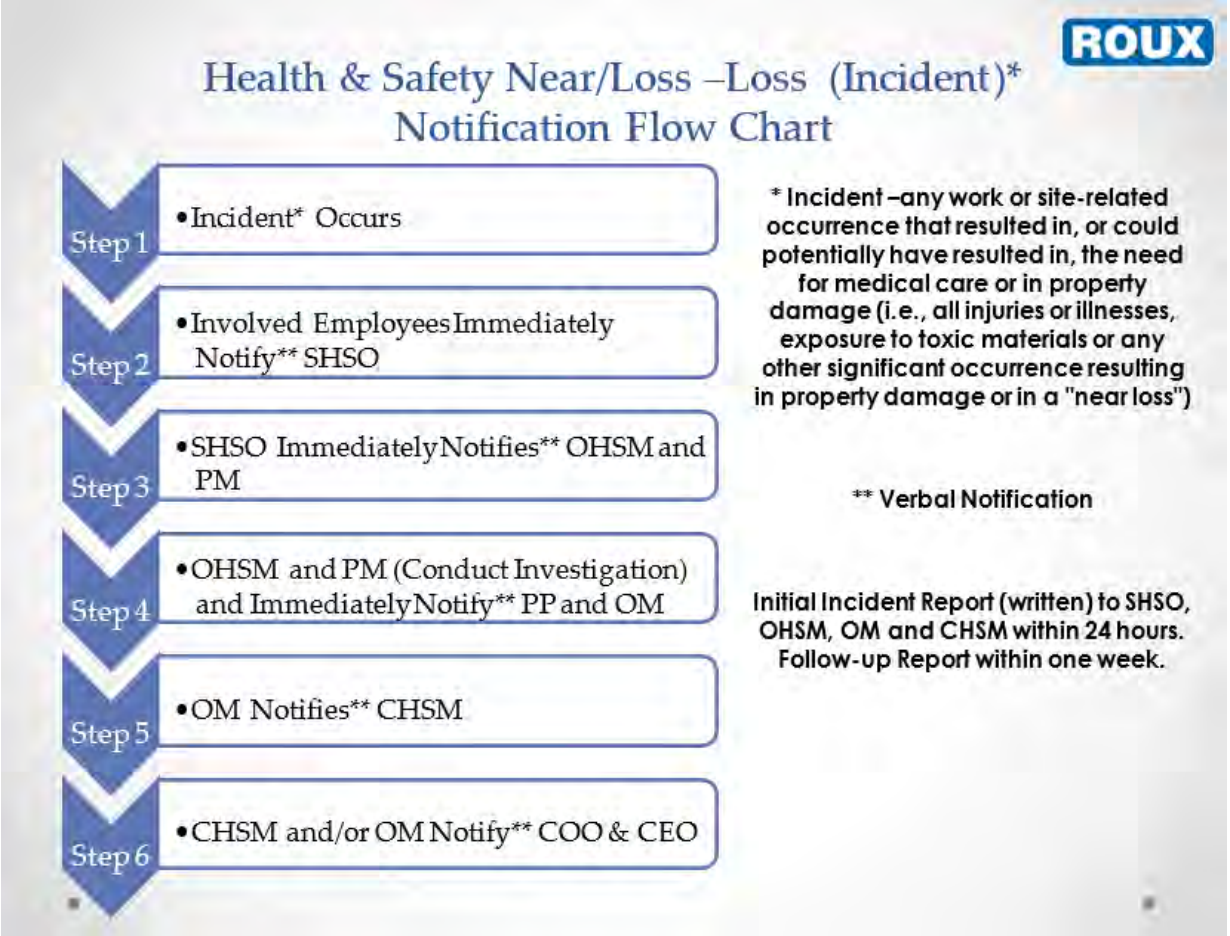
1. Based on discussions with the Project Team, Corporate Management and the AOH evaluation, if medical attention beyond on-Site First Aid is warranted, transport the injured / ill person (IP) to the Urgent Care Center, or notify the Fire Department or Ambulance Emergency service and request an

ambulance or transport the victim to the hospital, and continue communications with Corporate Management Team. An Urgent Care/Hospital Route map with location to Lincoln Medical Center and AFC Urgent Care Bronx is included as **Figure 3**.

b. Decontaminate to the extent possible prior to administration of first aid or movement to medical or emergency facilities.

c. First aid medical support will be provided by on-Site personnel trained and certified in First Aid, Cardio Pulmonary Resuscitation (CPR), Automatic External Defibrillation (AED), and Blood-Borne Pathogens (BBP) Awareness, until relieved by emergency medical services (EMS).

d. The SHSO and Project Manager will perform a Loss Investigation (LI) and the Project Team will complete the final Loss Report. If a Roux employee is involved in a vehicular incident, the employee must also complete the Acord Automobile Loss Notice.



6.4 Adverse Weather Conditions

In the event of adverse weather conditions, the SHSO or project principal will determine if work can continue without sacrificing the health and safety of all field workers. Some of the items to be considered prior to determining if work should continue are:

- Potential for heat stress and heat-related injuries;
- Potential for cold stress and cold-related injuries;
- Treacherous weather-related conditions;

- Limited visibility; and
- Electrical storm potential.

Site activities will be limited to daylight hours and acceptable weather conditions. Inclement working conditions include heavy rain, fog, high winds, and lightning. Observe daily weather reports and evacuate if necessary in case of inclement weather conditions.

6.5 Electrical Storm Guidelines

In the event that lightning and/or thunder are observed while working on-Site, all on-Site activities shall stop and personnel shall seek proper shelter (e.g., substantial building, enclosed vehicle, etc.). Work shall not resume until the threat of lighting has subsided and no lightning or thunder has been observed for 30 minutes. If the possibility of lightning is forecast for the day, advise the on-Site personnel on the risks and proper procedure at the pre-work safety briefing. Continuously monitor for changing weather conditions and allow enough time to properly stop work if lightning is forecast.

7. Safety Procedures

This section of the HASP presents the specific safety procedures to be implemented during Roux's activities at the Site in order to protect the health and safety of various on-Site personnel. Minimum OSHA-mandated procedures are presented first, followed by client- and Site-specific procedures. Lastly, activity-specific procedures are discussed. These Site and activity-specific procedures supplement the general safety procedures included in Roux's Corporate Health and Safety Manual, which also must be followed in their entirely.

7.1 Training

At a minimum, Site personnel who will perform work in areas where there exists the potential for toxic exposure will be health and safety-trained prior to performing work on-Site per OSHA 29 CFR 1910.120(e) and 29 CFR 1926.65(e). More specifically, all Roux, subcontractor, and other personnel engaged in sampling and remedial activities at the Site and who are exposed or potentially exposed to hazardous substances, health hazards, or safety hazards must have received at a minimum the 40 hour initial HAZWOPER training consistent with the requirements of 29CFR 1910.120(e)(3)(i) training and a minimum of 3 days' actual field experience under the direct supervision of a trained experienced supervisor, plus 8 hours of refresher training on an annual basis. Depending on tasks performed, less training may be permitted. Evidence of such training must be maintained at the Site at all times. Furthermore, all on-Site management and supervisory personnel directly responsible for or who supervise the employees engaged in Site remedial operations, must have received an additional 8 hours of specialized training at the time of job assignment on topics including, but not limited to, the employer's safety and health program and the associated employee training program, personal protective equipment program, spill containment program, and health hazard monitoring procedure and techniques, plus 8 hours of refresher training on an annual basis.

Roux personnel training records are maintained in a corporate database with records available upon request from either the OHSM/SHSO/CHSM or Human Resources Department.

7.2 Site-Specific Safety Briefings for Visitors

A Site-specific briefing is provided to all Site visitors who enter this Site beyond the Site entry point. For visitors, the Site-specific briefing provides information about Site hazards, the Site lay-out including work zones and places of refuge, the emergency alarm system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

7.3 HASP Information and Site-Specific Briefings for Workers

Site personnel review this HASP and are provided a Site-specific tailgate briefing prior to the commencement of work to ensure employees are familiar with this HASP and the information and requirements it contains, as well as the relevant JSAs included in **Appendix A**. Additional briefings are provided as necessary to notify employees of any changes to this HASP as a result of information gathered during on-going Site characterization and analysis of changing conditions. Conditions for which we schedule additional briefings include, but are not limited to: changes in Site conditions, changes in the work schedule/plan, newly discovered hazards, and incidents occurring during Site work.

7.4 Medical Surveillance

The medical surveillance section of the Health and Safety Plan describes how worker health status is monitored at this Site. Medical surveillance is used when there is the potential for worker exposure to hazardous substance at levels above OSHA permissible exposure limits or other published limits. The purpose of a medical surveillance program is to medically monitor worker health to ensure that personnel are not adversely affected by Site hazards. The provisions for medical surveillance at this Site are based on the Site characterization and job hazard analysis found in Section 4 of this HASP and are consistent with OSHA requirements in 29 CFR 1910.120(f) as applicable.

7.4.1 Site Medical Surveillance Program

Medical surveillance requirements are based on a worker's potential for exposure as determined by the Site characterization and job hazard analysis documented in Section 4 and JSAs within **Appendix A** of this HASP and in compliance with the requirements of 29 CFR 1910.120(f)(2). Based on Site information and use of direct reading instruments, limited use of respirators (less than 30 days per year), and the absence of an employee-staffed HAZMAT team, a limited medical surveillance program is required and implemented at this Site. The medical surveillance program provides that:

1. Workers assigned to tasks requiring the use of respirators receive medical examinations in accordance with 29 CFR 1910.134(e) to ensure they are physically capable to perform the work and use the equipment, and
2. If a worker is injured, becomes ill, or develops signs or symptoms of possible over-exposure to hazardous substance or health hazards, medical examinations are provided to that worker as soon as possible after the occurrence and as required by the attending physician.
3. These medical examinations and procedures are performed by or under the supervision of a licensed physician and are provided to workers free of cost, without loss of pay, and at a reasonable time and place. In addition, the need to implement a more comprehensive medical surveillance program will be re-evaluated after any apparent over-exposure.

7.4.2 Medical Recordkeeping Procedures

Medical recordkeeping procedures are consistent with the requirements of 29 CFR 1910.1020 and are described in the company's overall safety and health program. A copy of that program is available at our Islandia, New York office.

The following items are maintained in worker medical records:

- Respirator fit test and selection;
- Physician's medical opinion of fitness for duty (pre-placement, periodic, termination);
- Physician's medical opinion of fitness for respirator protection (pre-placement, periodic); and
- Exposure monitoring results.

7.4.3 Program Review

The medical program is reviewed to ensure its effectiveness. The Corporate Health and Safety Manager in coordination with the Human Resources Director is responsible for this review. At minimum, this review consists of:

- Review of accident and injury records and medical records to determine whether the causes of accidents and illness were promptly investigated and whether corrective measures were taken wherever possible;
- Evaluation of the appropriateness of required medical tests based on Site exposures; and
- Review of emergency treatment procedures and emergency contacts list to ensure they were Site-specific, effective, and current.

7.5 Personnel Protection

Site safety and health hazards are eliminated or reduced to the greatest extent possible through engineering controls and work practices. Where hazards are still present, a combination of engineering controls, work practices and PPE are used to protect employees. Appropriate personal protective equipment (PPE) shall be worn by Site personnel when there is a potential exposure to chemical hazards or physical hazards (e.g., falling objects, flying particles, sharp edges, electricity, and noise), as determined by the SHSO. The level of personal protection, type and kind of equipment selected will depend on the hazardous conditions and in some cases cost, availability, compatibility with other equipment, and performance. An accurate assessment of all these factors will be made before work can be safely executed.

Roux maintains a comprehensive written PPE program that addresses proper PPE selection, use, maintenance, storage, fit and inspection. Roux's PPE program can be found within **Appendix D**. PPE to be used at the Site will meet the appropriate American National Standards Institute (ANSI) standards and the following OSHA (General/Construction Industry) standards for minimum PPE requirements.

The minimum level of PPE for entry onto the Site is Level D. The following equipment shall be worn:

- Work uniform (long pants, sleeved shirt);
- Hard hat;
- Steel or composite toe work boots;
- Safety Glasses (must comply with one of the following ANSI/ISEA Z87.1-2010, ANSI Z87.1-2003, ANSI Z87.1-2003);
- Boot Covers (as needed);
- Hearing protection (as needed);
- High visibility clothing (shirt/vest); and
- Hand protection (e.g., minimum cut resistance meeting ANSI 105-2000 Level 2).

Note that jewelry shall be removed or appropriately secured to prevent it from becoming caught in rotating equipment or unexpectedly snagged on a fixed object (e.g., wrist watches, bracelets, rings, chains and necklaces, open earrings). Do not wear loose clothing and all shoulder-length hair should be tied back.

Site specific PPE ensembles and materials are identified within task specific JSAs located within **Appendix A**, and any upgrades or downgrades of the level of protection (i.e., not specified in the JSA) must

be approved by the PP and immediately communicated to all Roux personnel and subcontractors as applicable. PPE is used in accordance with manufacturer's recommendations.

7.5.1 Hearing Conservation

Hearing protection is made available when noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 dBA. Hearing protection is required when the 8-hour time weighted average sound level $\geq$ 90 dBA. Where noise exposure meets or exceeds this level, noise is listed as a physical hazard in the JSA for the tasks/operation, and hearing protection is included as one of the control measures (PPE).

7.6 Monitoring

An air monitoring program is important to the safety of on- and off-Site personnel, and the surrounding area. A preliminary survey, to establish background conditions in the immediate sampling area, may be made prior to the initiation of Site work including, but not limited to, monitoring wind direction (e.g., wind socks) and approximate temperature during all invasive Site activities. This survey will be conducted with the appropriate pre-calibrated air monitoring instrument(s), as warranted by the field activity. Once this survey has been complete, any changes in the type of PPE will be determined and relayed to those working on-Site.

Work zone air monitoring will be performed to verify that the proper level of PPE is used, and to determine if increased protection or work stoppage is required. The following equipment shall be used to monitor conditions:

- A Photoionization Detector (PID) with a lamp energy of 10.6 eV will be used to provide direct readings of organic vapor concentrations during intrusive activities to determine that personnel protection is adequate. Concentrations shall be recorded during intrusive activities with the potential to encounter contaminant vapors.

Personal exposure monitoring utilizing activated charcoal tubes may be considered based on whether or not the area sample results are at or above half of the PEL. The decision to perform the monitoring will be made by, and under the control of, the CHSM.

Below are monitoring action levels for Site-specific chemicals of concern. In the event PID readings above the thresholds identified below are sustained for 5 minutes in the breathing zone, worker protection will require upgrading following notification to the OHSM and applicable parties (e.g., client, board of health, regulators, etc.).

7.6.1 Action Levels for Air Monitoring

PPE can remain at Level D if breathing zone VOC concentrations are less than 5 ppm and benzene is non-detect. Personnel are required to evacuate the Site when breathing zone VOC readings exceed 25 ppm.

The following tables include summaries of the air monitoring, work practices, and action levels for the expected contaminants. The action levels to initiate testing with colorimetric tubes for airborne volatiles is 1 ppm (PID reading) and is based on the Permissible Exposure Limit (PEL) for benzene (1 ppm). The colorimetric tubes are used to confirm the presence or absence of specific constituents, and they do not provide a measured concentration.

Air Monitoring Summary and Action Levels Organic Vapors	
PID Reading in Breathing Zone (ppm)[1]	**Action**
0-1 ppm above background[2]	Continue monitoring
1-5 ppm sustained 60 seconds	Continue monitoring, if applicable initiate additional collection of benzene using colorimetric tubes.
<5 ppm and no presence of benzene	Continue Monitoring, ventilate space
≥ 5 ppm - ≤ 25 ppm and no presence of benzene	Ventilate space until PID reads < 5 ppm. If < 5 ppm cannot be achieved, upgrade to Level C[3].
≥ 25 ppm	Ventilate space and evacuate area.

1 Based on relative response/sensitivity of PID to benzene.
2 Background concentrations should be established at the beginning of each work day. It may be necessary to re-establish background concentrations and ambient conditions vary through the day.
3 Measured air concentrations of known organic vapors will be reduced by the respirator to one half of the PEL or lower, and the individual and combined compound concentrations shall be within the service limit of the respirator cartridge.

Air Monitoring Summary and Action Levels Oxygen	
O_2 Reading in Breathing Zone (%)[1]	**Action**
20.9% O_2	Oxygen level normal
< 19.5% O_2	Oxygen deficient Interrupt task/Evacuate area
>23.5% O_2	Oxygen enriched Interrupt task/Evacuate area

1. Action levels based on USEPA Standard Operating Safety Guides; Table 5-1, Atmospheric Hazard Action Guidelines may be further restricted based on the CHSM's professional judgment and experience.

Air Monitoring Summary and Action Levels Carbon Monoxide	
CO Reading in Breathing Zone (ppm)[1]	**Action**
<25 ppm	Inspect exhaust system for leaks or other sources of CO. Monitor initially and every 15 minutes during use of CO-generating equipment.
25-50 ppm	Ventilate area. Monitor continuously and record measurements. Contact PM.
>50 ppm	Cease Field Operations. Ventilate area.

1. Based upon the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) of 25 ppm as an 8-hour time weighted average (TWA) and OSHA's Permissible Exposure Limit (PEL) of 50 ppm as an 8-hour TWA concentration.

Air Monitoring Summary and Action Levels Combustible Gases	
Lower Explosive Limit (LEL) Reading	**Action**
< 4% LEL (<2,000 ppm)	Site activities will continue with normal monitoring
4% – 20% LEL (2,000 – 10,000 ppm)	Stop work until levels dissipate to <4% LEL
> 20% LEL (>10,000 ppm)	Potential explosion hazard. Halt all Site activities, research source of release, aerate work area, suppress source.

Air Monitoring Summary and Action Levels Hydrogen Sulfide	
Hydrogen Sulfide (H_2S) Reading	**Action**
<10 ppm	Site activities will continue with normal monitoring
>10 ppm	Stop work until levels dissipate to <10 ppm; use mechanical ventilation if possible
Cannot use air purifying respirators for H_2S because of olfactory fatigue	

7.6.2 Air Monitoring Equipment and Calibration

A PID calibrated to an appropriate calibration mixture will be used to detect organic vapors in and around the work areas. Monitoring will be conducted in and around all work areas and at the workers breathing zone before activities commence to establish a background level, then at 15-minute intervals throughout the day. All equipment will be calibrated according to the manufacturer's recommendation. A calibration log will be maintained and will include the name of the person who performed the calibration, the date and time calibrated, and the instrument reading at the time of calibration. A manual bellows pump or equivalent with colorimetric tubes for formaldehyde will be utilized to determine the course of action related to upgrading or downgrading the level of respiratory protection, as applicable.

If air monitoring data indicate safe levels of potentially harmful constituents at consistent intervals (5-minute intervals), then monitoring can be conducted less frequently (every 30 minutes). This determination will be made by the on-Site SHSO. Monitoring data, including background readings and calibration records, will be documented. Work to be performed on-Site will conform to Roux's Standard Operating Procedures (SOPs). Conformance with these guidelines as well as the guidelines described in this HASP will aid in mitigating the physical and chemical hazards mentioned throughout this HASP.

7.7 Tailgate Safety Meetings

A designated Site worker will provide daily safety briefings (e.g., tailgate meetings) including, but not limited to, the following scenarios:

- When new operations are to be conducted;
- Whenever changes in work practices must be implemented; and
- When new conditions are identified and/or information becomes available.

Daily safety briefings shall be recorded on the Roux Daily Tailgate Health and Safety Meeting Log/Daily Site Safety Checklist, and all completed forms will become a part of the project file.

7.8 Spill Containment

Spill containment equipment and procedures should, at a minimum, meet the requirements of the facility's Spill Prevention, Control and Countermeasure Plan, if applicable. Otherwise, spill containment equipment and procedures must be considered depending on the task including, but no limited to, chemical/product transfer points and handling.

7.8.1 Initial Spill Notification and Response

Any worker who discovers a hazardous substance spill will immediately notify Jessica Lam. The worker will, to his/her best ability, report the hazardous substance involved, the location of the spill, the estimated quantity of material spilled, the direction/flow of the spill material, related fire/explosion incidents, and any associated injuries without compromising their own safety.

7.8.2 Spill Evaluation and Response

Jessica Lam, Project Geologist, is responsible for evaluating spills and determining the appropriate response. When this evaluation is being made, the spill area will be isolated and demarcated to the extent possible. If necessary to protect nearby community members, notification of the appropriate authorities is made by the PM as appropriate. On-Site response is limited to small spills (e.g., <10 gallons); large spills require external emergency responders who will be contacted by the SHSO.

7.9 Decontamination

The decontamination section of the HASP describes how personnel and equipment are decontaminated when they leave the Exclusion Zone. This section also describes how residual waste from decontamination processes is disposed. The Site decontamination procedures are designed to achieve an orderly, controlled removal or neutralization of contaminants that may accumulate on personnel or equipment. These procedures minimize worker contact with contaminants and protect against the transfer of contaminants to clean areas of the Site and off-Site. They also extend the useful life of PPE by reducing the amount of time that contaminants contact and can permeate PPE surfaces. Decontamination is facilitated within the CRZ at this Site, if applicable.

7.9.1 Decontamination Procedures for Personnel and PPE

The following are general decontamination procedures established and implemented at this Site.

1. Decontamination is required for all workers exiting a contaminated area. Personnel may re-enter the SZ only after undergoing the decontamination procedures described below in the next section.

2. Protective clothing is decontaminated, cleaned, laundered, maintained and/or replaced as needed to ensure its effectiveness.
3. PPE used at this Site that requires maintenance or parts replacement is decontaminated prior to repairs, or
4. PPE used at this Site is decontaminated or prepared for disposal on the premises. Personnel who handle contaminated equipment have been trained in the proper means to do so to avoid hazardous exposure.
5. This Site uses an off-Site laundry for decontamination of PPE. The Site has informed that facility of the hazards associated with contaminated PPE from this Site.
6. The Site requires and trains workers that if their permeable clothing is splashed or becomes wetted with a hazardous substance, they will immediately exit the work zone, perform applicable decontamination procedures, shower, and change into uncontaminated clothing.
7. Procedures for disposal of decontamination waste meet applicable local, State, and Federal regulations.

7.9.2 Decontamination Procedures for Equipment

All tools, equipment, and machinery from the EZ or CRZ are decontaminated in the CRZ prior to removal to the SZ. Equipment decontamination procedures are designed to minimize the potential for hazardous skin or inhalation exposure and to avoid cross-contamination and chemical incompatibilities.

General Equipment Decontamination Procedures:

1. Decontamination is required for all equipment exiting a contaminated area. Equipment may re-enter the SZ only after undergoing the equipment decontamination procedures.
2. Vehicles that travel regularly between the contaminated and clean areas of the Site are carefully decontaminated each time they exit the EZ and the effectiveness of that decontamination is monitored to reduce the likelihood that contamination will be spread to other parts of the Site.
3. Particular attention is given to decontaminating tires, scoops, and other parts of heavy equipment that are directly exposed to contaminants and contaminated soil.

The following items may be used to decontaminate equipment:

- Fresh water rinse;
- Non-phosphorus detergent wash;
- Distilled water rinse;
- Acetone rinse;
- Distilled water rinse; and
- A steam cleaner or pressure washer (heavy equipment only).

7.9.3 Monitoring the Effectiveness of Decontamination Procedures

Visual examination and sampling are used to evaluate the effectiveness of decontamination procedures. Visual examination is used to ensure that procedures are implemented as described and that they appear to control the spread of contaminants under changing Site conditions. Visual examination is also used to inspect for signs of residual contamination or for contaminant permeation of PPE.

Personnel who work in contaminated areas of the Site, either the Contamination Reduction Zone (CRZ) or the Exclusion Zone, are trained in the principles and practices of decontamination described in this section

of the HASP and in related SOPs. If Site procedures are changed as a result of inspection and monitoring, all affected employees are notified of these changes.

7.10 Confined Space Entry

Confined space entry is not anticipated during the scope of work. The following is a list of the safety requirements for confined space entry at the Site:

- **ROUX PERSONNEL ARE NOT AUTHORIZED TO ENTER AN OSHA PERMIT REQUIRED CONFINED SPACE;**
- Currently the scope of work **DOES NOT** require personnel to enter permitted confined space for this project; and
- Any changes to the field activities that may necessitate confined space entry will be reported to the Project Principal and OHSM.

Confined space is defined as any space, depression, or enclosure that:

- Has limited opening for entry and egress;
- Is large enough for and employee to enter and perform assigned work; and
- Is not intended for continuous occupancy.

A permit required confined space is one that meets the definition of a confined space and has one or more of the following characteristics:

- May contain or produce life-threatening atmospheres due to oxygen deficiency the presence of toxic, flammable, or corrosive contaminants;
- Contains a material that has the potential for engulfment;
- Has an internal configuration that may cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section; and
- Contains any other serious safety or health hazards.

Although Roux personnel will not perform confined space entry, it is expected that subcontractors performing cleaning and mitigation and/or remedial measures activities may be required to enter structures that are considered to be a permit required confined space. Permitting of the confined space as well as hazard mitigation for entry will be completed by the subcontractor in accordance with 1910.146.

7.11 Client and Site-Specific

In addition to the OSHA-specific procedures discussed above, there may be client and Site-specific safety procedures that must be adhered to during the performance of remedial activities at the Site.

7.12 Unusual or Significant Risks

Field activities that appear to have unusual or significant risks that cannot be adequately managed with existing risk tools such as LPS, HASPs, traffic safety plans, work permits, design and O&M practices, equipment HAZOPS or other safety tools must be referred to the CHSM to help with the assessment and management of the associated potential safety risks. Examples include the use of explosives for demolition, use of firearms to control wildlife, rappelling, demolition over water, diving, etc.

7.13 Activity-Specific Hazards

In addition to the general hazards discussed above, there are activity-specific hazards associated with each work activity planned for the Site. An activity-specific JSA has been completed for each of the activities planned for the Site. JSAs are provided in **Appendix A**. In the event that new work activities or tasks are planned, JSAs will be developed and implemented prior to performing the new activities. In the absence of a JSA, the personnel performing work must prepare a field JSA and receive clearance from a designated competent safety official prior to performing any task with significant risk. In emergency situations where time is critical SPSAs will be utilized to identify the task, associated hazards and mitigative actions to take. For lower risk activities (as deemed by the discretion of a Competent Person) where a JSA is determined to not be needed, the individual(s) conducting the activities must perform SPSAs prior to and during the work.

7.13.1 Electrical and Other Utility Assessment and Accommodations

Roux shall perform a Site walk to identify any potential overhead electrical or utility lines. All applicable guidelines will be followed in the vicinity of overhead power and utility lines (see Section 7.13.3 below).

Roux has also reviewed all available Site maps showing buried utility lines to identify potential hazards, which revealed that no underground hazards are known to exist in the vicinity of the areas of the Site pertinent to this HASP.

7.13.2 Subsurface Work

Subsurface work activities will require adherence to Roux's Corporate Subsurface Utility Clearance Management program found within **Appendix E**.

7.13.2.1 Excavations and Trenching

All trenching and excavation work activities contracted by Roux shall comply with 29 CFR 1926.651-652 Subpart P. Additionally, for trenches greater than 4 feet deep, where employees will enter, the trench needs to have a stairway or ladder or other safe means of egress. Where employees will enter trenches greater than 5 feet deep, the trench must have some type of protective system or sloped appropriately to prevent cave-ins.

The SHSO will be present on-Site during all Roux contracted excavation and backfill operations and will supplement health and safety monitoring conducted by Subcontractor air quality screening to ensure that appropriate levels of protection and safety procedures are utilized. The proximity of chemical, water, sewer, and electrical lines will be identified by Roux and/or their subcontractor before any subsurface activity or sampling is attempted.

The following safe work practices will be implemented during this task.

- The proximity of chemical, water, sewer, and electrical lines will be identified by a facility representative prior to beginning any subsurface activity.
- While earthmoving, stay out of the excavator's delineated heavy equipment exclusion zone and away from the excavation sides, where there is potential for cave in (within excavations that are 6 feet or more in depth, a delineated perimeter 6 feet away from the excavated edge is required).

Maximum Allowable Slopes

Soil or Rock Type	Maximum Allowable Slopes (H:V)[1] for Excavations Less Than 20 Feet Deep[3]
Stable Rock	Vertical (90°)
Type A[2]	3/4 : 1 (53°)
Type B	1 : 1 (45°)
Type C	1 1/2 : 1 (34°)

OSHA (29 CFR 1926.652, Subpart P, Appendices A and B)

Notes:

1 Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.

2 A short-term maximum allowable slope of 1/2H : 1V (63°) is allowed in excavations in Type A soil that are 12 feet (3.67 meters) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 meters) in depth shall be 3/4H : 1V (53°).

3 Sloping or benching for excavations greater than 20 feet deep shall be designed and stamped by a registered professional engineer.

Proper stockpiling (i.e., 2 feet minimum distance from the excavation edge), containment, transport, storage, and disposal practices will be utilized and is dependent upon the potential type and amount of waste generated during operations. The location of safety equipment and evacuation procedures will be established prior to initiation of operations according to this HASP.

7.13.3 Heavy Equipment

Use of heavy equipment at the Site will require adherence to Roux's Corporate Heavy Equipment Exclusion Zone Management Program found within **Appendix F**. Additionally, operation of the drill rig/other heavy equipment will maintain clearances from overhead power lines in accordance with OSHA 29 CFR1926.1408 Table A Minimum Clearance Distances provided below.

Minimum Required Clearances for Energized Overhead Power Lines

Nominal System Voltage of Power Line (K V)	Minimum Required Clearance (feet)
0-50	10
51-100	12
101-200	15
201-300	20
301-500	25
501-750	35
751-1000	45

1 kilovolt (KV) = 1,000 volts

7.14 Heat Stress

The National Oceanic and Atmospheric Administration records average minimum/maximum temperatures of 27 and 85 degrees Fahrenheit during the year in Bronx, NY.

7.14.1 Heat Stress

Heat stress is a significant potential hazard and can be associated with heavy physical activity and/or the use of personal protective equipment in hot weather environments. Heat cramps are brought on by prolonged

exposure to heat. As an individual sweats, water and salts are lost by the body resulting in painful muscle cramps. The signs and symptoms of heat stress are as follows:

- Severe muscle cramps, usually in the legs and abdomen;
- Exhaustion, often to the point of collapse; and
- Dizziness or periods of faintness.

First aid treatment includes, but is not limited to, shade, rest, and fluid replacement. Typically, the individual should recover within one-half hour while being monitored constantly. If the individual has not improved substantially within 30 minutes and the body temperature has not decreased, the individual should be transported to a hospital for medical attention.

7.14.2 Heat Exhaustion

Heat exhaustion may occur in a healthy individual who has been exposed to excessive heat while working or exercising. The circulatory system of the individual fails as blood collects near the skin to rid the body of excess heat through transference. The signs and symptoms of heat exhaustion are as follows:

- Rapid and shallow breathing;
- Weak pulse;
- Cold and clammy skin with heavy perspiration;
- Skin appears pale;
- Fatigue and weakness;
- Dizziness; and
- Elevated body temperature.

First aid treatment includes, but is not limited to, cooling the victim, elevating the feet, and replacing fluids.

If the individual is not substantially improved within 30 minutes and the body temperature has not decreased, the individual should be transported to the hospital for medical attention.

7.14.3 Heat Stroke

Heat stroke occurs when an individual is exposed to excessive heat and stops sweating. This condition is classified as a MEDICAL EMERGENCY requiring immediate cooling of the victim and transport to a medical facility. The signs and symptoms of heat stroke are as follows:

- Dry, hot red skin;
- Body temperature approaching or above 105 degrees F;
- Confusion, altered mental state, slurred speech;
- Seizures;
- Large (dilated) pupils; and
- Loss of consciousness – the individual may go into a coma.

First aid treatment requires immediate cooling and transportation to a medical facility. Heat stress is a significant hazard if any type of protective equipment (semi-permeable or impermeable) that prevents evaporative cooling when worn in hot weather environments.

7.15 Cold Stress

Cold stress is a danger at low temperatures and when the wind-chill factor is low. Prevention of cold-related illnesses is a function of whole-body protection. Adequate insulating clothing must be used when the air temperature is below 60°F. A work/rest regimen will be initiated when ambient temperatures and protective clothing cause a stressful situation. In addition, reduced work periods followed by rest in a warm area may be necessary in extreme conditions. The signs and symptoms of cold stress include the following:

- Severe shivering;
- Abnormal behavior;
- Slowing;
- Weakness;
- Stumbling or repeated falling;
- Inability to walk;
- Collapse; and/or
- Unconsciousness.

First aid requires removing the victim from the cold environment and seeking medical attention immediately. Also, prevent further body heat loss by covering the victim lightly with blankets. Do not cover the victim's face. If the victim is still conscious, administer hot drinks and encourage activity such as walking, wrapped in a blanket.

8. Field Team Review

Each person performing work at or visiting this Site shall sign this section after Site-specific training is completed and before being permitted to access the CRZ or Exclusion Zone.

I have read and understand this Site-Specific Health and Safety Plan. I will comply with the provision contained therein.

Site/Project: 580 Gerard Former Post Office Vehicle Repair Site,
580-610 Gerard Avenue, Bronx, New York

Name Printed	Signature	Date

9. Approvals

By their signature, the undersigned certify that this HASP is approved and will be utilized at the 580 Gerard Former Post Office Vehicle Repair Site.

TBD – Site Health and Safety Officer	Date
Kristina DeLuca - Office Health and Safety Manager	Date
Jessica Lam – Project Manager	Date
Robert Kovacs – Project Principal	Date

TABLE

Toxicological Properties of Hazardous Substances Present at the Site

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at 580 Gerard Former Post Office Vehicle Repair Site, Bronx

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Acenaphthene	83-32-9	None established	None established	None established	None established	inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, respiratory system	Eyes, skin, respiratory system	Brown solid
Acenaphthylene	208-96-8	None Established	None established	None established	None established	inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, respiratory system	Eyes, skin, respiratory system	Yellow Solid Fl. Pt.=251°F
Arsenic (inorganic)	7440-38-2 (metal)	TWA 0.01 mg/m3	Ca C 0.002 mg/m3 [15-min]	TWA 0.010 mg/m3	Ca [5 mg/m3 (as As)]	Inhalation; ingestion; skin absorption; skin and/or eye contact	Ulceration of nasal septum, dermatitis, GI disturbances, peripheral neuropathy, resp irritation, hyperpigmentation of skin, [potential occupational carcinogen]	Liver, kidneys, skin, lungs, lymphatic sys	Metal: sliver-gray or tin-white, brittle, odorless solid BP: sublimes
Barium	7440-39-3	TWA 0.5 mg/m3	None established	TWA 0.5 mg/m3	None established	Inhalation, ingestion, skin contact	Irritation skin, respiratory system, digestive system	Skin, eyes, respiratory system	Yellow white powder BP: 1640 C
Benzene	71-43-2	TWA 0.5 ppm STEL 2.5 ppm	Ca TWA 0.1 ppm STEL 1 ppm	TWA 1 ppm ST 5 ppm	Ca [500 ppm]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude (weakness, exhaustion); dermatitis; bone marrow depression; [potential occupational carcinogen]	Eyes, skin, respiratory system, blood, central nervous system, bone marrow	Colorless to light yellow liquid with an aromatic odor [Note: Solid below 42 °F] BP: 176°F Fl.Pt. = 12°F LEL: 1.2% UEL: 7.8% Class B Flammable liquid
Benzo[a]anthracene	56-55-3	None established [skin cancer]	None established	None established	None established	Inhalation; ingestion; skin absorption; skin and/or eye contact	Irritation eyes, skin, respiratory system, CNS; skin cancer	Skin	Pale Yellow crystal, solid BP: 438 C
Benzo[a]pyrene	50-32-8	None established [cancer]	TWA 0.1 mg/m3	TWA 0.2 mg/m3	None established	Inhalation; ingestion; skin absorption; skin and/or eye contact	POISON. This material is an experimental carcinogen, mutagen, tumorigen, neoplastigen and teratogen. It is a probable carcinogen in humans and a known human mutagen. IARC Group 2A carcinogen. It is believed to cause bladder, skin and lung cancer. Exposure to it may damage the developing fetus. May cause reproductive damage. Skin, respiratory and eye irritant or burns.	Skin, eye, bladder, lung, reproductive	Yellow crystals or powder [found in cigarette smoke, coal tar, fuel exhaust gas and in many other sources] BP: 495 C
Benzo[b]fluoranthene	205-99-2	None established [cancer]	TWA 0.1 mg/m3	TWA 0.2 mg/m3	None established	Inhalation; ingestion; skin and/or eye contact	No data were identified on the toxicity of benzo[b]fluoranthene to humans. Based on results of studies in animals, IARC concluded that benzo[b]fluoranthene is possibly carcinogenic to humans	Respiratory system, skin, bladder, kidneys	Off-white to tan powder
Benzo[k]fluoranthene	207-08-9	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, respiratory tract, gastrointestinal; fatal if swallowed, inhaled, absorbed through the skin; vomiting, nausea, diarrhea	Lungs, respiratory system	Yellow crystals BP: 480 C
Benzo(g,h,i)perylene	191-24-2	None established	None established	California permisible exposure limits for chemical contaminants (Title 8, Article 107) PEL 0.2 mg/m3	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, respiratory tract, very toxic to aquatic life with long lasting effects	Eyes, skin, respiratory system	Pale Yellow -Green Crystals BP: 550°C
Beryllium	7440-41-7 (metal)	TWA 0.00005 mg/m^3	Ca C 0.0005 mg/m^3	TWA 0.002 mg/m^3 C 0.005 mg/m^3 (30 minutes) with a maximum peak of 0.025 mg/m^3	Ca [4 mg/m^3 (as Be)]	inhalation, skin and/or eye contact	Berylliosis (chronic exposure): anorexia, weight loss, lassitude (weakness, exhaustion), chest pain, cough, clubbing of fingers, cyanosis, pulmonary insufficiency; irritation eyes; dermatitis; [potential occupational carcinogen]	Eyes, skin, respiratory system	Metal: A hard, brittle, gray-white solid. BP: 4532°F
Cadmium	7440-43-9 (metal)	TWA 0.01 mg/m^3	Ca	TWA 0.005 mg/m^3	Ca [9 mg/m^3 (as Cd)]	inhalation, ingestion	Pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia (loss of the sense of smell), emphysema, proteinuria, mild anemia; [potential occupational carcinogen]	respiratory system, kidneys, prostate, blood	Metal: Silver-white, blue-tinged lustrous, odorless solid. BP: 1409°F
Carbon Tetrachloride	56-23-5	TWA 5 ppm STEL 10 ppm	Ca ST 2 ppm (12.6 mg/m3) [60 minute]	TWA 10 ppm C 25 ppm 200 ppm (5-minute maximum peak in any 4 hours)	Ca [200 ppm]	inhalation, skin absorbtion, ingestion, skin and/or eye contact	irritation eyes, skin; central nervous system depression; nausea, vomiting; liver, kidney injury; drowsiness, dizziness, incoordination; [potential occupational carcinogen]	central nervous system, eyes, lungs, liver, kidneys, skin	Colorless liquid with a characteristic ether-like odor. BP: 170°F
Carbon Monoxide	630-08-0	TWA 25 ppm	TWA 35 ppm C 200 ppm	TWA 50 ppm	1,200 ppm	inhalation	Carboxyhemogloemia	Blood	Colorless, odorless gas

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at 580 Gerard Former Post Office Vehicle Repair Site, Bronx

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Chromium	7440-47-3	TWA 0.5 mg/m^3 (metal and Cr III compounds) TWA 0.05 mg/m^3 (water-soluble Cr VI compounds) TWA 0.01 mg/m^3 (insoluble Cr IV compounds)	TWA 0.5 mg/m^3	TWA 1 mg/m^3	250 mg/m^3 (as Cr)	inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin; lung fibrosis (histologic)	Eyes, skin, respiratory system	Blue-white to steel-gray, lustrous, brittle, hard, odorless solid. BP: 4788°F
Chrysene; Phenanthrene; Pyrene; Coal tar pitch volatiles	65996-93-2	TWA 0.2 mg/m3	Ca TWA 0.1 mg/m^3 (cyclohexane-extractable fraction)	TWA 0.2 mg/m^3 (benzene-soluble fraction)	Ca [80 mg/m^3]	Inhalation, skin and/or eye contact	Dermatitis, bronchitis, [potential occupational carcinogen]	Respiratory system, skin, bladder, kidneys	Black or dark-brown amorphous residue. Combustible Solids
Coal Tar Pitch Volatiles; Chrysene; Phenanthrene; Pyrene	65996-93-2	TWA 0.2 mg/m^3	Ca TWA 0.1 mg/m^3 (cyclohexane-extractable fraction)	TWA 0.2 mg/m^3 (benzene-soluble fraction)	Ca [80 mg/m^3]	Inhalation, skin and/or eye contact	Dermatitis, bronchitis, [potential occupational carcinogen]	respiratory system, skin, bladder, kidneys	Black or dark-brown amorphous residue. Combustible Solids
1,1-Dichloroethane	75-34-3	TWA 100 ppm	TWA 100 ppm (400 mg/m^3)	TWA 100 ppm (400 mg/m^3)	3000 ppm	inhalation, ingestion, skin and/or eye contact	Irritation skin; central nervous system depression; liver, kidney, lung damage	Skin, liver, kidneys, lungs, central nervous system	Colorless, oily liquid with a chloroform-like odor. BP: 135°F Fl.P: 2°F UEL: 11.4% LEL: 5.4%
1,2-Dichloroethane (Ethylene Dichloride)	107-06-2	TWA 10 ppm	Ca TWA 1 ppm (4 mg/m^3) STEL 2 ppm (8 mg/m^3)	TWA 50 ppm C 100 ppm 200 ppm [5-minute maximum peak in any 3 hours]	Ca [50 ppm]	inhalation, ingestion, skin absorption, skin and/or eye contact	Irritation eyes, corneal opacity; central nervous system depression; nausea, vomiting; dermatitis; liver, kidney, cardiovascular system damage; [potential occupational carcinogen]	Eyes, skin, kidneys, liver, central nervous system, cardiovascular system	Colorless liquid with a pleasant, chloroform-like odor. [Note: Decomposes slowly, becomes acidic & darkens in color.] BP: 182°F Fl.P: 56°F UEL: 16% LEL: 6.2% Class IB Flammable Liquid
1,2-Dichloroethene (total)	540-59-0	TWA 200 ppm	TWA 200 ppm (790 mg/m^3)	TWA 200 ppm (790 mg/m^3)	1000 ppm	inhalation, ingestion, skin and/or eye contact	Irritation eyes, respiratory system; central nervous system depression	Eyes, respiratory system, central nervous system	Colorless liquid (usually a mixture of the cis & trans isomers) with a slightly acrid, chloroform-like odor BP: 118-140°F Fl.P: 36-39°F UEL: 12.8% LEL: 5.6% Class IB Flammable Liquid
cis-1,2-Dichloroethene	156-59-2	TWA 200 ppm	TWA 200 ppm	TWA 200 ppm	None established	inhalation, skin absorption, ingestion	Harmful if swallowed, inhaled, or absorbed through skin. Irritant. Narcotic. Suspected carcinogen	Skin	Colorless liquid BP: 60 C Fl.P: 4 C UEL: 12.8% LEL: 9.7 %
trans-1,2-Dichloroethene	156-60-5	TWA 200 ppm	None established	TWA 200 ppm STEL 250 ppm (skin)	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Narcotic. Irritation eyes, skin, respiratory tract, mucous membrane; CNS depression.	Respiratory tract, mucous membrane, eyes, skin, CNS	Colorless liquid with a fruity pleasant odor BP: 48°C Fl.P 6C UEL: 12.8% LEL: 9.7%
Dibenzo[a,h]anthracene	53-70-3	None established	None established	None established	None established	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin	Eyes, skin; skin photosensitization.	Colorless crystalline powder BP: 524°C
Dibenzofuran	132-64-9								
Diesel Fuel #2	68476-34-6	TWA 100 mg/m^3; Skin notation	None established	Designated as an OSHA Select Carcinogen	None established	ingestion, skin and/or eye contact	Kidney damage; potential lung damage; suspected carcinogen; irritation of eyes, skin, respiratory tract; dizziness, headache, nausea; chemical pneumonitis (from aspiration of liquid); dry, red skin; irritant contact dermatitis; eye redness, pain.	Eyes, skin, kidneys	Clear yellow brown combustible liquid; floats on water; distinct diesel petroleum hydrocarbon odor. BP: 356-716°F Fl.P: 154.4-165.2°F LEL: 0.6% UEL: 7.0%
Ethylbenzene	100-41-4	TWA 20 ppm	TWA 100 ppm (435 mg/m^3) STEL 125 ppm (545 mg/m^3)	TWA 100 ppm (435 mg/m^3)	800 ppm [10%LEL]	inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	Eyes, skin, respiratory system, central nervous system	Colorless liquid with an aromatic odor. BP: 277°F Fl.P: 55°F UEL: 6.7% LEL: 0.8% Class IB Flammable Liquid
Fluoranthene	206-44-0	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; possible burns; heart and liver injury, pulmonary edema, respiratory arrest, gastrointestinal disturbances.	Heart, liver, lungs.	Yellow needles.

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at 580 Gerard Former Post Office Vehicle Repair Site, Bronx

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Fuel Oil #2	68476-30-2	TWA 100 mg/m3; Skin notation	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; CNS effects; nausea, vomiting, headache, cramping, dizziness, weakness, loss of coordination,, drowsiness; kidney, liver damage	Eyes, skin, CNS	Clear or yellow to red oily liquid, kerosene-like odor BP: 347 - 689 °F UEL:5-6% LEL: 0.7-1.0%
Gasoline	8006-61-9	TWA 300 ppm STEL 500 ppm	Carcinogen	None established	Ca [IDLH value has not been determined]	Skin absorption; inhalation; ingestion; skin and/or eye contact	Eyes and skin irritation, mucous membrane; dermatitis; headache; listlessness, blurred vision, dizziness, slurred speech, confusion, convulsions; chemical pneumonitis; possible liver, kidney damage [Potential occupational carcinogen]	Eyes, skin, respiratory system, CNS, Liver, Kidneys	Clear liquid with a characteristic odor, aromatic Fl.Pt. = -45°F LEL = 1.4% UEL = 7.6% Class 1B Flammable Liquid
Hydrogen Sulfide	7783-06-4	TWA 1 ppm STEL 5 ppm	C 10 ppm (15 mg/m^3) [10-minute]	C 20 ppm 50 ppm [10-minute maximum peak]	100 ppm	inhalation, skin and/or eye contact	Irritation eyes, respiratory system; apnea, coma, convulsions; conjunctivitis, eye pain, lacrimation (discharge of tears), photophobia (abnormal visual intolerance to light), corneal vesiculation; dizziness, headache, lassitude (weakness, exhaustion), irritability, insomnia; gastrointestinal disturbance; liquid: frostbite	Eyes, respiratory system, central nervous system	Colorless gas with a strong odor of rotten eggs. BP: -77°F UEL: 44.0% LEL: 4.0% Flammable Gas
Indeno[1,2,3-cd]pyrene	193-39-5	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; possible human carcinogen (skin); weakness; affect liver, lung tissue, renal tissue; impairment of blood forming tissue	Skin	Fluorescent green-yellow crystalline solid BP: 536 C
Lead (inorganic)	7439-92-1	TWA 0.05 mg/m^3	TWA (8-hour) 0.050 mg/m^3	TWA 0.050 mg/m^3	100 mg/m^3 (as Pb)	inhalation, ingestion, skin and/or eye contact	Lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation eyes; hypertension	Eyes, gastrointestinal tract, central nervous system, kidneys, blood, gingival tissue	A heavy, ductile, soft, gray solid. BP: 3164°F Noncombustible Solid in bulk form
Mercury (organo) alkyl compounds (as Hg)	7439-97-6	TWA 0.01 mg/m^3 STEL 0.03 mg/m^3 [skin]	TWA 0.01 mg/m^3 STEL 0.03 mg/m^3 [skin]	TWA 0.01 mg/m^3 C 0.04 mg/m^3	2 mg/m^3 (as Hg)	inhalation, skin absorption, ingestion, skin and/or eye contact	Paresthesia; ataxia, dysarthria; vision, hearing disturbance; spasticity, jerking limbs; dizziness; salivation; lacrimation (discharge of tears); nausea, vomiting, diarrhea, constipation; skin burns; emotional disturbance; kidney injury; possible teratogenic effects	Eyes, skin, central nervous system, peripheral nervous system, kidneys	Appearance and odor vary depending upon the specific (organo) alkyl mercury compound
Mercury compounds [except (organo) alkyls] (as Hg) Mercury	7439-97-6	TWA 0.025 mg/m^3 (elemental and inorganic forms)	Hg Vapor: TWA 0.05 mg/m^3 [skin] Other: C 0.1 mg/m3 [skin]	TWA 0.1 mg/m^3	10 mg/m^3 (as Hg)	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headache, lassitude (weakness, exhaustion); stomatitis, salivation; gastrointestinal disturbance, anorexia, weight loss; proteinuria	Eyes, skin, respiratory system, central nervous system, kidneys	Metal: Silver-white, heavy, odorless liquid. [Note: "Other" Hg compounds include all inorganic & aryl Hg compounds except (organo) alkyls.] BP: 674°F
Methylene Chloride (Dichloromethane)	75-09-2	TWA 50 ppm, A3 - suspected human carcinogen	Ca	TWA 25 ppm STEL 125 ppm	Ca [2300 ppm]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; lassitude (weakness, exhaustion), drowsiness, dizziness; numbness, tingle limbs; nausea; [potential occupational carcinogen]	Eyes, skin, cardiovascular system, central nervous system	Colorless liquid with a chloroform-like odor BP: 104°F UEL: 23% LEL: 13%
Naphtha (Rubber Solvent)	8030-30-6	None established	TWA 100 ppm (400 mg/m^3)	TWA 100 ppm (400 mg/m^3)	1000 ppm [10%LEL]	inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, nose; dizziness, drowsiness; dermatitis; in animals: liver, kidney damage	Eyes, skin, respiratory system, central nervous system, liver, kidneys	Reddish-brown, mobile liquid with an aromatic odor BP: 320-428°F Fl.P: 100-109°F Class II Combustible Liquid
Naphthalene	91-20-3	TWA 10 ppm [skin]	TWA 10 ppm (50 mg/m^3) STEL 15 ppm (75 mg/m^3)	TWA 10 ppm (50 mg/m^3)	250 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage	Eyes, skin, blood, liver, kidneys, central nervous system	Colorless to brown solid with an odor of mothballs. BP: 424°F Fl.P: 174°F UEL: 5.9% LEL: 0.9%
Petroleum hydrocarbons(Petroleum distillates)	8002-05-9	None established	TWA 350 mg/m^3 C 1800 mg/m^3 [15 min]	TWA 500 ppm (2000 mg/m^3)	1,100 [10% LEL]	Inhalation; ingestion; skin and/or eye contact	Irritation eyes, skin, nose, throat; dizziness, drowsiness, headache, nausea; dried/cracked skin; chemical pneumonitis	CNS, eyes, respiratory system, skin	Colorless liquid with a gasoline or kerosene-like odor BP: 86-460°F Fl. Pt = -40 to -86°F UEL: 5.9% LEL: 1.1% Flammable liquid
Polychlorinated Biphenyls (PCBs) (Chlorodiphenyl (42% Chlorine))	53469-21-9	TWA 1 mg/m^3	Ca TWA 0.001 mg/m^3	0.5 mg/m^3	5 ppm	Dermal; inhalation; ingestion; skin and/or eye contact	Irritation eyes; chloracne; liver damage; reproductive effects; [potential occupational carcinogen]	Eyes, skin, liver, respiratory system	Colorless to light-colored, viscous liquid, hydrocarbon odor, BP: 617 - 734°F, non-flammable, LEL: NA, UEL: NA
Selenium	7782-49-2	TWA 0.2 mg/m^3	TWA 0.2 mg/m^3	TWA 0.2 mg/m^3	1 mg/m^3 (as Se)	inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat; visual disturbance; headache; chills, fever; dyspnea (breathing difficulty), bronchitis; metallic taste, garlic breath, gastrointestinal disturbance; dermatitis; eye, skin burns; in animals: anemia; liver necrosis, cirrhosis; kidney, spleen damage	Eyes, skin, respiratory system, liver, kidneys, blood, spleen	Amorphous or crystalline, red to gray solid. [Note: Occurs as an impurity in most sulfide ores.] BP: 1265°F

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at 580 Gerard Former Post Office Vehicle Repair Site, Bronx

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Silver	7440-22-4 (metal)	TWA 0.1 mg/m^3 (metal, dust, fume) TWA 0.01 mg/m^3 (Soluble compounds, as Ag)	TWA 0.01 mg/m^3	TWA 0.01 mg/m^3	10 mg/m^3 (as Ag)	inhalation, ingestion, skin and/or eye contact	Blue-gray eyes, nasal septum, throat, skin; irritation, ulceration skin; gastrointestinal disturbance	Nasal septum, skin, eyes	Metal: White, lustrous solid BP: 3632°F
Tetrachloroethene	127-18-4	TWA 25 ppm STEL 100 ppm listed as A3, animal carcinogen	Ca Minimize workplace exposure concentrations	TWA 100 ppm C 200 ppm (for 5 minutes in any 3-hour period), with a maximum peak of 300 ppm	Ca [150 ppm]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]	Eyes, skin, respiratory system, liver, kidneys, central nervous system	Colorless liquid with a mild, chloroform-like odor. BP: 250°F Noncombustible Liquid
Toluene	108-88-3	TWA 20 ppm	TWA 100 ppm (375 mg/m^3) STEL 150 ppm (560 mg/m^3)	TWA 200 ppm C 300 ppm 500 ppm (10-minute maximum peak)	500 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, nose; lassitude (weakness, exhaustion), confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, insomnia; paresthesia; dermatitis; liver, kidney damage	Eyes, skin, respiratory system, central nervous system, liver, kidneys	Colorless liquid with a sweet, pungent, benzene-like odor. BP: 232°F Fl.P: 40°F UEL: 7.1% LEL: 1.1% Class IB Flammable Liquid
1,1,1-Trichloroethane (Methyl Chloroform)	71-55-6	TWA 350 ppm STEL 450 ppm	C 350 ppm (1900 mg/m^3) [15-minute]	TWA 350 ppm (1900 mg/m^3)	700 ppm	inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin; headache, lassitude (weakness, exhaustion), central nervous system depression, poor equilibrium; dermatitis; cardiac arrhythmias; liver damage	Eyes, skin, central nervous system, cardiovascular system, liver	Colorless liquid with a mild, chloroform-like odor. BP: 165°F UEL: 12.5% LEL: 7.5%
Trichloroethene	79-01-6	TWA 10 ppm STEL 25 ppm	Ca	TWA 100 ppm C 200 ppm 300 ppm (5-minute maximum peak in any 2 hours)	Ca [1000 ppm]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness, tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver injury; [potential occupational carcinogen]	Eyes, skin, respiratory system, heart, liver, kidneys, central nervous system	Colorless liquid (unless dyed blue) with a chloroform-like odor. BP: 189°F UEL(77°F): 10.5% LEL(77°F): 8%
Vinyl Chloride	75-01-4	TWA 1 ppm	Carcinogen	TWA 1 ppm C 5 ppm [15-minute]	Ca [IDLH value has not been determined]	inhalation, skin, and/or eye contact (liquid)	Lassitude (weakness, exhaustion); abdominal pain, gastrointestinal bleeding; enlarged liver; pallor or cyanosis of extremities; liquid: frostbite; [potential occupational carcinogen]	Liver, central nervous system, blood, respiratory system, lymphatic system	Colorless gas or liquid (below 7°F) with a pleasant odor at high concentrations. BP: 7°F UEL: 33.0% LEL: 3.6% Flammable Gas
Xylene (m, o & p isomers)	108-38-3, 95-47-6, 106-42-3	TWA 100 ppm STEL 150 ppm	TWA 100 ppm (435 mg/m^3)	TWA 100 ppm (435 mg/m^3)	900 ppm	Skin absorption, inhalation, ingestion, skin, and/or eye contact	Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis	Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys	Colorless liquid with an aromatic odor BP: 282°F, 292°F, 281°F Fl. Pt. 82°F, 90°F, 81°F LEL: 1.1%, 0.9%, 1.1% UEL: 7.0%, 6.7%, 7.0% Class C Flammable Liquid
Zinc Oxide	1314-13-2	TWA 2 mg/m3 STEL 10 mg/m^3	None established	TWA 10 mg/m3 (for zinc oxide fume)	None established	skin and/or eye contact, inhalation, ingestion	Irritation eyes, skin, respiratory tract; gastrointestinal disturbances	Eyes, skin, respiratory system,	Bluish gray solid BP: 1664.6°F Flammable

References

U.S. Department of Labor. 1990. OSHA Regulated Hazardous Substances, industrial Exposure and Control Technologies Government Institutes, Inc.
Hawley's Condensed Chemical Dictionary, Sax, N. Van Nostrand and Reinhold Company, 11th Edition, 1987.
Proctor, N.H., J.P. Hughes and M.L. Fischman, 1989. Chemical Hazards of the Workplace. Van Nostrand Reinhold. New York.
Sax, N.I. and R.J. Lewis. 1989. Dangerous Properties of Industrial Materials. 7th Edition. Van Nostrand Reinhold. New York.
2017 TLVs® and BEIs®, American Conference of Industrial Hygienists

Abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists.
BP – boiling point at 1 atmosphere, °F
C – Ceiling, is a concentration that should not be exceeded during and part of the working exposure.
CAS# - Chemical Abstracts Service registry number which is unique for each chemical.
Ft Pt. – Flash point
IDLH - Immediately Dangerous to Life and Health concentrations represent the maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without a respirator and without experiencing any escape-impairing or irreversible health effects.
LEL – Lower explosive (flammable) limit in air, % by volume (at room temperature)
mg/m^3 – Milligrams of substance per cubic meter of air
NIOSH - National Institute for Occupational Safety and Health.
OSHA – Occupational Safety and Health Administration
PEL - OSHA Permissible Exposure Limit (usually) a time weighted average concentration that must not be exceeded during any 8 hour work shift of a 40 hr work week.
ppm – parts per million
REL – NIOSH Recommended Limit indicated a time weighted average concentration that must not be exceeded during any 10 hour work shift of a 40 hr work week
SG - Specific Gravity
STEL – Short-term exposure limit (ST)
TLV - ACGIH Threshold Limit Values (usually 8 hour time weighted average concentrations).
TWA – 8-hour, time-weighted average
UEL – Upper explosive (flammable) limit in air, % by volume (at room temperature)
VP - Vapor Pressure

FIGURES

1. Site Location Map
2. Site Plan
3. Hospital and Urgent Care Route Map

QUADRANGLE LOCATION

N

1,000 0 1,000'

Title:

SITE LOCATION MAP

580-610 GERARD AVENUE
BRONX, NY

Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: E.T.	Date: 10/12/21
Prepared by: M.S.R.	Scale: AS SHOWN
Project Mgr: J.L.	Project: 3523.0001Y000
File: 3523.0001Y107.1.mxd	

FIGURE 1

V:\GIS\PROJECTS\3523\0001Y\107\3523.0001Y107.1.MXD

LEGEND

SITE BOUNDARY

EMERGENCY MUSTER AREA

N

75 0 75'

Title:

SITE PLAN WITH EMERGENCY MUSTER AREA

580-610 GERARD AVENUE
BRONX, NY

Prepared for:

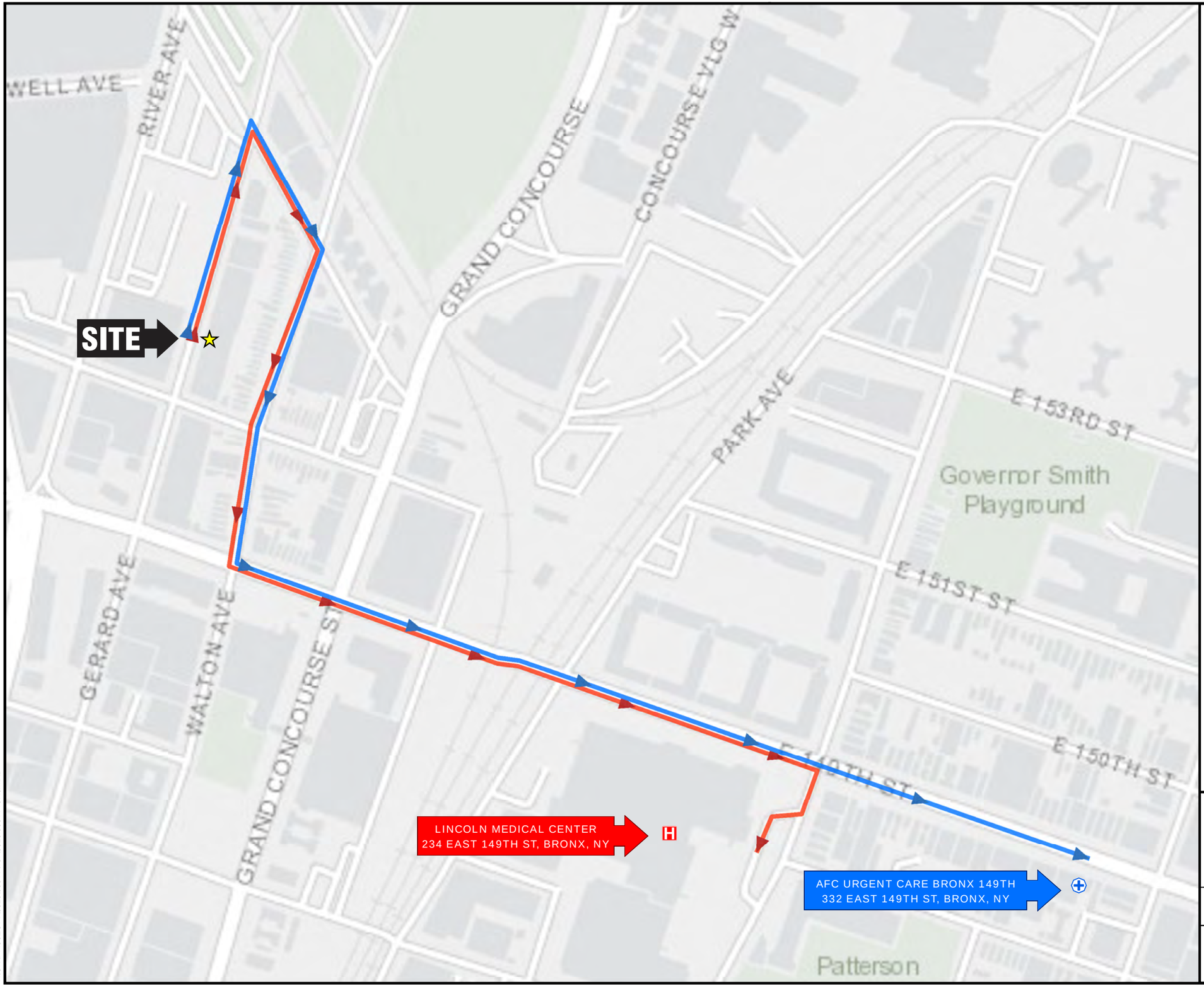
SB GERARD AVENUE LLC

ROUX

Compiled by: E.T.	Date: 10/12/21
Prepared by: M.S.R.	Scale: AS SHOWN
Project Mgr: J.L.	Project: 3523.0001Y000
File: 3523.0001Y107.2.mxd	

FIGURE 2

V:\GIS\PROJECTS\3523\0001Y\107\3523.0001Y107.2.MXD



N

DIRECTIONS TO HOSPITAL

1. HEAD NORTH ON GERARD AVE TOWARD E 151ST ST
2. TURN RIGHT ONTO E 151ST ST
3. TURN RIGHT AT THE 1ST CROSS STREET ONTO WALTON AVE
4. TURN LEFT ONTO E 149TH ST
5. TURN RIGHT ONTO MORRIS AVE & DESTINATION WILL BE ON RIGHT

DIRECTIONS TO URGENT CARE

1. HEAD NORTH ON GERARD AVENUE TOWARDS EAST 151ST STREET.
2. TURN RIGHT ONTO EAST 151ST STREET.
3. TURN RIGHT AT THE 1ST CROSS STREET ONTO WALTON AVENUE.
4. TURN LEFT ONTO EAST 149TH STREET AND THE DESTINATION WILL BE AHEAD ON THE RIGHT

200 0 200'

Title:

ROUTES TO URGENT CARE AND HOPSITAL

580-610 GERARD AVENUE
BRONX, NY

Prepared for:

SB GERARD AVENUE LLC

ROUX

Compiled by: E.T.	Date: 10/12/21	FIGURE
Prepared by: M.S.R.	Scale: AS SHOWN	3
Project Mgr: J.L.	Project: 3523.0001Y000	
File: 3523.0001Y107.3.mxd		

V:\GIS\PROJECTS\3523\0001Y107\3523.0001Y107.3.MXD

APPENDICES

A. Job Safety Analysis (JSA) Forms
B. SDSs for Chemicals Used
C. COVID-19 Interim Health and Safety Guidance
D. Personal Protective Equipment (PPE) Management Program
E. Subsurface Utility Clearance Management Program
F. Heavy Equipment Exclusion Zone Policy
G. Incident Investigation and Reporting Management Program

APPENDIX A

Job Safety Analysis (JSA) Forms

JOB SAFETY ANALYSIS	Ctrl. No. CVD-19	DATE: 06/11/2021	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
Generic	**Fieldwork**	**Working in Areas Affected by Coronavirus**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Kristina DeLuca	Health and Safety Specialist	Brian Hobbs	CHSD

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES – Leather/cut-resistant in field and nitrile as needed
☒ HARD HAT – In field	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	
☐ LIFELINE / BODY HARNESS	☐ HEARING PROTECTION	☒ PPE CLOTHING – High visibility vest in field	☐ OTHER
☒ SAFETY GLASSES – In field	☒ SAFETY SHOES – Steel/composite toe in fie		

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Cloth face covering, nitrile gloves, hand soap, water source, hand sanitizer, disinfectant spray and disinfectant wipes.

Commitment to Safety – All personnel onsite will actively participate in SPSA performance by verbalizing SPSAs throughout the day.

SOCIAL DISTANCING: Maintain 6' of distance between yourself and all other people at all times. If you do not believe the scope of work can be conducted while maintaining this distance, contact your Project Manager immediately.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Project Preplanning	N/A	• Review and follow COVID-19 CDC, Roux, Client and local orders/protocols. • Ensure all workers are fit for duty - anyone feeling sick should remain at home even if symptoms do not align with COVID-19. If a worker has been in contact with someone potentially positive or positive for COVID-19, contact your Office Manager. • Determine PPE needs and ensure adequate supply of disinfectant wipes/spray, soap and water or hand sanitizer at Site. Due to high demands and limited supply, plan ahead. • Use the minimum number of employees necessary to safely complete the work.
2. Mobilization	**Exposure:** Becoming infected or infecting co-workers	**Personal/Rental/Roux Owned Vehicle** • Do not carpool, unless all individuals are fully vaccinated. • Verify workers/other people are not approaching vehicle prior to exiting the vehicle. Maintain 6' of distance from general public, as appropriate. **Public Transportation** • Public transit should not be used unless absolutely necessary. Consider renting a car rather than taking public transit. If public transit is required, wear appropriate face covering/mask and apply social distancing (6 ft). Wash hands or use hand sanitizer immediately after. **Hotel Stay (Refer to COVID-19 H&S Guidance for more info)** • If a hotel stay is deemed necessary for the given field work, ensure that you clean your room upon initial arrival. • Place the "Do Not Disturb" placard on the room while away and limit housekeeping services to the extent feasible during your stay to minimize the reintroduction and spread of the virus from others.. Wash hands or use hand sanitizer often.
3. Tailgate Meeting	**Exposure:** Becoming infected or infecting co-workers	• Perform outside or indoors in areas with ample ventilation. • If unvaccinated, maintain at least a 6+ ft distance between you and others. • Discuss primary infection prevention measures listed below. • Discuss COVID-19 symptoms with coworkers and subcontractors to ensure fitness for duty. Anyone exhibiting signs or symptoms should be instructed to leave the Site, contact your Project Manager.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards, energy source; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

4. Site Activities	**Exposure:** Becoming infected or i nfecting co-workers	• Coordinate field activities at the beginning of the day (i.e. Tailgate meeting) to minimize time spent in crowded spaces or overlap while completing job tasks. • Don cloth face coverings as appropriate. • Apply social distancing (6+ ft) when interacting with others if unvaccinated. If anyone comes within 6 ft of you while conducting work and your work prevents you from moving away, politely ask them to move back. If others are unable to move from your space, stop work and leave area. • Minimize shaking hands or touching others. • Minimize sharing of equipment or other items with co-workers and subcontractors unless wearing appropriate PPE (e.g. nitrile gloves), as appropriate. • If anyone is experiencing COVID-19 signs or symptoms in your vicinity, stop work and leave the area. • Do not work in areas with limited ventilation with others. • Cover your mouth and nose with tissue or paper towel or with your elbow when coughing or sneezing and wash hands or use hand sanitizer immediately after. If sick contact SHSO/PM and leave Site immediately. • Clean work surfaces/areas with approved cleaners you're responsible for (ex: desk, office doorknob, computer, etc.) at least daily. • Avoid public spaces and going out to eat by bringing your own lunch to the Site. If performing work in high density urban areas, it is recommended all food must be consumed at or in your vehicle or within designated work trailer. Wash hands or use hand sanitizer before eating and immediately after.

Primary Infection Prevention Measures

- Wash your hands often with soap and water for at least 20 seconds.
  - If soap and water are not available, use an alcohol-based sanitizer that contains at least 60% alcohol. Key times to wash hands include after blowing your nose, coughing or sneezing, after using the restroom, and before eating or preparing food.
- Do not touch your eyes, face, nose and mouth with unwashed hands.
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow. Throw potentially contaminated items (e.g. used tissues) in the trash.
- Avoid close contact/secondary contact with people and potentially contaminated surfaces.
  - Apply appropriate social distance (6+ feet).
  - Minimize handshaking/touching others and use caution when accessing public spaces.
- Clean frequently touched surfaces daily. Commonly touched items can include but are not limited to tables, doorknobs, light switches, countertops, handles, desks, phones, keyboard, toilets, sinks and field equipment. If surfaces are dirty, they should be cleaned with soap and water prior to disinfection. If surface cannot be cleaned/disinfected, then wash hands or use sanitizer as soon as possible.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-006	DATE 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY:	WORK TYPE:	WORK ACTIVITY (Description):	
Generic	**Drilling**	**Direct Push Soil Borings / Well Installation**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
Timothy Zei	Project Hydrogeologist	Raymond Olson	Office Health & Safety Manager
		Brian Hobbs	Corporate Health & Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD ☒ HEARING PROTECTION: (as needed) ☒ SAFETY SHOES: Composite-toe or steel toe boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing, Long Sleeve Shirt	☒ GLOVES: Leather, Nitrile and cut resistant ☒ OTHER: Insect Repellant, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Geoprobe or Truck-Mounted Direct Push Drill Rig, Hand Tools, Photoionization Detector, Multi-Gas Meter (or equivalent), Macrocore liners, Liner Opening Tool, 20 lb. Type ABC Fire Extinguisher, 42" Cones & Flags, "Work Area" Signs, Water

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

"SHOW ME YOUR HANDS"
Driller and helper should show that hands are clear from controls and moving parts

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilization of drilling rig (ensure the Subsurface Clearance Protocol and Drill Rig Checklist are completed)	**1a. CONTACT:** Equipment/property damage.	1a. The drill rig's tower/derrick will be lowered and secured prior to mobilization. 1a. A spotter should be utilized while moving the drill rig. If personnel move into the path of the drill rig, the drill rig will be stopped until the path is again clear. Use a spotter for all required backing operations. 1a. Set-up the work area and position equipment in a manner that eliminates or reduces the need for backing of support trucks and trailers. 1a. When backing up truck rig with an attached trailer use a second spotter if there is tight clearance simultaneously on multiple sides of the equipment or if turning angles limit driver visibility. 1a. Inspect the driving path for uneven terrain. Level or avoid if needed. 1a. Drill rig should have a minimum **exclusion zone which encompasses its tip radius** for non-essential personnel (i.e., driller helper, geologist) when the rig is moving/ in operation.
	1b. FALL: Slip/trip/fall hazards.	1b. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 1b. Do not climb over stored materials/equipment; walk around. Practice good housekeeping. 1b. Use established pathways and walk on stable, secure ground.
	1c. CONTACT: Crushing from roll-over.	1c Geoprobe should cross all hills/obstructions head on with the mast down to reduce risk of roll-over.
2. Raising tower/derrick of drill rig	**2a. CONTACT:** Overhead hazards.	2a. Prior to raising the tower/derrick, the area above the drilling rig will be inspected for wires, tree limbs, piping, or other structures, that could come in contact with the rig's tower and/or drilling rods or tools. 2a. Maintain a safe distance of 10' from overhead structures.
	2b. CONTACT: Pinch Points/Amputation Points when raising the rig and instability of rig	2b. Inspect the equipment prior to use and avoid pinch/amputation points. 2b. Lower outriggers to ensure stability prior to raising rig tower/derrick. 2b. If the rig needs to be mounted, be sure to use three points of contact.
3. Advancement of drilling equipment and well installation	**3a. CONTACT:** Flying debris	3a. Be aware of and avoid potential lines of fire and wear required PPE such as eye, ear, and hand protection.
	3b. EXPOSURE: Noise and dust.	3b. Wet borehole area with sprayer to minimize dust. 3b. Stand upwind and keep body away from rig. 3b. Dust mask should be worn if conditions warrant. 3b. Wear hearing protection when the drill rig is in operation.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
3. Advancement of drilling equipment and well installation (Continued)	**3a. CONTACT:** Flying debris **3b. EXPOSURE:** Noise and dust. **3c. FALL:** Slip/trip/fall hazards. **3d. CAUGHT:** Limb/extremity pinching; abrasion/crushing. **3e. CONTACT:** Equipment imbalance during advancement of drill equipment. **3f. EXPOSURE:** Inhalation of contamination/vapors. **3g. EXERTION:** Potential for muscle strain/injury while lifting and installing well casings, lifting sand bags, and/or lifting rods.	3c. Contain drill cuttings and drilling water to prevent fall hazards from developing in work area. 3c. See 1b. 3d. Ensure all Emergency Safety Stop buttons function properly. 3d. Always wear leather gloves when making connections and using hand tools; wear cut-resistant (i.e., Kevlar) gloves when handling cutting tools. 3d. Inspect the equipment prior to use for potential pinch/amputation points. Keep hands away from pinch/amputation points and use of tools is preferable compared to fingers and hands. 3d. Inspect drill head for worn surface or missing teeth; replace if damaged or blunt. 3d. Ensure all jewelry is removed, loose clothing is secured, and PPE is secured close to the body. 3d. All non-essential personnel should stay away from the immediate work area; position body out of the line-of-fire of equipment. 3d. Drillers and helpers will understand and use the "Show Me Your Hands" Policy. 3d. Spinning rods/casing have an **exclusion zone of tip radius** while in operation. 3e. Drillers will advance the borehole with caution to avoid causing the rig to become imbalanced and/or tip. 3e. The blocking and leveling devices used to secure the rig will be inspected by drillers and Roux personnel regularly to see if shifting has occurred. 3e. In addition, personnel and equipment that are non-essential to the advancement of the borehole will be positioned away from the rig at a distance that is at least as far as the boom is high (**minimum exclusion zone**). 3f. Monitor ambient air for dangerous conditions using a calibrated photoionization detector (PID) to periodically monitor the breathing zone of the work area. 3f. If a reading of >5ppm is recorded, the Roux field personnel must temporarily cease work, instruct all Site personnel to step away from the area of elevated readings and inform the Roux PM of the condition. The Roux PM will then recommend additional precautions in accordance with the site specific health and safety plan. 3f. Use a multi-gas meter to monitor ambient air for dangerous conditions (i.e. unsafe levels of carbon monoxide when drilling indoors or the presence of explosive vapors). 3g. Keep back straight and bend at the knees. 3g. Utilize team lifting for objects over 50lbs. 3g. Use mechanical lifting device for odd shaped objects.
4. Remove sample liner.	**4a. EXERTION:** Potential for muscle strain/injury while removing liner from probe rod. **4b. CONTACT:** Pinch points and cuts **4c. EXPOSURE:** Inhalation and/or dermal contact with contaminants.	4a Utilize team lifting for objects over 50lbs. 4a. Use hydraulic liner extruder if available. 4b. Place liner on sturdy surface when opening. 4b. Don cut-resistant gloves and use appropriate liner cutter when opening liners. 4b. Always cut away from the body. 4c. Wear chemical-resistant disposable gloves when handling liners. 4c. See 3e.
5. Decontaminate equipment.	**5a. EXPOSURE/CONTACT**: To contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated groundwater, vapors). **5b. EXPOSURE:** To chemicals in cleaning solution including ammonia.	5a. Wear chemical-resistant disposable gloves and safety glasses. 5a. Contain decontamination water so that it does not spill. 5a. Use an absorbent pad to clean spills, if necessary. 5a. Spray equipment from side angle, not straight on, to avoid backsplash. 5a. See 3b. 5b. See 4a. Review SDS to ensure appropriate precautions are taken and understood.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-009	DATE: 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 1
JSA TYPE CATEGORY **Generic**	WORK TYPE **O&M**	WORK ACTIVITY (Description) **Movement of 55-Gallon Drums/Drum Handling with Mobile Carrier**		

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Michael Sarni	Technician	Brian Hobbs	Corporate Health & Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES: Cut-resistant gloves
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☐ OTHER:
☐ LIFELINE / BODY HARNESS	☐ HEARING PROTECTION	☒ PPE CLOTHING: Fluorescent long sleeve shirt or long sleeve shirt and reflective safety vest.	
☒ SAFETY GLASSES	☒ SAFETY SHOES: Steel or composite toe		

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Mobile Drum Carrier, safety cones, and caution tape

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment (i.e. forklift) and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Preparing for and Inspection of Drum	**1a. FALL:** Tripping/falling due to uneven surface. Loose debris/garbage in work area.	1a. Clear area of loose garbage and debris. Inspect 55-gal drums for proper condition, labeling, check drum ring and bolts for tightness, inspect mobile drum carrier. 1a. Do a Test Lift to get a general sense of the weight of the drum. 1a. Inspect and use established pathways to avoid uneven terrain, weather-related hazards (i.e., debris, puddles, ice, etc.), and other obstructions. 1a. Secure work area and coordinate and communicate the planned work activities with other personnel working in the area. 1a. Delineate work area with 42” safety cones.
	1b. CONTACT/EXPOSURE: Drums could potentially be damaged or contain hazardous material. Mobile drum carrier could potentially be in poor working condition causing malfunctioning during operation.	1b. Prior to inspecting drums don cut-resistant gloves. If drum is not properly labeled, do not open and cease all drum transport activities. Immediately contact project manager and inform him/her of drum situation. 1b. Do not continue drum transport activities until further actions are determined by the project manager. 1b. If the drum is properly labeled, but leaking, improperly sealed or in poor condition, place drum in an over-pack drum. 1b. Inspect mobile drum carrier to ensure its overall integrity. Look for rust marks or potential weak points where the drum carrier could malfunction. Inspect the wheels to ensure that they easily turn and nothing is impeding their movement.
	1c. EXERTION/CAUGHT: Potential pinching/exertion hazards while securing ring/ tightening bolts	1c. Keep back straight and knees slightly bent while securing drum ring/tightening bolt. Wear cut-resistant gloves.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift." Avoid general statements such as, "be careful."

2. Position drum clamp tightly in between drum ribs, securing drum clamp to drum with chain	**2a. CAUGHT:** Pinching fingers between drum clamp and handle/chain.	2a. Attach drum clamp with chain and tighten until snug. Do not place hands between drum clamp and drum as the chain is tightened; wear cut resistant gloves. Keep face away from drum when handling in case of escaping vapors.
Assess **[1]JOB STEPS**	**Analyze** **[2]POTENTIAL HAZARDS**	**Act** **[3]CRITICAL ACTIONS**
3. Disengage safety latches on handle, pull handle down until drum is lifted off ground and safety latches are reengaged; slightly suspending drum off the ground	**3a. EXERTION/ CONTACT:** Potential muscle strain associated with lifting/engaging drum/handle. Drum could shift/slip downward and crush toes.	3a. Ascertain whether the drum is overweight; if it is, then two people are needed to lower handle while drum is secured with clamp so that safety latches can be engaged. Keep body out of the line of fire of the handle (do not position head above handle) as it is being pushed down. Do not allow feet/toes to be positioned under the drum as it is being lifted; wear steel/composite toe boots.
	3b. CAUGHT: Fingers could be pinched while engaging/disengaging safety latches on handle	3b. Wear cut-resistant gloves while disengaging/reengaging safety latches. 3b. Avoid placing hands in pinch points.
4. Transport drums to designated location and disengage drum clamp (repeat Step 3 in reverse order)	**4a. FALL:** Tripping/ falling due to obstructions and uneven terrain. Potential for drum to fall during transport.	4a. Ensure transport path is free of potential obstructions that may cause the drum/carrier to become unstable. Position drum clamp between the ribs on the drum to prevent possible slipping.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.

[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy source – electricity, pressure, compression/tension.

[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift." Avoid general statements such as, "be careful."

JOB SAFETY ANALYSIS	Ctrl. No. GEN-010	DATE 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
Generic	**Surveying**	**Elevation Surveying**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Mark M Emmons	Project Engineer	Brian Hobbs	Corporate Health & Safety Manager
Bjorn Wespestad	Senior Engineer		
William Hansen	Senior Engineer		

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES: Cut-resistant or leather
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☒ OTHER: Long sleeve Shirt
☐ LIFELINE / BODY HARNESS	☐ HEARING PROTECTION	☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing	
☒ SAFETY GLASSES	☒ SAFETY SHOES: Steel-toe boots		

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Surveying equipment (i.e., leveling rod/measuring ruler, tripod and autolevel).

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Check in with Site manager/ property owner.	**1a. CONTACT/EXPOSURE/FALL:** Lack of communication could result in H&S incident.	1a. Inform Site personnel of work scope, timeline and location(s). 1a. Inquire about other activities taking place at the Site. 1a. If applicable, obtain General Work permit for the day.
2. Locate surveying position for instrument and rod and set-up work area	**2a. FALL:** Slip/trip hazards	2a. Inspect area for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.) and obstructions prior to setting up at the survey location. Keep eyes engaged with walking surface while in movement. Remember "Walking is Working." 2a. Conduct housekeeping and maintain clear paths to walk in and remove debris as required.
	2b. CONTACT: Traffic (surveying locations could potentially be in parking areas and sidewalks)	2b. Be aware of oncoming traffic. Utilize a flagman / spotter for locations in streets or high-traffic areas. 2b. Place 42 inch cones around the work area and delineate work zone with caution tape, snow fencing or safety bars, if necessary. 2b. Wear appropriate PPE including long sleeve high visibility clothing and or reflective safety vest. 2b. Face traffic, maintain eye contact with oncoming vehicles and establish a safe exit route.
	2c. OVEREXERTION: Hazard due to carrying, lifting, and bending while transporting equipment	2c. Use proper body positioning and lifting techniques; keep back straight, lift with legs, keep load close to body, and never reach with a load. 2c. Avoid carrying too much equipment at one time and team-lift equipment that is more than 50 lb.
	2d. CAUGHT/CONTACT: Pinch Points / sharp edges associated with setting up the tripod	2d. Wear cut resistant gloves when handling the tripod and keep fingers away from pinch points located near moving parts of the tripod. Don't carry tripod by the pointed ends.
	2e. OVEREXERTION: Hazard due to bending awkwardly to look through the autolevel	2e. When practical, set the height of the autolevel optic as to minimize bending at the waist.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
3. Open / close manhole cover to well that is being surveyed (if necessary).	**3a. OVEREXERTION:** Muscle strain	3a. See 1c. Bend knees when reaching to open well. Use manhole lifting hook or pry bar to avoid bending.
	3b. CAUGHT: Pinch points associated with removing / replacing manholes and working with hand tools	3b. Wear leather gloves or cut resistant gloves when working with well cover and hand tools. 3b. Use proper tools (ratchet and crowbar or pry bar for well cover) and inspect before use. 3b. Do not put fingers under well cover.
	3c. EXPOSURE: To potentially hazardous vapors To biological hazards	3c. No open flames/heat sources. 3c. To minimize exposure to vapors, allow well to vent after opening it and before survey activities begin. 3c. Work on the upwind side of manhole/well. 3.c Use caution while opening lids to inspect work area for bees and insects inside of covers. 3c. Use insect/tick repellent as necessary.
	3d. CONTACT: With traffic	3d. See 2b.
4. Perform survey.	**4a. FALL:** Slip/trip hazards	4a. See 2a.
	4b. CONTACT: Traffic (surveying locations could be potentially located in parking areas and sidewalks)	4b. See 2b. 4b. Personnel using the scope will be devoting most of their attention to the surveying activity and shall be aware of vehicular and pedestrian traffic. Personnel holding the measuring stick should be extra vigilant of survey personnel and communicate any potential hazards to the instrument person via handheld radio or similar means. Ensure reflective safety vest is worn.
	4c. ENERGY SOURCES: Electrical shock from survey rod striking overhead electric lines or lights	4c. Prior to raising and extending the survey rod, personnel should thoroughly inspect the area above the measuring point. If overhead electrical lines are encountered within 20 feet of the measuring point; stop work and consult with the office health and safety officer.
5. Break down work area.	**5a. CONTACT:** Traffic (surveying locations can potentially be in parking areas and sidewalks)	5a. See 2b.
	5b. EXERTION: Hazard due to carrying, lifting, and bending while transporting equipment	5b. See 2c.
	5c. CONTACT: Personal injury or equipment damage by striking surroundings with an extended rod or unsecured tripod leg	5c. Ensure rod is entirely collapsed prior to mobilization / demobilization between survey points. 5c. Ensure tripod legs are fully collapsed and secured with strap prior to mobilization / demobilization between set-ups.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-011	DATE: 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
Generic	**Construction - Excavation**	**Excavation / Trenching**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
David Kaiser	Senior Engineer	Brian Hobbs	Corporate Health & Safety Manager
Ian Holst	Senior Engineer		

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES: Leather or cut resistant
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☐ OTHER
☒ LONG SLEEVED SHIRT	☒ HEARING PROTECTION	☒ PPE CLOTHING: Fluorescent reflective vest or high visibility long sleeved clothing	
☐ LIFELINE / BODY HARNESS	☒ SAFETY SHOES: Steel-toe boots		
☒ SAFETY GLASSES			

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Jackhammer, Excavator, Backhoe, Hand Tools, Photoionization Detector, barrels, 42" traffic cones, snow fencing, telescoping poles, temporary chain link fence, ladders, shovels, digging bars, power tools (cut-off saw), Two-way radios, Sheeting, Trench box, Retractable lanyard, Harness

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or footprint of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Pre-Clearance Protocol.	**1a. CONTACT:** Damage to underground utility.	1a. Confirm that (if applicable) "Call Before You Dig" and local utility companies were contacted prior to trenching in order to confirm utility mark outs. Must have a case # before digging.
	1b. ENERGY SOURCE/CONTACT: Property damage; Pressurized water mains may cause lacerations or broken bones. Pressurized gas mains may explode causing serious injury, or death. Underground electric may cause severe burns, shock, or death.	1b. Pre-clearing of the trenching location must be conducted to a minimum of 5 vertical feet below the ground surface (10 feet minimum for Critical Zone) using hand tools (shovel and non-metallic dig bar) prior to trenching. Supervisor should be contacted to discuss appropriate pre-clearing depth. **1b. Complete subsurface clearance checklist**.
	1c. FALL: Slip, Trip or Fall may cause muscle strains or tears, abrasions, lacerations, or broken bones.	1c. Be aware of the conditions when walking or loading equipment and working. Walk within established pathway avoiding uneven surfaces. Remove potential slip/trip/fall hazards.
2. Set up work zone.	**2a. CONTACT/CAUGHT:** Cuts/lacerations from equipment. Broken bones from contact by vehicle.	2a. Isolate work area from hazards with cones, barricades, and snow fencing, telescoping poles or temporary chain link fence. Utilize a flag person when necessary (i.e., third party traffic in area). Install traffic signs in roadways and for detours. Spotters will maintain and enforce exclusion zone.
	2b. FALL: Slip, Trip or Fall may cause muscle strains or tears, abrasions, lacerations, or broken bones.	2b. See 1c.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards, energy source; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
3. Trenching Activity.	**3a. CONTACT:** Serious injury including broken bones, muscle strains or tears, and possibly death due to contact with machine.	3a. Spotter(s) required for all heavy equipment operation. No worker shall be allowed inside the exclusion zone or along the trench/excavation area while any equipment is in operation. A minimum exclusion zone greater than the length of the equipment boom must be established. Workers only allowed in exclusion zone if the operator is in "Hands Off "mode. Operator will not operate equipment until worker is out of exclusion zone. Spotters and operators will have radios for communication, when either loses sight of one another, and/or in case of emergency.
	3b. FALL: Slip, Trip or Fall may cause muscle strains or tears, abrasions, lacerations, or broken bones	3b. Any trench/excavation deeper than 3' must have a ladder within 25' of any worker in the excavation. At least 3'(rungs) of the ladder shall be above the top of the excavation. All spoil piles shall be maintained 2' minimum from edge of excavation. 3b. Any trench/excavation deeper than 6' must have fall protection, retractable lanyard for ladder use, and 42" high guardrails along the edge of the trench/excavation.
	3c. EXPOSURE: Noise, Dust, Concrete- Asphalt, petroleum hydrocarbon vapors may cause damage to ears and lungs	3c. Air monitoring using a calibrated photoionization detector (PID) will be used to monitor the breathing zone of the work area. If a reading of >5ppm is recorded, the oversight personnel must temporarily cease work and instruct all Site personnel to step away from the area of elevated readings.
4. Setting Trench protections if necessary.	**4a. CAUGHT:** Injury due to contact with failed trench, may include muscle strains or tears, abrasions or lacerations, broken bones and possibly death.	4a. To prevent cave-ins and avoid caught by/between, excavations over 4' in depth, unless working in stable rock, shall have engineer approved shoring, sheeting or trench box. Top of protection shall be at least 2' above top of excavation.
	4b. CONTACT/CAUGHT: Injury due to rigging activities and entering exclusion zone during lifting and/or transport of shoring/trench box/material may include muscle strains or tears, abrasions or lacerations, broken bones and possibly death.	4b. Use only inspected rigging with 2, 3 or 4 lift points; wear cut-resistant gloves. Rigging to be hooked up to factory installed hook up points on equipment. Control load with non-conductive tag lines with workers out of exclusion zone. Don't stand underneath suspended load; wear steel toed boots and hard hat.
	4c. FALL: Possible injury due to fall into excavation may include muscle strains or tears, abrasions or lacerations, or broken bones.	4c. Shoring to be set and sides will be backfilled to avoid fall hazards before workers are allowed to enter area. Operator will be in "HANDS OFF" mode before workers enter work area to unhook rigging. An inspected ladder extending 3' above top of the shoring will be used to enter and exit the shoring. Workers will use three points of contact when using the ladder.
5. Secure/Leave Site. If backfilling, see excavation backfilling and compaction JSA for potential hazards and critical actions.	**5a. FALL:** Potential Slip, Trip or Fall - may cause muscle strains or tears, abrasions or lacerations, or broken bones.	5a. See 1c. 5a. All open excavations must be backfilled or secured prior to departure with steel plates, orange construction fence or temporary chain link fencing.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-014	DATE: 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY:	WORK TYPE:	WORK ACTIVITY (Description):	
Generic	**Drilling**	**Hollow Stem Auger Soil Borings / Well Installation**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
Douglas Ferraiolo	Staff Geologist	Brian Hobbs	Corporate Health & Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☒ GOGGLES: Spoggles required if winds exceed 15 mph. ☐ FACE SHIELD ☒ HEARING PROTECTION: (as needed). ☒ SAFETY SHOES: Steel or Composite Toe.	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent long-sleeve shirt or long-sleeve shirt and reflective safety vest.	☒ GLOVES: Leather, Cut-Resistant, and Nitrile. ☒ OTHER: Insect Repellant, Sunscreen (as needed).

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Truck-Mounted Drilling Rig or Track Rig, Saw, Hand Tools, Photoionization Detector, Multi-Gas Meter (or equivalent), Interface Probe, 20 lb. Type ABC Fire Extinguisher, 42" Cones & Flags, "Work Area" Signs.

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

"SHOW ME YOUR HANDS"
Driller and helper should show that hands are clear from controls and moving parts

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilization / demobilization and establish a work area.	**1a. See Mobilization/ Demobilization JSA GEN-015.**	1a. See Mobilization / Demobilization JSA GEN-015.
2. Raising tower / derrick of drilling rig.	**2a. CONTACT:** Overhead hazards.	2a. Prior to raising the tower / derrick, the area above the drilling rig will be inspected for overhead hazards (wires, tree limbs, piping or other structures) that may be contacted by the rig's tower or drilling rods. 2a. The tower / derrick must not be raised beneath overhead power lines unless approved by the Roux PM. 2a. Maintain a minimum of 10' from all overhead structures. 2a. Do not move the rig while the tower / derrick is raised.
	2b. CONTACT: Amputation / crush points when raising the rig and instability of rig.	2b. Inspect the equipment prior to use and avoid any potential amputation points. 2b. Lower outriggers to ensure stability prior to raising rig tower derrick. Keep feet and body out of the line of fire when lowering out-riggers. 2b. Inspect the set-up location for uneven terrain. Level or avoid area if needed. 2b. If the rig needs to be mounted, be sure to use three points of contact.
3. Advancement of augers for soil boring installation.	**3a. CONTACT:** Equipment imbalance during advancement of drill equipment.	3a. Drillers will advance the borehole with caution to avoid causing the rig to become imbalanced and / or tip. 3a. The blocking and leveling devices used to secure the rig will be inspected by drillers and Roux personnel regularly to see if shifting has occurred. **3a. Drillers will maintain the "Purple Zone" policy surrounding augers to ensure no personnel come into contact with augers while in use. Workers will spray paint a 3' semi-circle surrounding the augers to visually show that no personnel should enter the "Purple Zone" while drilling activities are being conducted.** 3a. In addition, personnel and equipment that are non-essential to the advancement of the borehole will be positioned away from the rig at a distance that is at least as far as the boom is high (minimum exclusion zone of 20 feet).
	3b. CONTACT: Flying / spraying debris.	3b. Wear all required PPE (especially hand, eye, and ear protection). 3b. Maintain minimum EZ distance (i.e. swing/tip radius of rig) when rig is in operation to avoid potential line of fire hazards from flying materials or debris.
	3c. CAUGHT: Limb/extremity amputation, abrasion, and crushing.	3c. Inspect the equipment prior to use for potential pinch points. 3c. Test all emergency shutdown devices prior to drilling. 3c. Inspect drill head for worn surface or missing teeth; replace if damaged or blunt. 3c. Inspect augers, do not use if auger flight is damaged or bent.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift." Avoid general statements such as, "be careful."

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
3. Advancement of augers for soil boring installation (Continued).		3c. Ensure all jewelry is removed, loose clothing is secured, and PPE is secured close to the body. 3c. All non-essential personnel should stay away from the immediate work area; position body out of the line-of-fire of equipment particularly when installing auger flights and steel override casings. 3c. Drillers and helpers will understand and use the "Show Me Your Hands" Policy. 3c. Spinning augers should have an exclusion zone of 20 feet when in operation.
	3d. FALL: Slip/trip/fall hazards.	3d. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 3d. Do not climb over stored materials/equipment; walk around. Practice good housekeeping. 3d. Use established pathways and walk on stable, secure ground. 3d. Use three points of contact when mounting or dismounting the rig. 3d. Remove soil cuttings to avoid a tripping hazard from developing near augers.
	3e. EXPOSURE: Inhalation of contamination / vapors.	3e. Air monitoring using a calibrated photoionization detector (PID) to periodically monitor the breathing zone of the work area. 3e. The Action Level for breathing zone air is five parts per million (sustained) as detected by the PID. 3e. If a reading of >5ppm is recorded, the Roux field personnel must temporarily cease work, instruct all Site personnel to step away from the area of elevated readings and inform the Roux PM of the condition. The Roux PM will then recommend additional appropriate precautions in accordance with the site specific health and safety plan.
	3f. EXPOSURE: Noise and dust.	3f. Wet borehole area with sprayer to minimize dust. Stand upwind and keep body positioned away from rig. 3f. Wear hearing protection while drill rig is operating and / or the noise levels exceed 85 dBA.
	3g. EXERTION: Installing well casings and lifting augers.	3g. Keep back straight and bend at the knees. 3g. Utilize team lifting for objects over 50lbs. 3g. Use mechanical lifting device for odd shaped objects.
4. Installation of well materials.	**4a. CONTACT:** Installing well materials while also pulling up augers. **4b. CAUGHT:** Possible pinch or crush hazard assembling PVC and sending down the borehole. **4c. FALL:** Slip/trip/fall hazards with hand tools and materials. **4d. EXPOSURE:** Potential contamination, harmful vapors, dust, and / or noise. **4e. EXERTION:** Lifting heavy bags of materials to backfill borehole.	4a. Potential contact with augers during installation of well materials. 4a. Keep distance from augers and do not place any materials while augers are in motion. 4b. Keep all body parts out of potential pinch points while placing PVC together and sending down borehole. 4c. See 3d. 4d. See 3e and 3f. 4d. Stand upwind to avoid exposure to dust generated from packing materials. 4e. Ergonomic hazard lifting bags of sand and bentonite while packing the well.
5. Cleaning the auger flights	**5a. CONTACT:** Cuts/scrapes or puncture wound from contacting auger.	5a. Follow "Show Me Your Hands" Procedure and make sure auger is out of gear before contacting auger with tool or hand. 5a. Pull cleaning tool across your body with handle away from body; do not push toward the auger. 5a. Do not clean more than ¾ turn around the auger at a time. 5a. Wear cut resistant and leather gloves. 5a. Always use two hands to operate cleaning tool. 5a. Inspect tool before use and remove from service if handle or metal are cracked/fatigued. 5a. Stand out of the line of fire.
6. Decontaminate equipment.	**6a. EXPOSURE / CONTACT:** To contamination (e.g., contaminated groundwater, vapors). **6b. EXPOSURE**: To chemicals in cleaning solution (including ammonia).	6a. Wear chemical-resistant disposable gloves and safety glasses. 6a. Contain decontamination water so that it does not spill. 6a. Use an absorbent pad to clean spills, if necessary. 6b. See 3e. Wear all appropriate PPE and stand upwind of any exposed cleaning solutions.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.

[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.

[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift." Avoid general statements such as, "be careful."

JOB SAFETY ANALYSIS	Ctrl. No. GEN-015	DATE: 7/10/2020	☐NEW ☒REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)	
GENERIC	**Site Recon**	**Mobilization/Demobilization**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
Rebecca Lowy	Staff Assistant Geologist	Brian Hobbs	Corporate Health & Safety Manager
Tally Sodre	OHSM		

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD ☒ HEARING PROTECTION (as needed) ☒ SAFETY SHOES: Steel Toe or composite toe	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest of high-visibility clothing; long sleeve shirt; long pants	☒ GLOVES: Leather, nitrile, and cut resistant (as needed) ☐ OTHER

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Required Equipment: Varies

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilize/demobilize and establish work area	**1a. FALL:** Slip/trips/falls from obstructions, uneven terrain, weather conditions, heavy loads, and/or poor housekeeping.	1a. Use 3 points-of-contact/ensure secure footing when entering and exiting vehicle. 1a. Inspect walking path for uneven terrain, steep hills, obstructions, and/or weather-related hazards (i.e., ice, snow, and puddles) prior to mobilizing equipment. Use established pathways. Walk on stable/secure ground. 1a. Do not climb over stored materials/equipment; walk around. Practice good housekeeping; organize and store equipment neatly in one area at its lowest potential energy. 1a. Wear boots with adequate treads. 1a. Delineate unsafe areas with 42” cones, caution tape and/or flagging.
	1b. CONTACT: Personal injury and/or property damage caused by being struck by Site traffic or equipment used in Site activities.	1b. Observe and maintain the posted speed limits. 1b. When first arriving onsite, park vehicles in designated parking space and/or out of the way locations. Use parking brake on all vehicles and tire chocks on work trucks and trailers. 1b. Check in with Site Manager/Supervisor to ensure coordination with other Site activities and to discuss any special hazards. Ensure that short-service employees (SSE) are identified. 1b. Identify potential traffic sources. 1b. Wear PPE including high visibility clothing or reflective vest. 1b. Use a spotter while moving work vehicles; plan ahead to avoid backing whenever possible. 1b. Maintain a minimum exclusion zone when vehicles are in motion (i.e. greater than swing/tip radius of equipment). When backing up truck rig with an attached trailer use a second spotter if there is tight clearance simultaneously on multiple sides of the equipment or if turning angles limit driver-to-spotter visibility. 1b. Delineate work area with 42” cones, flags, caution tape, and/or other barriers. 1b. Position “Work Area” signs at Site entrances, if possible, or at either side of work area.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift." Avoid general statements such as, "be careful."

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
		1b. Position largest vehicle to protect against oncoming traffic. 1b. Face traffic, maintain eye contact with oncoming vehicles, use a spotter, and establish a safe exit route. 1b. Observe potential overhead and ground surface features that may interfere with moving equipment. Clear the path of physical hazards prior to initiating mobilization.
	1c. CAUGHT: Personal injury from pinch points and being in line-of-fire of vehicle and/or equipment.	1c. Make sure driver has engaged parking brake and placed wheel chocks in a position to prevent movement. Be sure that vehicle is parked in front/down gradient (positioned to best block oncoming traffic) of work area. 1c. Wear leather gloves when handling any tools or equipment. Wear cut-resistant gloves (Kevlar or similar) when handling sharp objects/cutting tools/glass. 1c. Keep body parts away from line-of-fire of equipment. 1c. Always carry tools by the handles and/or designated carrier. Ensure sharp-edged tools are sheathed/secure. 1c. Remove any loose jewelry. Avoid wearing loose clothing and/or ensure loose clothing is secure. 1c. Secure all items on the equipment, tighten up any items or features that have potential to shift or break during mobilization.
	1d. OVEREXERTION: Muscle strains while lifting/carrying equipment.	1d. Use body positioning and lifting techniques that avoid muscle strain; keep back straight, lift with legs, turn with whole body, keep load close to body, and never reach with a load. 1d. Ensure that loads are balanced. Use assistance (mechanical or additional person) to carry equipment that is either unwieldy or over 50 lbs.
	1e. EXPOSURE: Personal injury from exposure to biological and environmental hazards.	1e. Inspect area to avoid contact with biological hazards (i.e. poisonous plants, stinging insects, ticks, etc.). 1e. Wear long sleeved clothes treated with Permethrin, apply insect repellant containing DEET to exposed skin, and inspect clothes and skin for ticks during and after work. 1e. Apply sunscreen (SPF 15+) if exposure to sun for 30 minutes or more is expected.
	1f. EXPOSURE: Weather related injuries.	1f. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, nausea, rapid and shallow breathing). Take breaks in cool places and hydrate as needed. 1f. Watch for cold stress symptoms (severe shivering, slowing of body movement, weakness, stumbling or inability to walk, collapse). Take breaks in warm areas as needed. 1f. Wear clothing appropriate for weather and temperature conditions (e.g., rain jackets, snow pants, multiple layers). 1f. If lightning is observed, wait 30 minutes in a sheltered location (car is acceptable) before resuming work.
	1g. EXPOSURE: Personal injury from noise hazards.	1g. Wear hearing protection if sound levels exceed 85 dBA (if you must raise your voice for normal conversation).

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-017	DATE: 7/10/2020	☐NEW ☒REVISED	PAGE 1 of 2

JSA TYPE CATEGORY:	WORK TYPE:	WORK ACTIVITY (Description):	
GENERIC	**Drilling**	**Monitoring and Recovery Well Development**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
Ron Lombino	Project Geologist	Brian Hobbs	Corporate Health & Safety Manager
Courtney Lind	Project Engineer		

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD ☒ HEARING PROTECTION (as needed) ☒ SAFETY SHOES: Composite-toe or steel toe boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing	☒ GLOVES: Leather or cut-resistant and Nitrile ☒ OTHER: Insect repellant, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Required Equipment as needed: Truck Rig or support truck, Trailer, 42-inch Safety cones and flags, Caution Tape, Interface Probe, Power Source, Submersible Pump, Surge Block/Plunger, 20 lb. Type ABC Fire Extinguisher, Holding Tanks and/or Buckets, Absorbent Pads, 5-gas meter, Tools as needed: Socket and Pipe Wrench, Screw Driver, Pry Bar, Ratchet, Vault Key.

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

"SHOW ME YOUR HANDS"
Driller and helper should show that hands are clear from controls and moving parts

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilization / Demobilization (**Review Mobilization and Demobilization JSA**)	**1a. CONTACT:** Equipment/property damage.	1a. The truck rig's tower/derrick will be lowered and secured prior to mobilization. 1a. Set-up the work area / position equipment in a manner that eliminates or reduces the need for backing of trucks and trailers. 1a. All non-essential personnel should **maintain an exclusion zone greater than the swing/tip radius of equipment.** 1a. Beep horn twice before backing up. 1a. When backing up with an attached trailer use a spotter Level or avoid if needed.
	1b. FALL: Slip/trip/fall hazards.	1b Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 1b. Do not climb over stored materials/equipment; walk around. Store equipment at lowest potential energy.
2. Open/close well.	**2a. EXERTION:** Muscle strain (some wells have large vault covers).	2a. Keep back straight, lift with legs, keep load close to body, and never reach with a load. Ensure that loads are balanced to reduce the potential for muscle strain. Two people are required when lifting objects over 50 lbs or when the shape makes the object difficult to lift.
	2b. CAUGHT: Pinch points associated with removing/replacing manholes and working with hand tools.	2b. Wear cut-resistant/leather gloves when working with well vault/cover and hand tools. Do not put fingers under well vault/cover. 2b. Use ratchet and pry bar for well cover and inspect before use.
	2c. EXPOSURE: Potentially hazardous vapors.	2c. No open flames/heat sources. 2c. Allow well to vent after opening it and before starting development activities to minimize exposure to vapors. Air monitoring must be performed prior to set up and during the well development activities. Work on upwind side of well.
	2d. CONTACT: Traffic.	2d. Wear required PPE including high visibility clothing or reflective vest. 2d. Delineate work area with 42" safety cones and/or other barriers. Position vehicle to protect against oncoming traffic. 2d. Face traffic, maintain eye contact with oncoming vehicles, and establish a safe exit route.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – Electricity, Pressure, compression, tension, torque.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
3. Develop well (mechanical surging).	**3a. CAUGHT:** Cut hazards and finger pinch points.	3a See 2b. 3a. Use required PPE including leather/cut-resistant gloves when handling development equipment. Identify finger/hand pinch points. Keep hands away from active surge equipment. 3a. All non-essential personnel should **maintain an exclusion zone greater than the swing/tip radius of equipment.**
	3b. CONTACT/EXPOSURE: Contamination (e.g., SPH, contaminated groundwater, vapors).	3b. See 2c. 3b. Wear Nitrile gloves and safety glasses. Insert and remove surge block/plunger and line/cable slowly to avoid splashing at the surface. 3b. Use an absorbent pad to clean any spills.
	3c. EXERTION: Muscle strain from lifting equipment.	3c. See 2a. 3c. Use mechanical device to insert and remove surge block/plunger if greater than 50lb.
	3d. CONTACT: Injury while handling wench line/cable, or with active surging equipment.	3d. If using a drill rig, inspect all wench lines/cables for any kinks or if frayed prior to use. Replace any damaged lines/cables. Review **Drill Rig checklist prior to development activities**. 3d. See 3a.
4. Purging well (pumping water to holding tanks/drums/buckets).	**4a. CAUGHT:** Pinch points associated with connecting hose to tank. Pinch points associated with handling pump and hoses.	4a. See 3a. 4a. Ensure that fingers are not placed near coupling when attaching and securing hose(s). Do not place fingers under pump/hoses. Wear leather or cut-resistant gloves when handling pump/hose(s). 4a. Keep hands clear from any line of fire.
	4b. FALL: Using side mounted ladder when attaching hose to tank. Slip, trip, fall from lines/hoses	4b. Inspect ladder steps to make sure steps are not bent/damaged and free of debris/fluid. 4b. Use three points of contact always when using ladder. 4b. Use hoist or other mechanical means to secure and move hose. 4b. Utilize anti-whip cords on all compressed hoses. Keep hoses and lines coiled and organized out of designated walking paths around the work zone.
	4c. CONTACT: Contamination (e.g., SPH, contaminated groundwater).	4c. Secure water hose. 4c. Do not overfill tanks, and purge/transfer liquids in such a manner that they do not splash. (See 3b). 4c. Dispose of used materials/PPE in the designated impacted PPE container.
	4d. EXERTION: Muscle strain from lifting/carrying equipment.	4d. See 2a.
	4e. FALL: Spilled purge water.	4e. Clean up any spills using absorbent pads or spill kits.
5. Decontaminate equipment	**5a. CONTACT/EXPOSURE:** Contamination (e.g., SPH, contaminated groundwater, vapors).	5a. See 3b.
	5b. EXPOSURE/CONTACT: Chemicals in cleaning solution	5b. Decontaminate equipment in well-ventilated area. Wear nitrile gloves to avoid skin contact with cleaning solutions.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – Electricity, Pressure, compression, tension, torque.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-019	DATE: 7/10/2020	☐NEW ☒REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
GENERIC	**Site Recon**	**Site Walk and Inspection**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Sara Barrientos	Staff Geologist	Brian Hobbs	Corporate Health and Safety Manager
		Joe Duminuco	Vice President

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD ☒ HEARING PROTECTION: ear plugs as necessary ☒ SAFETY SHOES: Steel or composite toed	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: High-visibility vest or high-vis outerwear	☒ GLOVES: Leather/cut-resistant/chemical resistant ☒ OTHER: Tyvek and rubber boots as necessary, dust mask as necessary

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Required Equipment: Site map, emergency contact list, documentation of urgent care/hospital routes and / or guide familiar with Site, operating cell phone or walkie-talkie if Site allows.

Commitment to Safety – All personnel onsite will actively participate in SPSA performance by verbalizing SPSAs throughout the day.

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

SITE SECURITY: Prior to site inspection verify appropriate method to address Site Security concerns as it relates to potential criminal activity, homeless population, and/or isolation concerns. Work with the Project Principal and/or Project Manager to address appropriately.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Check in with Site contact.	**1a. CONTACT/EXPOSURE/FALL:** Personal injury caused by lack of site specific hazards.	1a. Inquire about hazards and other activities taking place at the Site. 1a. Inform Site contact of work scope, timeline and location(s). 1a. Discuss emergency evacuation procedures and muster points with Site contact.
2. Traversing the Site	**2a. CONTACT:** Property damage and personal injury caused by obstructions/vehicles or unauthorized personnel at remote Sites.	2a. All equipment must be stowed and secured prior to moving. 2a. Maintain speed limit as posted on-site. 2a. When possible drive on established roadways. 2a. Yield to all pedestrians. 2a. Use pull-through spots or back into parking spots. 2a. Don high visibility clothing/safety vest. If working at remote Site, add orange accessories during hunting season.
	2b. FALL: Uneven terrain and weather conditions. Overgrown shrubs and vines. Equipment in the work zone.	2b. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 2b. When possible, use established pathways and walk on stable, secure ground. 2b. Communicate traversing hazards with others.
	2c. OVEREXERTION: Muscle strain while carrying equipment.	2c. When carrying equipment to/from work area, use proper lifting techniques; keep back straight, lift with legs, keep load close to body, never reach with a load. Ensure that loads are balanced to reduce the potential for muscle strain. Use mechanical assistance or make multiple trips to carry equipment.
	2d. EXPOSURE: Biological hazards – ticks; bees/wasps; poison ivy; insects; (Ticks are most active any time the temperature is above freezing, typically from March to November.)	2d. Inspect area to avoid contact with biological hazards. 2d. Ticks: • Treat outer clothing including pants, shirts, socks, boots and hats the evening before with Permethrin (allowing at least two hours before use). • Apply DEET to exposed skin before travelling to the Site and reapply after two hours. • Check for ticks during and after work. 2d. Bees: • Use bee spray as appropriate to deter/eliminate bees. • Protect exposed skin with insect repellent.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.

[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.

[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

	2e. EXPOSURE: Heat Stress & Cold Stress. Personal injury from working in inclement weather conditions.	2d. Poison Ivy: • Identify areas of poison ivy and spray with weed killer. Don Tyvek and rubber boots while traversing poison ivy areas. • If skin contacts poison ivy, wash skin thoroughly with soap and water. 2e. Wear sunscreen with SPF 15 or greater on exposed skin whenever 30 minutes or more of sun exposure is expected. 2e. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, rapid and shallow breathing). Take breaks as needed. 2e. Watch for cold stress symptoms (severe shivering, slowing of body movement, weakness, stumbling or inability to walk, collapse). Take breaks as needed. 2e. Wear appropriate rain gear as needed. 2e. Take frequent breaks if tired, wet, or cold/hot. Drink water. 2e. If lightning is observed, wait 30 minutes after last thunder boom/lightning bolt in a sheltered location (car acceptable) before starting work again.
3. Walking near heavy equipment and machinery.	**3a. CONTACT:** Personal injury from Site and roadway traffic. Personal injury from flying debris **3b. OVEREXERTION:** Personal injury from lifting/moving/rotating equipment. **3c. EXPOSURE:** Hearing damage from noise generating equipment/processes. Inhalation/exposure to hazardous vapors and or dust. **3d. EXPOSURE:** Working in a remote area.	3a. See 2a. 3a. Maintain an exclusion zone of at least 10'-25' feet from all engaged equipment. 3a. Keep body parts out of the line of fire of pinch points. 3a. Wear appropriate PPE always. 3b. See 2c. 3c. Wear hearing protection if >85 dBA. (i.e. noise levels which require you to raise your voice to communicate) 3c. Always wear leather gloves when handling any tools or equipment. 3c. Always wear appropriate PPE based off chemicals present. 3d. Use the "buddy system" whenever possible. If working alone, contact PM upon arrival/departure, as well as during work activities prior to commencing work if applicable. 3d. Always carry a communication (i.e., cell phone, walkie-talkie) or directional (i.e., map, compass, etc.) device when traversing remote areas.
4. Working in adverse weather conditions.	**4a. EXPOSURE:** Heat Stress & Cold Stress. Personal injury from working in inclement weather conditions.	4a. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, rapid and shallow breathing). Take breaks as needed. 4a. Watch for cold stress symptoms (severe shivering, slowing of body movement, weakness, stumbling or inability to walk, collapse). Take breaks as needed. 4a. Wear appropriate rain gear as needed. 4a. Take frequent breaks if tired, wet, or cold/hot. Drink water. 4a. If lightning is observed, wait 30 minutes after last thunder boom/lightning bolt in a sheltered location (car acceptable) before starting work again.
5. Departing Site.	**5a. EXPOSURE:** Exposure to unnecessary hazards should personnel believe Roux is on-Site during an emergency and conduct a search.	5a. Sign out or notify Site contact and Roux Project Manager of your departure.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.

[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.

[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETYANALYSIS Ctrl. No. GEN-020	DATE: 7/10/2020	☐NEW ☒REVISED	PAGE 1 of 2

JSA TYPE CATEGORY: **GENERIC**	WORK TYPE: **Gauging & Sampling**	WORK ACTIVITY (Description): **Soil Sampling**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
MaryBeth Lyons	Project Scientist	Brian Hobbs	Corporate Health and Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES ☒ FLAME RESISTANT CLOTHING (as needed)	☐ GOGGLES ☐ FACE SHIELD: ☒ HEARING PROTECTION: (as needed) ☒ SAFETY SHOES: Composite-toe or steel toe boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing	☒ GLOVES: Leather, Nitrile and cut resistant ☒ OTHER: Insect repellant, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Recommended Equipment: 42" traffic cones, caution tape, trowel

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs.

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Secure location	**1a. CONTACT:** Personnel and vehicular traffic may enter the work area.	1a. If in an area with foot or vehicle traffic, delineate the work area with 42" traffic cones and/or caution tape to prevent exposure to traffic and inform others of work activity. 1a. Wear reflective vest and/or high visibility clothing. 1a. Face the direction of any vehicular traffic. Position vehicle to protect worker from traffic. 1a. Communicate work activity with adjacent work areas.
	1b. FALL: Tripping/falling due to uneven terrain or entry/exit from excavations.	1b. Inspect pathways and work area for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions. 1b. Use established pathways and walk on stable, secure ground. 1b. Stage equipment and tools in a convenient, stable, and orderly manner. Store equipment at lowest potential energy. 1b. Roux employees should stay 5 feet from in-progress excavations and trenches. Should entry to an excavation be required (when stabilization is complete), ladders must be employed for steep embankments, excavations, pits, and trenches.
	1c. EXPOSURE: Exposure to sun and excessive heat, possibly causing sunburn, heat exhaustion or heat stroke. Exposure to cold temperatures possibly causing cold stress. Skin burn as a result of fire, if applicable. Exposure to explosive vapors due to tank farm operations. Exposure to airborne dust due to high wind speeds. Biological hazards - ticks, bees/wasps, poison ivy, thorns, insects, etc.	1c. Wear sunscreen with an SPF 15 or greater whenever 30 minutes or more of exposure is expected. 1c. Use a tent to shade the work area from direct sunlight particularly when warm temperatures are expected. 1c. Be aware of the location of all Site personnel. 1c. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, rapid and shallow breathing). 1c. Watch for cold stress symptoms (severe shivering, slowing of body movement, weakness, stumbling or inability to walk, collapse). 1c. Take breaks for rest and water as necessary. Move to an area that is well shaded or a climate controlled area (i.e., car, site trailer, etc.). 1c. No open flames/heat sources. 1c. Flame retardant clothing must be worn when specified by Site policy. 1c. Cell phones should be disabled when specified by Site policy. 1c. Pre-treat field clothing with Permethrin prior to site visit to kill ticks and insects. 1c. Wear long sleeved shirts and tuck in (or tape) pant legs into socks or boots to prevent ticks from reaching skin. 1c. Spray insect repellant containing DEET on exposed skin when working in overgrown areas of the Site. 1c. Inspect area to avoid contact with biological hazards. 1c. Wear cut-resistant gloves when handling branches, shrubs, etc. that may lie within the walking path. 1c. Wear spoggles if the average wind speeds are above 15 mph. 1c. Personnel shall examine themselves and co-worker's outer clothing for ticks periodically when onsite. 1c. If skin comes in contact with poison ivy, wash skin thoroughly with soap and water. If rash persists after washing, immediately notify your supervisor, the OM and OHSM for possible consultation with a physician at an approved Occupational Health Clinic.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
2. Collect Soil Sample	**2a. CONTACT:** Personal injury from pinch points, cuts, and abrasions from sampling equipment tools, and material within soil sample. Personal injury from contact with moving equipment while sampling. Personal injury from contact with glass sample jars.	2a. Wear cut-resistant (i.e., Kevlar) gloves under chemical-resistant (nitrile) disposable gloves when handling soil samples and sampling jars. 2a. Where possible, use trowel or equivalent tool to avoid contact with soil. 2a. If sampling from bucket of heavy equipment, ensure all equipment is off and operator utilizes the “show me your hands” policy. 2a. See 1a.
	2b. EXPOSURE: Exposure to contamination (impacted soil) and/or lab preservatives.	2b. Wear chemical-resistant (nitrile) disposable gloves over cut resistant gloves to protect hands when handling samples; use containment material or plastic sheeting to protect surrounding areas. 2b. Wear safety glasses to protect eyes from dust or air-borne contaminants that may results from disturbing the soil. 2b. Where possible, remain upgradient from sample location if collecting soil sample from stockpile, drill rig, etc. to avoid breathing contaminant vapors, if they are present. 2b. When collecting soil sample from hand auger, put large zip lock bag over entire auger to prevent spillage of soil on to the ground. 2b. Open sample jars slowly and fill carefully to avoid contact with preservatives.
	2c. EXERTION: Exertion due to repetitive motion and ergonomics.	2c. Utilize a table or raised surface for soil sampling if multiple soil samples are going to be taken to minimize repetitive bending motion.
3. Decontaminate equipment	**3a. EXPOSURE/CONTACT:** Contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated vapors and/or soil).	3a. Wear chemical-resistant (nitrile) disposable gloves and safety glasses. 3a. Use an absorbent pad to clean spills. 3a. Properly dispose of used materials/PPE in provided drums in designated drum storage area. 3a. Remain upwind of sample and avoid breathing contaminant vapors, if they are present.
	3b. EXPOSURE: Chemicals in cleaning solution including ammonia.	3b. Wear chemical-resistant (nitrile) disposable gloves and safety glasses. 3b. Work on the upwind side of decontamination area. 3b. Use an absorbent pad to clean spills. 3b. Properly dispose of used materials/PPE in provided drums in designated drum storage area. Ensure that all drums are properly labeled and secured.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-022	DATE 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY:	WORK TYPE:	WORK ACTIVITY (Description):	
General	**Drilling**	**Rotosonic Soil Borings / Well Installation**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
William Poupis	Vice President ADT	Brian Hobbs	Corporate Health & Safety Manager
Ron Lombino	Project Hydrogeologist		

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD ☒ HEARING PROTECTION: (as needed) ☒ SAFETY SHOES steel or composite toe	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: fluorescent long sleeve shirt or long sleeve shirt and reflective safety vest.	☒ GLOVES: Leather, Nitrile and cut resistant ☒ OTHER: Insect Repellant, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Truck-Mounted Sonic Drilling Rig or Mini Sonic Rig, Hand Tools, Photoionization Detector, Multi-Gas Meter (or equivalent), Interface Probe, 20 lb. Type ABC Fire Extinguisher, 42" Cones & Flags, "Work Area" Signs, Water

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

"SHOW ME YOUR HANDS"
Driller and helper should show that hands are clear from controls and moving parts

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilization of drilling rig (ensure the Subsurface Clearance Protocol and Drill Rig Checklist are completed). **See also Mobilization/Demobilization JSA.**	**1a. CONTACT/CRUSH:** Equipment/property damage during movement. Crush point between moving rig and other objects.	1a. The drill rig's tower/derrick will be lowered and secured prior to mobilization. 1a. A spotter should be utilized while moving the drill rig or backing operations. If personnel move into the path of the drill rig, the drill rig will be stopped until the path is again clear. 1a. Set-up the work area and position equipment in a manner that eliminates or reduces the need for backing of support trucks and trailers. 1a. When backing up truck rig with an attached trailer use a second spotter if there is tight clearance simultaneously on multiple sides of the equipment or if turning angles limit driver/spotter visibility. 1a. Inspect the driving path for uneven terrain. Level or avoid if needed. 1a. Drill rig should have a **minimum exclusion zone (i.e. greater than swing/tip radius of rig)** for non-essential personnel (i.e., geologist) when the rig is moving/in operation.
	1b. FALL: Slip/trip/fall hazards.	1b Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 1b. Do not climb over stored materials/equipment; walk around. Practice good housekeeping. 1b. Use established pathways and walk on stable, secure ground.
2. Raising tower/derrick of drill rig.	**2a. CONTACT**: Overhead hazards.	2a. Prior to raising the tower/derrick, the area above the drilling rig will be inspected for overhead utilities, tree limbs, piping, or other structures, that could come in contact with the rig's tower and/or drilling rods or tools. 2a. Site requirements for raising a tower/derrick around overhead utilities must be reviewed prior to drilling. Maintain **a minimum distance of 10 feet** from overhead structures. 2a. The tower/derrick must not be raised beneath overhead power lines unless approved by both the Roux and Project PMs.
	2b. CONTACT: Amputation points when raising the rig and instability of rig.	2b. Inspect the equipment prior to use and avoid amputation points when engaging tower/derrick. 2b. Lower outriggers to ensure stability prior to raising rig tower/derrick. 2b. If the rig needs to be mounted, be sure to use three points of contact.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards. Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
3. Advancement of soil boring and well installation. **See also Soil Sampling JSA.**	**3a. CONTACT**: Flying debris.	3a. Be aware of and avoid potential lines of fire and wear required PPE such as eye, ear, and hand protection.
	3b. EXPOSURE: Noise and dust.	3b. Wet borehole area with sprayer to minimize dust. 3b. Stand upwind and keep body away from rig. 3b. Dust mask should be worn if there is visible dust in the breathing zone. 3b. Wear hearing protection when the drill rig is in operation.
	3c. CAUGHT: Limb/extremity amputation points; abrasion/crushing.	3c. Always wear leather gloves when making connections and using hand tools; wear cut-resistant (i.e., Kevlar) gloves when handling cutting tools. 3c. Inspect the equipment prior to use for potential amputation points. Keep hands away from being between connections and use of tools is preferable compared to fingers and hands. 3c. Inspect drill head for worn surface or missing teeth; replace if damaged or blunt. 3c. Ensure all jewelry is removed, loose clothing is secured, and PPE is secured close to the body. 3c. All non-essential personnel should remain outside the heavy equipment exclusion zone that is at least as far as the boom is high (**minimum exclusion zone based on swing/tip radius**). 3c. Drillers and helpers will understand and use the "Show Me Your Hands" Policy. Operator and helpers will remain a **minimum of 3 feet** from augers/drill rods while in operation.
	3d. CONTACT/CRUSH: Crushed between equipment due to imbalance during advancement of drill equipment.	3d. Drillers will advance the borehole with caution to avoid causing the rig to become imbalanced and/or tip. 3d. The blocking and leveling devices used to secure the rig will be inspected by drillers and Roux personnel regularly to see if shifting has occurred. 3d. In addition, personnel and equipment that are non-essential to the advancement of the borehole will be positioned away from the rig at a distance that is at least as far as the boom is high (**minimum exclusion zone based on swing/tip radius**).
	3e. EXPOSURE: Inhalation of contamination/vapors.	3e. Air monitoring using a calibrated photoionization detector (PID) will be used to periodically monitor the breathing zone of the work area. 3e. If readings of >5ppm is recorded, the Roux field personnel must temporarily cease work, instruct all Site personnel to step away from the area of elevated readings and inform the Roux PM of the condition. The Roux PM will then recommend additional precautions in accordance with the site-specific health and safety plan.
	3f. FALL: Slip/trip/fall hazards.	3f. Contain drill cuttings and drilling water to prevent slip/trip/fall hazards from developing in work area. 3f. See 1b.
	3g. EXERTION: Potential for muscle strain/injury while installing well casings and/or lifting sonic rods/casings.	3g. Keep back straight and bend at the knees. 3g. Utilize team lifting for objects over 50lbs. 3g. Use mechanical lifting device for odd shaped objects.
4. Decontaminate equipment.	**4a. EXPOSURE:** Contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated groundwater, vapors, chemical in cleaning supplies).	4a. Wear chemical-resistant gloves and safety glasses. 4a. Contain decontamination water so that it does not spill. 4a. Use an absorbent pad to clean spills, if necessary. 4a. See 3b.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards. Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-023	DATE: 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)	
Generic	**Construction**	**Spotting Heavy Machinery**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
Levi Curnutte	Project Scientist	Brian Hobbs	Corporate Health & Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ Particulate Respirator	☒ GLOVES: Cut resistant / leather
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☐ OTHER:
☒ LONG SLEEVED SHIRT	☐ HEARING PROTECTION	☒ PPE CLOTHING: Fluorescent reflective clothing	
☐ LIFELINE / BODY HARNESS	☒ SAFETY SHOES: Steel-/Composite-toe boots/shoes		
☒ SAFETY GLASSES			

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Heavy Machinery (i.e. excavator, payloader, truck, forklift, etc.)

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Prepare for machine activity.	**1a. CONTACT:** Obstructions in the work area may create contact hazards from machinery. **1b. Fall :** Slip/Trip/Fall	1a. Cordon off the work area with safety barrels/cones and a rigid barrier (snow fence, traffic bar, etc.). Communicate that only necessary personnel should be in the work area. Spotter and equipment operator shall enforce the **EZ.** Operator will not operate but shall remain in the hands-off mode while personnel are within the exclusion zone. 1b. Ensure that work area is flat, level and clear of any obstructions or debris before setting up work zone.
2. Spotting.	**2a. CONTACT:** Machine or load contact with personnel, property, or machinery.	2a. Discuss the specifics of the work with the operator and be clear about any hand signals that will be used. Clearly discuss the limits of the assigned work area and the machine's Exclusion Zone. Maintain Exclusion Zone. The Exclusion Zone shall be delineated by using 42-inch traffic cones/barrels and a fixed rigid barrier. 2a. The Minimum Heavy Equipment Exclusion zone is greater than the swing/tip radius of equipment. 2a. Both the spotter and equipment operators shall have 2-way radios/cellular devices on their persons to ensure audible communication in the event any changes or new hazards may arise. 2a. All workers should stay outside of the Exclusion Zone of all equipment unless operator is stopped and in "Hands Off" mode. **(This includes the spotter unless an exception has been established in the Site-specific JSA).** If the Exclusion Zone must be reduced due to work area restrictions then the spotter and operator shall enforce the reduced Exclusion Zone. 2a. Spotters must make eye contact with the machine operator or all movement ceases until visual contact can be reestablished. 2a. Spotter shall keep an eye out for any issues with the machine the operator may not see and communicate with other work crews and spotters on behalf of the operator. 2a. If the spotter needs to take a break, he must find a replacement before leaving or have the machine stop operations. **No heavy equipment shall operate without a spotter under any circumstances.** 2a. Wear fluorescent clothing/safety vest.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
	2b. FALL: Slip/Trip/Fall	2b. Look where walking to identify and avoid slip/trip/fall hazards. Avoid icy and/or wet surfaces. Remove obstacles if possible. 2b. Use designated walkways during spotting whenever possible.
	2c. CAUGHT: Caught between machinery and nearby objects.	2c. **Maintain Exclusion Zone.** Do not stand between large, loose or fixed objects or structures and the machinery while it is in motion. Keep in sight of operator at all times while being aware of surrounding structures.
	2d. EXPOSURE: Inhalation of exhaust from machinery.	2d. The spotter will position him/herself upwind of the working machinery, when possible. Spotter will also inform others working within the vicinity of the EZ of proper positioning, if applicable.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.

[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards.

[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-025	DATE: 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 1

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
Generic	**General**	**Trucking**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Lauren Dolginko	Project Geologist	Brian Hobbs	Corporate Health & Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES: Leather or cut resistant
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☐ OTHER
☐ LONG SLEEVED SHIRT	☐ HEARING PROTECTION	☒ PPE CLOTHING: Fluorescent reflective vest or high visibility long sleeved clothing	
☐ LIFELINE / BODY HARNESS	☒ SAFETY SHOES: Steel-toe boots		
☒ SAFETY GLASSES			

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Heavy equipment (i.e. trucks)

COMMITMENT TO SAFETY- All personnel onsite will actively participate in Hazard recognition and mitigation throughout the day by verbalizing SPSAs.

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Set up work zone.	**1a. CONTACT:** Personal injury/property damage caused by obstruction/vehicle.	1a. Establish work zone for manifesting/paperwork by communicating with workers before task begins. Maintain a minimum **Exclusion Zone (EZ)** around all heavy equipment.
2. Loading of truck.	**2a. CONTACT:** Rolling Vehicle could cause bodily harm. **2b. CONTACT:** Machine or load may crush personnel, property or machinery. **2c. CONTACT:** Load shifting during travel.	2a. All commercial vehicles without an operator must have their engines off and wheels chocked. Truck and loading area should be on level ground. 2b. All machines (Excavator, Lull, Backhoe) must have a spotter. Spotter must communicate contact hazards such as other personnel in the work area, objects in the machine's blind spot, and overhead lines to the operator. Spotter and operator should have 2-way radios or established hand signals to communicate when needed. 2b. Loads must not be swung over other vehicles or personnel. 2b. Maintain **EZ** around all equipment. 2c. Secure all loads prior to moving the truck with chains or straps or cribbing. 2c. Any loose soil or debris should be cleaned off truck sides prior to truck mobilization. 2c. All truck beds must be secured prior to traveling.
3. Dumping loads.	**3a. CONTACT:** Truck may flip sideways or backwards.	3a. All workers must stay behind and away from the side of trucks that are dumping to avoid contact with the truck potentially tipping sideways or backwards. EZ must be maintained equal to the height of bed while lifted.
4. Exchanging paperwork with truck driver.	**4a. CONTACT/CAUGHT:** Broken bones from contact by vehicle. **4b. FALL:** Slip, Trip or Fall may cause muscle strains or tears, abrasions or lacerations, or broken bones.	4a. Truck driver should exit truck with proper PPE and enter the established work zone to complete paperwork. If Site-specific safety prohibits drivers from exiting the truck, wait until truck is finished loading, with engine turned off, before approaching truck. 4a. Always establish eye contact with driver prior to approaching truck. 4a. Confirm sides of truck have been cleaned/brushed off prior to approaching truck. 4b. Survey walking route to identify slip/trip/fall hazards. Avoid icy/wet surfaces. Remove slip/trip/fall hazards if present. 4b. Communicate with driver and spotter prior to approaching truck. Maintain **EZ** around all heavy equipment.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards, energy source; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Cntrl. No. GEN-027	DATE: 11/3/2020	☒ NEW ☐ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
GENERIC	**Drilling**	**Pre-Drilling Clearance, Vactron and Air Knife**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Courtney Rempfer	Staff Scientist	Joseph Midwig	Office Health & Safety Manager
Sara Redding	Senior Hydrogeologist	Brian Hobbs	Corporate Health & Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☒ FACE SHIELD (While Air Knifing) ☒ HEARING PROTECTION (As needed) ☒ SAFETY SHOES: Composite toe or steel toe boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing; long-sleeve shirt	☒ GLOVES: Leather, Nitrile, cut-resistant ☒ OTHER: Dusk mask, insect repellant, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Vac-Truck or Vac Drum, Compressor, Jack Hammer, Air Knife. Circular Saw, Hand Tools, Dust Mask, Photoionization Detector, Multi Gas Meter, 42 inch safety cones and flags, Retractable Cone Bars, Caution Tape, 20 lb. Fire Extinguisher, "Work Area" Signs, Pressurized Water Sprayer

Commitment to Safety – All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE: All non-essential personnel will maintain a distance of 10 feet from drilling equipment while equipment is moving/engaged

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Verify pre-clearance protocol	**1a. CONTACT:** Underground utility damage; property damage; personal injury	1a. Confirm that (if applicable) "Call Before You Dig" and local utility companies were contacted prior to starting work in order to confirm utility mark outs. Must have a case # before digging. 1a Walk the Site to evaluate utility markings and review maps (see Site Walk Inspection JSA). Utilities are not always properly marked out ensure use of observational skills through the pre-clearing checklist. 1a. Review pre-clearing checklist fromm and sub-surface clearance form. Pre-clearing protocol indicates that clearance must be conducted to a minimum of 5 vertical feet below ground surface or 10 vertical feet below ground surface in the critical zone using hand tools.
	1b. ENERGY SOURCE/CONTACT: Property damage; Pressurized water mains may cause lacerations or broken bones. Pressurized gas mains may explode causing serious injury, or death. Underground electric may cause severe burns, shock, or death.	1b. Pre-clearing of each soil boring/monitoring well location must be conducted to a minimum of 5 vertical feet below the ground surface (10 feet minimum for Critical Zone) using hand tools (shovel and non-metallic dig bar and hand auger) prior to drilling. Supervisor should be contacted to discuss appropriate pre-clearing depth. 1b. MUST Complete subsurface clearance checklist prior to pre-clearance.
	1c. FALL: Slip, Trip or Fall may cause muscle strains or tears, abrasions, lacerations, or broken bones.	1c. Be aware of the conditions when walking or loading equipment and working. Walk within established pathway avoiding uneven surfaces. Remove potential slip/trip/fall hazards.
2. Mobilize/demobilize and establish work area	**2a. SEE MOBILIZATION / DEMOBILIZATION JSA**	2a. See Mobilization / Demobilization JSA
3. Concrete saw cutting, jack hammer and hand clearance with hand tools, air knife	**3a. CONTACT:** Flying debris striking face or body	3a Maintain 10' minimum exclusion zone. Use the required PPE (i.e., leather/cut proof gloves, safety glasses/face shield). 3a. Use anti-whip devices on compressor hoses. 3a Wear a face shield to protect face from flying debris when using air knife. 3a. Utilize a traffic cone or physical barriers over the hole during air knife activities to keep flying debris close to ground.
	3b. EXPOSURE: Inhalation/exposure to hazardous vapors and/or concrete dust, noise exposure	3b. Monitor breathing zone with a calibrated PID and/or multi-gas meter. If meters sustain readings greater than recommeneded in the HASP for the specific contaminant of concerns (COCs) the Roux field personnel must temporarily cease work, instruct all Site personnel to step away from the area of elevated readings. Contact PM. 3b. Wet concrete while using saw to minimize dust and wear dust mask to prevent inhalation. 3b. Stand upwind and keep body behind saw. Observers and helpers should avoid line of fire for saw blade. Always cut away from body. 3b. No open flames/heat sources. 3b. Wear hearing protection when saw, jackhammer or air compressor are in operation. Otherwise, if sound levels exceed 85 dbA, put on hearing protection.
	3c. ENERGY SOURCE/CONTACT: Property damage; Pressurized water	

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into five types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift." Avoid general statements such as, "be careful."

	mains may cause lacerations or broken bones. Pressurized gas mains may explode causing serious injury, or death. Underground electric may cause severe burns, shock, or death.	3c. For air knifing, ensure extention/lance tip reaches the full 5 feet bgs. Air knife should be advanced **AT A MINIMUM** in all four corners of the expected boring location to find any possible arrangement of utilities. 3c. Ensure diameter of soil preclearance hole is at a **MINIMUM 2x** the diameter of any drilling or hard dig equipment that will be entering the hole. 3c. See Complete subsurface clearance protocol for information provided above.
	3d. ERGONOMICS/EXERTION: Muscle strain due to poor body positioning when handling equipment and materials	3d. Use body positioning and lifting techniques that minimizes muscle strain; keep back straight, lift with legs, keep load close to body, and never reach with a load. 3d. Ensure that loads are balanced to reduce the potential for muscle strain. 3d. Two people or a mechanical lifting aid are required when lifting objects over 50 lbs. or when the shape makes the object difficult to lift.
	3e. FALL: Tripping/falling due to uneven terrain, weather conditions, and materials/equipment stored at the Site	3e. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. Mob/Demob JSA. 3e. Do not climb over stored materials/equipment; walk around. Practice good housekeeping. 3e. Use established pathways and walk on stable, secure ground. 3e. Equipment and tools will be stored at the lowest point of potential energy and out of the walkway and immediate work area (i.e. tools should not be propped against walls or nearby equipment or vehicles). 3e. Equipment and tools that are not anticipated to be used will be returned to a storage area that is out of the immediate work area. 3e. Ensure power cords and compressed air lines are grouped when used within the work area. 3e. Pre-cleared location will be finished flush to grade as to prevent a slip/trip hazard or coned and taped off.
	3f. CAUGHT: Amputation points associated with the equipment and vacuum hose	3f. Always wear leather gloves when making connections and using hand tools; wear cut-resistant (i.e., Kevlar) gloves when handling cutting tools. 3f. Inspect the equipment prior to use for potential pinch points. 3f. Test all emergency shutdown devices prior to using equipment. 3f. Inspect saw blade for worn surface or missing teeth; switch blade if damaged or blunt. 3f. Ensure all jewelry is removed, loose clothing is secured, and PPE is secured close to the body. 3f. All non-essential personnel shall maintain a 10 foot exclusion zone; position body out of the line-of-fire of equipment. 3f. Drillers and helpers will understand and use the “Show Me Your Hands Policy”.
4. Move drum to staging area using drum cart	**4a. EXPOSURE/CONTACT:** Contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated groundwater, soil)	4a. Wear Nitrile chemical-resistant gloves under leather or cut proof gloves. 4a. Do not overfill drums. Ensure that the drum lids are attached securely. 4a. All drums will be staged in the designated storage area.
	4b. EXERTION: Muscle strain while maneuvering drums with drum cart/lift gate	4b. See 3d. Do not overfill drums. Use lift gate on back of truck to load and unload drums. Use drum dolly to move drum.
	4c. CAUGHT: Pinch points associated with handling drum lid	4c. Ensure that fingers are not placed under the lid of the drum. Wear leather gloves or cut proof gloves. Use appropriate ratchet while sealing drum lid.
5. Decontaminate equipment.	**5a. EXPOSURE/CONTACT**: To contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated groundwater, vapors).	5a. Wear chemical-resistant disposable gloves and safety glasses. 5a. Contain decontamination water so that it does not spill. 5a. Use an absorbent pad to clean spills, if necessary. 5a. Spray equipment from side angle, not straight on, to avoid backsplash. 5a. See 3b.
	5b. EXPOSURE: To chemicals in cleaning solution.	5b. See 4a. Review SDS to ensure appropriate precautions are taken and understood.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.

[2] A hazard is a potential danger. Break hazards into five types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards.

[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

APPENDIX B

SDSs for Chemicals Used

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

1 Identification of the substance/mixture and of the supplier

1.1 Product identifier

Trade Name: Alconox
Synonyms:
Product number: Alconox

1.2 Application of the substance / the mixture : Cleaning material/Detergent

1.3 Details of the supplier of the Safety Data Sheet

Manufacturer
Alconox, Inc.
30 Glenn Street
White Plains, NY 10603
1-914-948-4040

Supplier
Not Applicable

Emergency telephone number:
ChemTel Inc
North America: 1-800-255-3924
International: 01-813-248-0585

2 Hazards identification

2.1 Classification of the substance or mixture:

In compliance with EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments.

Hazard-determining components of labeling:
Tetrasodium Pyrophosphate
Sodium tripolyphosphate
Sodium Alkylbenzene Sulfonate

2.2 Label elements:

Skin irritation, category 2.
Eye irritation, category 2A.

Hazard pictograms:

Signal word: Warning

Hazard statements:
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements:
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P321 Specific treatment (see supplemental first aid instructions on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P501 Dispose of contents and container as instructed in Section 13.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

Additional information: None.

Hazard description

Hazards Not Otherwise Classified (HNOC): None

Information concerning particular hazards for humans and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:

The classification is according to EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments, and extended by company and literature data. The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

3 Composition/information on ingredients

3.1 Chemical characterization : None

3.2 Description : None

3.3 Hazardous components (percentages by weight)

Identification	Chemical Name	Classification	Wt. %
CAS number: 7758-29-4	Sodium tripolyphosphate	Skin Irrit. 2 ; H315 Eye Irrit. 2; H319	12-28
CAS number: 68081-81-2	Sodium Alkylbenzene Sulfonate	Acute Tox. 4; H303 Skin Irrit. 2 ; H315 Eye Irrit. 2; H319	8-22
CAS number: 7722-88-5	Tetrasodium Pyrophosphate	Skin Irrit. 2 ; H315 Eye Irrit. 2; H319	2-16

3.4 Additional Information : None.

4 First aid measures

4.1 Description of first aid measures

General information: None.

After inhalation:

Maintain an unobstructed airway.

Loosen clothing as necessary and position individual in a comfortable position.

After skin contact:

Wash affected area with soap and water.

Seek medical attention if symptoms develop or persist.

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes.

Remove contact lens(es) if able to do so during rinsing.

Seek medical attention if irritation persists or if concerned.

After swallowing:

Rinse mouth thoroughly.

Seek medical attention if irritation, discomfort, or vomiting persists.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

4.2 Most important symptoms and effects, both acute and delayed

None

4.3 Indication of any immediate medical attention and special treatment needed:

No additional information.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

For safety reasons unsuitable extinguishing agents : None

5.2 Special hazards arising from the substance or mixture :

Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Advice for firefighters

Protective equipment:

Wear protective eye wear, gloves and clothing.
Refer to Section 8.

5.4 Additional information :

Avoid inhaling gases, fumes, dust, mist, vapor and aerosols.
Avoid contact with skin, eyes and clothing.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures :

Ensure adequate ventilation.
Ensure air handling systems are operational.

6.2 Environmental precautions :

Should not be released into the environment.
Prevent from reaching drains, sewer or waterway.

6.3 Methods and material for containment and cleaning up :

Wear protective eye wear, gloves and clothing.

6.4 Reference to other sections : None

7 Handling and storage

7.1 Precautions for safe handling :

Avoid breathing mist or vapor.
Do not eat, drink, smoke or use personal products when handling chemical substances.

7.2 Conditions for safe storage, including any incompatibilities :

Store in a cool, well-ventilated area.

7.3 Specific end use(s):

No additional information.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

8 Exposure controls/personal protection

8.1 Control parameters :

7722-88-5, Tetrasodium Pyrophosphate, OSHA TWA 5 mg/m3.

8.2 Exposure controls

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.

Respiratory protection:

Not needed under normal conditions.

Protection of skin:

Select glove material impermeable and resistant to the substance.

Eye protection:

Safety goggles or glasses, or appropriate eye protection.

General hygienic measures:

Wash hands before breaks and at the end of work.
Avoid contact with skin, eyes and clothing.

9 Physical and chemical properties

Appearance (physical state, color):	White and cream colored flakes - powder	**Explosion limit lower**: **Explosion limit upper**:	Not determined or not available. Not determined or not available.
Odor:	Not determined or not available.	**Vapor pressure at 20°C**:	Not determined or not available.
Odor threshold:	Not determined or not available.	**Vapor density**:	Not determined or not available.
pH-value:	9.5 (aqueous solution)	**Relative density**:	Not determined or not available.
Melting/Freezing point:	Not determined or not available.	**Solubilities**:	Not determined or not available.
Boiling point/Boiling range:	Not determined or not available.	**Partition coefficient (n-octanol/water)**:	Not determined or not available.
Flash point (closed cup):	Not determined or not available.	**Auto/Self-ignition temperature**:	Not determined or not available.
Evaporation rate:	Not determined or not available.	**Decomposition temperature**:	Not determined or not available.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

Flammability (solid, gaseous):	Not determined or not available.	**Viscosity**:	a. Kinematic: Not determined or not available. b. Dynamic: Not determined or not available.
Density at 20°C:	Not determined or not available.		

10 Stability and reactivity

10.1 Reactivity : None

10.2 Chemical stability : None

10.3 Possibility hazardous reactions : None

10.4 Conditions to avoid : None

10.5 Incompatible materials : None

10.6 Hazardous decomposition products : None

11 Toxicological information

11.1 Information on toxicological effects :

Acute Toxicity:

Oral:

: LD50 > 5000 mg/kg oral rat - Product .

Chronic Toxicity: No additional information.

Skin corrosion/irritation:

Sodium Alkylbenzene Sulfonate: Causes skin irritation. .

Serious eye damage/irritation:

Sodium Alkylbenzene Sulfonate: Causes serious eye irritation .

Tetrasodium Pyrophosphate: Rabbit - Risk of serious damage to eyes .

Respiratory or skin sensitization: No additional information.

Carcinogenicity: No additional information.

IARC (International Agency for Research on Cancer): None of the ingredients are listed.

NTP (National Toxicology Program): None of the ingredients are listed.

Germ cell mutagenicity: No additional information.

Reproductive toxicity: No additional information.

STOT-single and repeated exposure: No additional information.

Additional toxicological information: No additional information.

12 Ecological information

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

12.1 Toxicity:

Sodium Alkylbenzene Sulfonate: Fish, LC50 1.67 mg/l, 96 hours.
Sodium Alkylbenzene Sulfonate: Aquatic invertebrates, EC50 Daphnia 2.4 mg/l, 48 hours.
Sodium Alkylbenzene Sulfonate: Aquatic Plants, EC50 Algae 29 mg/l, 96 hours.
Tetrasodium Pyrophosphate: Fish, LC50 - other fish - 1,380 mg/l - 96 h.
Tetrasodium Pyrophosphate: Aquatic invertebrates, EC50 - Daphnia magna (Water flea) - 391 mg/l - 48 h.

12.2 Persistence and degradability: No additional information.

12.3 Bioaccumulative potential: No additional information.

12.4 Mobility in soil: No additional information.

General notes: No additional information.

12.5 Results of PBT and vPvB assessment:

PBT: No additional information.

vPvB: No additional information.

12.6 Other adverse effects: No additional information.

13 Disposal considerations

13.1 Waste treatment methods (consult local, regional and national authorities for proper disposal)

Relevant Information:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities. (US 40CFR262.11).

14 Transport information

14.1 UN Number: ADR, ADN, DOT, IMDG, IATA	None
14.2 UN Proper shipping name: ADR, ADN, DOT, IMDG, IATA	None
14.3 Transport hazard classes: ADR, ADN, DOT, IMDG, IATA	**Class:** None **Label:** None **LTD. QTY:** None

US DOT

Limited Quantity Exception: None

Bulk:
RQ (if applicable): None
Proper shipping Name: None
Hazard Class: None
Packing Group: None
Marine Pollutant (if applicable): No additional information.

Non Bulk:
RQ (if applicable): None
Proper shipping Name: None
Hazard Class: None
Packing Group: None
Marine Pollutant (if applicable): No additional information.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

Comments: None	**Comments:** None
14.4 Packing group: ADR, ADN, DOT, IMDG, IATA	None
14.5 Environmental hazards :	None
14.6 Special precautions for user:	None
Danger code (Kemler):	None
EMS number:	None
Segregation groups:	None

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

14.8 Transport/Additional information:

Transport category:	None
Tunnel restriction code:	None
UN "Model Regulation":	None

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.

North American

SARA

Section 313 (specific toxic chemical listings): None of the ingredients are listed.
Section 302 (extremely hazardous substances): None of the ingredients are listed.

CERCLA (Comprehensive Environmental Response, Clean up and Liability Act) Reportable

Spill Quantity: None of the ingredients are listed.

TSCA (Toxic Substances Control Act):

Inventory: All ingredients are listed.
Rules and Orders: Not applicable.

Proposition 65 (California):

Chemicals known to cause cancer: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Canadian

Canadian Domestic Substances List (DSL):
All ingredients are listed.

EU

REACH Article 57 (SVHC): None of the ingredients are listed.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

Germany MAK: Not classified.

Asia Pacific

Australia

Australian Inventory of Chemical Substances (AICS): All ingredients are listed.

China

Inventory of Existing Chemical Substances in China (IECSC): All ingredients are listed.

Japan

Inventory of Existing and New Chemical Substances (ENCS): All ingredients are listed.

Korea

Existing Chemicals List (ECL): All ingredients are listed.

New Zealand

New Zealand Inventory of Chemicals (NZOIC): All ingredients are listed.

Philippines

Philippine Inventory of Chemicals and Chemical Substances (PICCS): All ingredients are listed.

Taiwan

Taiwan Chemical Substance Inventory (TSCI): All ingredients are listed.

16 Other information

Abbreviations and Acronyms: None

Summary of Phrases

Hazard statements:

H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements:

P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P321 Specific treatment (see supplemental first aid instructions on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P501 Dispose of contents and container as instructed in Section 13.

Manufacturer Statement:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

NFPA: 1-0-0

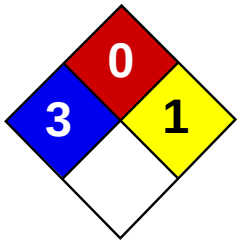
Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

HMIS: 1-0-0



Material Safety Data Sheet
Hydrochloric acid MSDS

Section 1: Chemical Product and Company Identification

Product Name: Hydrochloric acid

Catalog Codes: SLH1462, SLH3154

CAS#: Mixture.

RTECS: MW4025000

TSCA: TSCA 8(b) inventory: Hydrochloric acid

CI#: Not applicable.

Synonym: Hydrochloric Acid; Muriatic Acid

Chemical Name: Not applicable.

Chemical Formula: Not applicable.

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Hydrogen chloride	7647-01-0	20-38
Water	7732-18-5	62-80

Toxicological Data on Ingredients: Hydrogen chloride: GAS (LC50): Acute: 4701 ppm 0.5 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant, corrosive), of ingestion, . Slightly hazardous in case of inhalation (lung sensitizer). Non-corrosive for lungs. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer). CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for human.) by IARC [Hydrochloric acid]. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, mucous membranes, upper respiratory tract, skin, eyes, Circulatory System, teeth. Repeated or prolonged exposure to the substance can produce target

organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: of metals

Explosion Hazards in Presence of Various Substances: Non-explosive in presence of open flames and sparks, of shocks.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:
Non combustible. Calcium carbide reacts with hydrogen chloride gas with incandescence. Uranium phosphide reacts with hydrochloric acid to release spontaneously flammable phosphine. Rubidium acetylene carbides burns with slightly warm hydrochloric acid. Lithium silicide in contact with hydrogen chloride becomes incandescent. When dilute hydrochloric acid is used, gas spontaneously flammable in air is evolved. Magnesium boride treated with concentrated hydrochloric acid produces spontaneously flammble gas. Cesium acetylene carbide burns hydrogen chloride gas. Cesium carbide ignites in contact with hydrochloric acid unless acid is dilute. Reacts with most metals to produce flammable Hydrodgen gas.

Special Remarks on Explosion Hazards:

Hydrogen chloride in contact with the following can cause an explosion, ignition on contact, or other violent/vigorous reaction: Acetic anhydride AgClO + CCl4 Alcohols + hydrogen cyanide, Aluminum Aluminum-titanium alloys (with HCl vapor), 2-Amino ethanol, Ammonium hydroxide, Calcium carbide Ca3P2 Chlorine + dinitroanilines (evolves gas), Chlorosulfonic acid Cesium carbide Cesium acetylene carbide, 1,1-Difluoroethylene Ethylene diamine Ethylene imine, Fluorine, HClO4 Hexalithium disilicide H2SO4 Metal acetylides or carbides, Magnesium boride, Mercuric sulfate, Oleum, Potassium permanganate, beta-Propiolactone Propylene oxide Rubidium carbide, Rubidium, acetylene carbide Sodium (with aqueous HCl), Sodium hydroxide Sodium tetraselenium, Sulfonic acid, Tetraselenium tetranitride, U3P4 , Vinyl acetate. Silver perchlorate with carbon tetrachloride in the presence of hydrochloric acid produces trichloromethyl perchlorate which detonates at 40 deg. C.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

Large Spill:
Corrosive liquid. Poisonous liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep container dry. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, organic materials, metals, alkalis, moisture. May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
CEIL: 5 (ppm) from OSHA (PEL) [United States] CEIL: 7 (mg/m3) from OSHA (PEL) [United States] CEIL: 5 from NIOSH CEIL: 7 (mg/m3) from NIOSH TWA: 1 STEL: 5 (ppm) [United Kingdom (UK)] TWA: 2 STEL: 8 (mg/m3) [United Kingdom (UK)]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Pungent. Irritating (Strong.)

Taste: Not available.

Molecular Weight: Not applicable.

Color: Colorless to light yellow.

pH (1% soln/water): Acidic.

Boiling Point:
108.58 C @ 760 mm Hg (for 20.22% HCl in water) 83 C @ 760 mm Hg (for 31% HCl in water) 50.5 C (for 37% HCl in water)

Melting Point:
-62.25°C (-80°F) (20.69% HCl in water) -46.2 C (31.24% HCl in water) -25.4 C (39.17% HCl in water)

Critical Temperature: Not available.

Specific Gravity:
1.1- 1.19 (Water = 1) 1.10 (20%and 22% HCl solutions) 1.12 (24% HCl solution) 1.15 (29.57% HCl solution) 1.16 (32% HCl solution) 1.19 (37% and 38%HCl solutions)

Vapor Pressure: 16 kPa (@ 20°C) average

Vapor Density: 1.267 (Air = 1)

Volatility: Not available.

Odor Threshold: 0.25 to 10 ppm

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, diethyl ether.

Solubility: Soluble in cold water, hot water, diethyl ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, water

Incompatibility with various substances:
Highly reactive with metals. Reactive with oxidizing agents, organic materials, alkalis, water.

Corrosivity:
Extremely corrosive in presence of aluminum, of copper, of stainless steel(304), of stainless steel(316). Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Reacts with water especially when water is added to the product. Absorption of gaseous hydrogen chloride on mercuric sulfate becomes violent @ 125 deg. C. Sodium reacts very violently with gaseous hydrogen chloride. Calcium phosphide and hydrochloric acid undergo very energetic reaction. It reacts with oxidizers releasing chlorine gas. Incompatible with, alkali metals, carbides, borides, metal oxides, vinyl acetate, acetylides, sulphides, phosphides, cyanides, carbonates. Reacts with most metals to produce flammable Hydrogen gas. Reacts violently (moderate reaction with heat of evolution) with water especially when water is added to the product. Isolate hydrogen chloride from heat, direct sunlight, alkalies (reacts vigorously), organic materials, and oxidizers (especially nitric acid and chlorates), amines, metals, copper and alloys (e.g. brass), hydroxides, zinc (galvanized materials), lithium silicide (incandescence), sulfuric acid(increase in temperature and pressure) Hydrogen chloride gas is emitted when this product is in contact with sulfuric acid. Adsorption of Hydrochloric Acid onto silicon dioxide results in exothmeric reaction. Hydrogen chloride causes aldehydes and epoxides to violently polymerize. Hydrogen chloride or Hydrochloric Acid in contact with the folloiwng can cause explosion or ignition on contact or

Special Remarks on Corrosivity:

Highly corrosive. Incompatible with copper and copper alloys. It attacks nearly all metals (mercury, gold, platinium, tantalum, silver, and certain alloys are exceptions). It is one of the most corrosive of the nonoxidizing acids in contact with copper alloys. No corrosivity data on zinc, steel. Severe Corrosive effect on brass and bronze

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation.

Toxicity to Animals:
Acute oral toxicity (LD50): 900 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 1108 ppm, 1 hours [Mouse]. Acute toxicity of the vapor (LC50): 3124 ppm, 1 hours [Rat].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for human.) by IARC [Hydrochloric acid]. May cause damage to the following organs: kidneys, liver, mucous membranes, upper respiratory tract, skin, eyes, Circulatory System, teeth.

Other Toxic Effects on Humans:
Very hazardous in case of skin contact (corrosive, irritant, permeator), of ingestion, . Hazardous in case of eye contact (corrosive), of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Doses (LDL/LCL) LDL [Man] -Route: Oral; 2857 ug/kg LCL [Human] - Route: Inhalation; Dose: 1300 ppm/30M LCL [Rabbit] - Route: Inhalation; Dose: 4413 ppm/30M

Special Remarks on Chronic Effects on Humans:
May cause adverse reproductive effects (fetoxicity). May affect genetic material.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Corrosive. Causes severe skin irritation and burns. Eyes: Corrosive. Causes severe eye irritation/conjuntivitis, burns, corneal necrosis. Inhalation: May be fatal if inhaled. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Inhalation of hydrochloric acid fumes produces nose, throat, and larryngeal burning, and irritation, pain and inflammation, coughing, sneezing, choking sensation, hoarseness, laryngeal spasms, upper respiratory tract edema, chest pains, as well has headache, and palpitations. Inhalation of high concentrations can result in corrosive burns, necrosis of bronchial epithelium, constriction of the larynx and bronchi, nasospetal perforation, glottal closure, occur, particularly if exposure is prolonged. May affect the liver. Ingestion: May be fatal if swallowed. Causes irritation and burning, ulceration, or perforation of the gastrointestinal tract and resultant peritonitis, gastric hemorrhage and infection. Can also cause nausea, vomitting (with "coffee ground" emesis), diarrhea, thirst, difficulty swallowing, salivation, chills, fever, uneasiness, shock, strictures and stenosis (esophogeal, gastric, pyloric). May affect behavior (excitement), the cardiovascular system (weak rapid pulse, tachycardia), respiration (shallow respiration), and urinary system (kidneys- renal failure, nephritis). Acute exposure via inhalation or ingestion can also cause erosion of tooth enamel. Chronic Potential Health Effects: dyspnea, bronchitis. Chemical pneumonitis and pulmonary edema can also

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Class 8: Corrosive material

Identification: : Hydrochloric acid, solution UNNA: 1789 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Hydrochloric acid Illinois toxic substances disclosure to employee act: Hydrochloric acid Illinois chemical safety act: Hydrochloric acid New York release reporting list: Hydrochloric acid Rhode Island RTK hazardous substances: Hydrochloric acid Pennsylvania RTK: Hydrochloric acid Minnesota: Hydrochloric acid Massachusetts RTK: Hydrochloric acid Massachusetts spill list: Hydrochloric acid New Jersey: Hydrochloric acid New Jersey spill list: Hydrochloric acid Louisiana RTK reporting list: Hydrochloric acid Louisiana spill reporting: Hydrochloric acid California Director's List of Hazardous Substances: Hydrochloric acid TSCA 8(b) inventory: Hydrochloric acid TSCA 4(a) proposed test rules: Hydrochloric acid SARA 302/304/311/312 extremely hazardous substances: Hydrochloric acid SARA 313 toxic chemical notification and release reporting: Hydrochloric acid CERCLA: Hazardous substances.: Hydrochloric acid: 5000 lbs. (2268 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS D-2A: Material causing other toxic effects (VERY TOXIC). CLASS E: Corrosive liquid.

DSCL (EEC):
R34- Causes burns. R37- Irritating to respiratory system. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 1

Personal Protection:

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

Section 16: Other Information

References:
-Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. -SAX, N.I. Dangerous Properties of Indutrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984. -The Sigma-Aldrich Library of Chemical Safety Data, Edition II. -Guide de la loi et du règlement sur le transport des marchandises dangeureuses au canada. Centre de conformité internatinal Ltée. 1986.

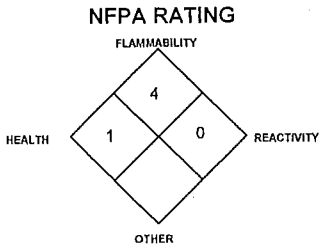
Other Special Considerations: Not available.

Created: 10/09/2005 05:45 PM

Last Updated: 05/21/2013 12:00 PM

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards



PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS:	**ISOBUTYLENE - C_4H_8** Document Number: Isobutylene
PRODUCT USE:	For general analytical/synthetic chemical uses.
SUPPLIER/MANUFACTURER'S NAME: ADDRESS:	MESA Specialty Gases & Equipment 3619 Pendleton Avenue, Suite C Santa Ana, CA 92704
BUSINESS PHONE: EMERGENCY PHONE:	1-714-434-7102 INFOTRAC: 1-800-535-5053
DATE OF PREPARATION:	May 10, 1999

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV ppm	STEL ppm	PEL ppm	STEL ppm	IDLH ppm	OTHER
Isobutylene	115-11-7	> 99.0%	There are no specific exposure limits for Isobutylene. Isobutylene is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.					
Maximum Impurities		< 1.0%	None of the trace impurities in this mixture contribute significantly to the hazards associated with the product. All hazard information pertinent to this product has been provided in this Material Safety Data Sheet, per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards.					

NE = Not Established C = Ceiling Limit See Section 16 for Definitions of Terms Used

NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Isobutylene is a colorless, liquefied, flammable gas with an unpleasant odor similar to burning coal. The liquefied gas rapidly turns into a gas at standard atmospheric temperatures and pressures. Isobutylene is an asphyxiant and presents a significant health hazard by displacing the oxygen in the atmosphere. Rapid evaporation of liquid from the cylinder may cause frostbite. Both the liquid and gas pose a serious fire hazard when accidentally released. The gas is heavier than air and may travel to a source of ignition and flash back to a leak or open container. Flame or high temperature impinging on a localized area of a cylinder of Isobutylene can cause the cylinder to rupture without activating the cylinder's relief devices. Provide adequate fire protection during emergency response situations.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant route of overexposure for this gas is by inhalation. The following paragraphs describe symptoms of exposure by route of exposure.

INHALATION: High concentrations of this gas can cause an oxygen-deficient environment. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of overexposure, death may occur. Isobutylene also has some degree of anesthetic action and can be mildly irritating to the mucous membranes. The effects associated with various levels of oxygen are as follows:

CONCENTRATION	SYMPTOMS OF EXPOSURE
12-16% Oxygen:	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea and vomiting, collapse or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

OTHER POTENTIAL HEALTH EFFECTS: Contact with liquid or rapidly expanding gases (which are released under high pressure) may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after such contact can quickly subside.

HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	1
FLAMMABILITY	(RED)	4
REACTIVITY	(YELLOW)	0
PROTECTIVE EQUIPMENT		B

EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8

For routine industrial applications

See Section 16 for Definition of Ratings

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in **Lay Terms**. Overexposure to Isobutylene may cause the following health effects:

ACUTE: The most significant hazard associated with this gas is inhalation of oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, headache, dizziness, and nausea. At high concentrations, unconsciousness or death may occur. Contact with liquefied gas or rapidly expanding gases may cause frostbite.

CHRONIC: There are currently no known adverse health effects associated with chronic exposure to Isobutylene.

TARGET ORGANS: Respiratory system.

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO ISOBUTYLENE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus and Fire-Retardant Personal Protective equipment should be worn. Adequate fire protection must be provided during rescue situations.

4. FIRST-AID MEASURES (Continued)

Remove victim(s) to fresh air as quickly as possible. Trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary. Only trained personnel should administer supplemental oxygen.

In case of frostbite, place the frostbitten part in warm water. DO NOT USE HOT WATER. If warm water is not available, or is impractical to use, wrap the affected parts gently in blankets. Alternatively, if the fingers or hands are frostbitten, place the affected area in the armpit. Encourage victim to gently exercise the affected part while being warmed. Seek immediate medical attention.

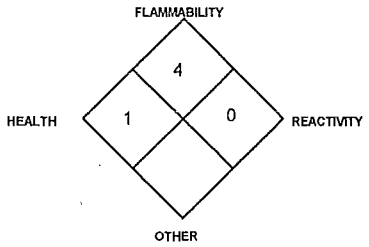
Victim(s) must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with victim(s).

5. FIRE-FIGHTING MEASURES

FLASH POINT (Closed Cup): -10°C (< 14°F)
AUTOIGNITION TEMPERATURE: 465°C (869°F)
FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): 1.8%
Upper (UEL): 9.6%

NFPA RATING



See Section 16 for Definition of Ratings

FIRE EXTINGUISHING MATERIALS: Extinguish Isobutylene fires by shutting off the source of the gas. Use water spray or a foam agent to cool fire-exposed containers, structures, and equipment.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material may ignite and produce toxic gases, including carbon monoxide and carbon dioxide.

DANGER! Fires impinging (direct flame) on the outside surface of unprotected pressure storage vessels of Isobutylene can be very dangerous. Direct flame exposure on the cylinder wall can cause an explosion either by BLEVE (Boiling Liquid Expanding Vapor Explosion), or by exothermic decomposition. This is a catastrophic failure of the vessel releasing the contents into a massive fireball and explosion. The resulting fire and explosion can result in severe equipment damage and personnel injury or death over a large area around the vessel. For massive fires in large areas, use unmanned hose holder or monitor nozzles; if this is not possible, withdraw from area and allow fire to burn.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Static discharge may cause Isobutylene to ignite explosively if released.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. The best fire-fighting technique may be simply to let the burning gas escape from the pressurized cylinder, tank car, or pipeline. Stop the leak before extinguishing fire. If the fire is extinguished before the leak is sealed, the leaking gas could explosively re-ignite without warning and cause extensive damage, injury, or fatality. In this case, increase ventilation (in enclosed areas) to prevent flammable or explosive mixture formation. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Because of the potential for a BLEVE, evacuation of non-emergency personnel is essential. If water is not available for cooling or protection of vessel exposures, evacuate the area. Refer to the North American Emergency Response Guidebook for additional information. Other information for pre-planning can be found in the American Petroleum Institute Publications 2510 and 2510A.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a release, clear the affected area, protect people, and respond with trained personnel. Adequate fire protection must be provided. Minimum Personal Protective Equipment should be **Level B: fire-retardant protective clothing, gloves resistant to tears, and Self-Contained Breathing Apparatus.**

Use only non-sparking tools and equipment. Locate and seal the source of the leaking gas. Protect personnel attempting the shut off with water spray. Allow the gas to dissipate. Monitor the surrounding area for combustible gas levels and oxygen. Combustible gas concentration must be below 10% of the LEL (LEL = 1.8%) prior to entry. The atmosphere must have at least 19.5 percent oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus. Attempt to close the main source valve prior to entering the area. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in place or remove it to a safe area and allow the gas to be released there.

THIS IS AN EXTREMELY FLAMMABLE GAS. Protection of all personnel and the area must be maintained.

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting Isobutylene IN YOU. Do not eat or drink while handling chemicals. Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of Isobutylene could occur without any significant warning symptoms.

STORAGE AND HANDLING PRACTICES: Cylinders should be stored in dry, well-ventilated areas away from sources of heat. Compressed gases can present significant safety hazards. Store containers away from heavily trafficked areas and emergency exits. Post "No Smoking or Open Flames" signs in storage or use areas.

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: Protect cylinders against physical damage. Store in cool, dry, well-ventilated area, away from sources of heat, ignition and direct sunlight. Do not allow area where cylinders are stored to exceed 52°C (125°F). Isolate from oxidizers such as oxygen, chlorine, or fluorine. Use a check valve or trap in the discharge line to prevent hazardous backflow. Post "No Smoking or Open Flame" signs in storage and use areas. Cylinders should be stored upright and be firmly secured to prevent falling or being knocked over. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting. Never tamper with pressure relief devices in valves and cylinders. Electrical equipment should be non-sparking or explosion proof. The following rules are applicable to situations in which cylinders are being used:

Before Use: Move cylinders with a suitable hand truck. Do not drag, slide, or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap, if provided, in place until cylinder is ready for use.

During Use: Use designated CGA fittings and other support equipment. Do not use adapters. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Use check valve or trap in discharge line to prevent hazardous backflow into the cylinder. Do not use oils or grease on gas-handling fittings or equipment.

After Use: Close main cylinder valve. Replace valve protection cap, if provided. Mark empty cylinders "EMPTY".

NOTE: Use only DOT or ASME code containers. Earth-ground and bond all lines and equipment associated with Isobutylene. Close valve after each use and when empty. Cylinders must not be recharged except by or with the consent of owner. For additional information refer to the Compressed Gas Association Pamphlet P-1, *Safe Handling of Compressed Gases in Containers*. Additionally, refer to CGA Bulletin SB-2 "*Oxygen Deficient Atmospheres*".

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Purge gas handling equipment with inert gas (e.g., nitrogen) before attempting repairs.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust ventilation is preferred, because it prevents Isobutylene dispersion into the work place by eliminating it at its source. If appropriate, install automatic monitoring equipment to detect the presence of potentially explosive air-gas mixtures and level of oxygen.

RESPIRATORY PROTECTION: Maintain oxygen levels above 19.5% in the workplace. Maintain level of gas below the level listed in Section 2 (Composition and Information on Ingredients). Use supplied air respiratory protection if oxygen levels are below 19.5% or during emergency response to a release of Isobutylene. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134) or equivalent State standards.

EYE PROTECTION: Splash goggles or safety glasses, for protection from rapidly expanding gases and splashes of liquid Isobutylene.

HAND PROTECTION: Wear gloves resistant to tears when handling cylinders of Isobutylene. Use low-temperature protective gloves (e.g., Kevlar) when working with containers of liquid Isobutylene.

BODY PROTECTION: Use body protection appropriate for task. Transfer of large quantities under pressure may require protective equipment appropriate to protect employees from splashes of liquefied product, as well as fire retardant items.

9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY @ 21.1°C (70°F): 2.396 kg/m^3 (0.1496 lb/ft^3)
SPECIFIC GRAVITY (air = 1): 1.997
SOLUBILITY IN WATER: Insoluble.
EVAPORATION RATE (nBuAc = 1): Not applicable.
ODOR THRESHOLD: Not established.
COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

pH: Not applicable.
FREEZING POINT: -140°C (-220.6°F)
BOILING POINT @ 1 atm: -6.9°C (19.6°F)
EXPANSION RATIO: Not applicable
VAPOR PRESSURE (psia): 39
SPECIFIC VOLUME (ft^3/lb): 6.7

APPEARANCE AND COLOR: Colorless gas with the unpleasant odor of burning coal. The liquid is also colorless and has the same unpleasant odor of burning coal.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no distinct warning properties. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: When ignited in the presence of oxygen, this gas will burn to produce carbon monoxide and carbon dioxide.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers (e.g., chlorine, bromine pentafluoride, oxygen, oxygen difluoride, and nitrogen trifluoride).

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Contact with incompatible materials and exposure to heat, sparks, and other sources of ignition. Cylinders exposed to high temperatures or direct flame can rupture or burst.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following information is for pure Isobutylene.

ISOBUTYLENE:
LC_{50} (rat, inhalation) = 620 g/m^3/4 hours
LC_{50} (mouse, inhalation) = 415 g/m^3/2 hours

SUSPECTED CANCER AGENT: Isobutylene is not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, CAL/OSHA, and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Isobutylene may be mildly irritating to the mucous membranes. In addition, contact with rapidly expanding gases can cause frostbite to exposed tissue.

SENSITIZATION TO THE PRODUCT: Isobutylene is not known to cause sensitization in humans.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of Isobutylene on the human reproductive system.

Mutagenicity: No mutagenic effects have been described for Isobutylene.
Embryotoxicity: No embryotoxic effects have been described for Isobutylene.
Teratogenicity: No teratogenic effects have been described for Isobutylene.
Reproductive Toxicity: No reproductive toxicity effects have been described for Isobutylene.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory conditions may be aggravated by overexposure to Isobutylene.

11. TOXICOLOGICAL INFORMATION (Continued)

RECOMMENDATIONS TO PHYSICIANS: Administer oxygen, if necessary. Treat symptoms and eliminate exposure.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for Isobutylene.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: This gas will be dissipated rapidly in well-ventilated areas.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Any adverse effect on animals would be related to oxygen-deficient environments. No adverse effect is anticipated to occur to plant life, except for frost produced in the presence of rapidly expanding gases. See Section 11, Toxicological Information, for additional information on effects on animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on the effects of Isobutylene on aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Return cylinders with any residual product to MESA Specialty Gases & Equipment Do not dispose of locally.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

For Isobutylene Gas:

PROPER SHIPPING NAME:	Isobutylene
HAZARD CLASS NUMBER and DESCRIPTION:	2.1 (Flammable Gas)
UN IDENTIFICATION NUMBER:	UN 1055
PACKING GROUP:	Not Applicable
DOT LABEL(S) REQUIRED:	Flammable Gas

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996): 115

Alternate Description:

PROPER SHIPPING NAME:	Petroleum gases, liquefied
HAZARD CLASS NUMBER and DESCRIPTION:	2.1 (Flammable Gas)
UN IDENTIFICATION NUMBER:	UN 1075
PACKING GROUP:	Not Applicable
DOT LABEL(S) REQUIRED:	Flammable Gas

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996): 115

MARINE POLLUTANT: Isobutylene is not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

15. REGULATORY INFORMATION

U.S. SARA REPORTING REQUIREMENTS: Isobutylene is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: Not applicable.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

CANADIAN DSL/NDSL INVENTORY STATUS: Isobutylene is on the DSL Inventory.

U.S. TSCA INVENTORY STATUS: Isobutylene is listed on the TSCA Inventory.

15. REGULATORY INFORMATION (Continued)

OTHER U.S. FEDERAL REGULATIONS: Isobutylene is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for this gas is 10,000 lb. Depending on specific operations involving the use of Isobutylene, the regulations of the Process Safety Management of Highly Hazardous Chemicals may be applicable (29 CFR 1910.119). Under this regulation Isobutylene is not listed in Appendix A; however, any process that involves a flammable gas on-site, in one location, in quantities of 10,000 lb (4,553 kg) or greater is covered under this regulation unless it is used as a fuel.

U.S. STATE REGULATORY INFORMATION: Isobutylene is covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: Liquefied Petroleum Gas.
California - Permissible Exposure Limits for Chemical Contaminants: Liquefied Petroleum Gas.
Florida - Substance List: Isobutylene.
Illinois - Toxic Substance List: No.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: Isobutylene.
Michigan - Critical Materials Register: No.
Minnesota - List of Hazardous Substances: Liquefied Petroleum Gas.
Missouri - Employer Information/Toxic Substance List: No.
New Jersey - Right to Know Hazardous Substance List: Isobutylene.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.
Pennsylvania - Hazardous Substance List: Isobutylene.
Rhode Island - Hazardous Substance List: Liquefied Petroleum Gas.
Texas - Hazardous Substance List: Liquefied Petroleum Gas.
West Virginia - Hazardous Substance List: Liquefied Petroleum Gas.
Wisconsin - Toxic and Hazardous Substances: Liquefied Petroleum Gas.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Isobutylene is not on the California Proposition 65 lists.

LABELING:

DANGER: FLAMMABLE LIQUID AND GAS UNDER PRESSURE.
CAN FORM EXPLOSIVE MIXTURES WITH AIR.
MAY CAUSE FROSTBITE.

Keep away from heat, flames, and sparks.
Store and use with adequate ventilation.
Cylinder temperature should not exceed 52°C (125°F).
Do not get liquid in eyes, on skin, or clothing.
Close valve after each use and when empty.
Use in accordance with the Material Safety Data Sheet.

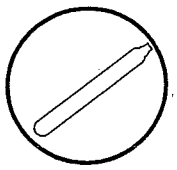
FIRST AID: **IF INHALED**, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

IN CASE OF FROSTBITE, obtain immediate medical attention.

DO NOT REMOVE THIS PRODUCT LABEL.

CANADIAN WHMIS SYMBOLS:

Class A: Compressed Gas
Class B1: Flammable Gas



16. OTHER INFORMATION

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. MESA Specialty Gases & Equipment assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, MESA Specialty Gases & Equipment assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

EXPOSURE LIMITS IN AIR:
ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits. **TLV** - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (**TWA**), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level (**C**). Skin absorption effects must also be considered.
OSHA - U.S. Occupational Safety and Health Administration. **PEL** - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.
IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). NIOSH issues exposure guidelines called Recommended Exposure Levels (**RELs**). When no exposure guidelines are established, an entry of **NE** is made for reference.

HAZARD RATINGS:
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: Health Hazard: **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can result in permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). Flammability Hazard: **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]. Reactivity Hazard: **0** (normally stable); 1 (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures).
NATIONAL FIRE PROTECTION ASSOCIATION: Health Hazard: **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure causes death or major residual injury).

NATIONAL FIRE PROTECTION ASSOCIATION (Continued): Flammability Hazard and Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System".

FLAMMABILITY LIMITS IN AIR:
Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:
Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD_{50}** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m^3** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo, LDLo**, and LDo, or **TC, TCo, LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological Information: EC is the effect concentration in water.

REGULATORY INFORMATION:
This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDSL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA or Superfund**); and various state regulations.

Manufactured for

INDUSTRIAL SCIENTIFIC

CORPORATION

1001 Oakdale Road
Oakdale, PA 15071-1500

Phone (412) 788-4353
TOLL-FREE 800-DETECTS
Fax (412) 788-8353

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: NON-FLAMMABLE GAS MIXTURE

Containing One or More of the Following Components in a Nitrogen Balance Gas: Oxygen, 0.0015-23.5%; Propane, 0-1.1%; n-Pentane, 0-0.75%; n-Hexane; 0-0.48%; Carbon Monoxide, 0.0005-1.0%; Hydrogen Sulfide, 0.001-0.025%

NOTE: MIXTURES COMPRISED OF AN AIR BALANCE GAS CONTAIN BETWEEN 19.5-23.5% OXYGEN.

SYNONYMS: Not Applicable

CHEMICAL FAMILY NAME: Not Applicable

FORMULA: Not Applicable

Document Number: 50016 (Replaces ISC MSDS No.1810-2187, 1810-2343, 1810-3366, 1810-3937 1810-7219, 1810-7599, 1810-6179)

Note: The Material Safety Data Sheet is for this gas mixture supplied in cylinders with 33 cubic feet (935 liters) or less gas capacity (DOT - 39 cylinders). This MSDS has been developed for various gas mixtures with the composition of components within the ranges listed in Section 2 (Composition and Information on Ingredients). Refer to the product label for information on the actual composition of the product.

PRODUCT USE:	Calibration of Monitoring and Research Equipment
SUPPLIER/MANUFACTURER'S NAME:	CALGAZ
ADDRESS:	821 Chesapeake Drive Cambridge, MD 21613
EMERGENCY PHONE:	CHEMTREC: 1-800-424-9300
BUSINESS PHONE:	1-410-228-6400
General MSDS Information	1-713/868-0440
Fax on Demand:	1-800/231-1366

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIHTLV		OSHA		IDLH	OTHER
			TWA ppm	STEL ppm	TWA ppm	STEL ppm	ppm	ppm
Oxygen	7782-44-7	0.0015 - 23.5%	There are no specific exposure limits for Oxygen. Oxygen levels should be maintained above 19.5%.					
Propane	74-98-6	0 - 1.1%	2500	NE	1000	NE	2100	NIOSH REL: 1000 DFG MAK: 1000 ppm
n-Pentane	109-66-0	0 - 0.75%	600	750	1000 600 (Vacated 1989 PEL)	750 (Vacated 1989 PEL)	1500	NIOSH REL: TWA = 120 STEL = 610 (ceiling) 15 minutes DFG MAKs: TWA =1000 PEAK = 2•MAK, 60 min., momentary value
n-Hexane	110-54-3	0 - 0.48%	50	NE	500 50 (Vacated 1989 PEL)	NE	1100	NIOSH REL: 50 DFG MAK: 50
Hydrogen Sulfide	7783-06-4	0.001-0.025 %	10 NIC = 5	15 NIC = 5	10 (Vacated 1989 PEL)	20 (ceiling), 50 (10 min. peak, once per shift) 15 (Vacated 1989 PEL)	100	NIOSH REL: STEL = 10 (ceiling), 10 minutes DFG MAKs: TWA = 10 PEAK = 2•MAK, 10 min., momentary value
Carbon Monoxide	630-08-0	0.0005 - 1.0%	25	NE	50 35 (Vacated 1989 PEL)	200 (ceiling) (Vacated 1989 PEL)	1200	NIOSH RELs: TWA = 35 STEL = 200 ceiling DFG MAKs: TWA = 30 PEAK = 2•MAK, 15 min., average value, 1 hr interval DFG MAK Pregnancy Risk Classification: B
Nitrogen	7727-37-9	Balance	There are no specific exposure limits for Nitrogen. Nitrogen is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.					

NE = Not Established. NIC = Notice of Intended Change See Section 16 for Definitions of Terms Used.

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This gas mixture has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This gas mixture is a colorless gas which has a rotten-egg odor (due to the presence of Hydrogen Sulfide). The odor cannot be relied on as an adequate warning of the presence of this gas mixture, because olfactory fatigue occurs after over-exposure to Hydrogen Sulfide. Hydrogen Sulfide and Carbon Monoxide (another component of this gas mixture) are toxic to humans in relatively low concentrations. Over-exposure to this gas mixture can cause skin or eye irritation, nausea, dizziness, headaches, collapse, unconsciousness, coma, and death. The Propane, n-Pentane, and n-Hexane components can cause anesthetic or peripheral neuropathy effects. Additionally, releases of this gas mixture may produce oxygen-deficient atmospheres (especially in small confined spaces or other poorly-ventilated environments); individuals in such atmospheres may be asphyxiated.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant route of over-exposure for this gas mixture is by inhalation.

INHALATION: Due to the small size of an individual cylinder of this gas mixture, no unusual health effects from over-exposure to the product are anticipated under routine circumstances of use. A significant health hazard associated with this gas mixture is the potential of inhalation of Hydrogen Sulfide, a component of this gas mixture. Such over-exposures may occur if this gas mixture is used in a confined space or other poorly-ventilated area. Over-exposures to Hydrogen Sulfide can cause dizziness, headache, and nausea. Exposure to this component can result in respiratory arrest, coma, or unconsciousness. Continuous inhalation of low concentrations of Hydrogen Sulfide may cause olfactory fatigue, so that the odor is no longer an effective warning of the presence of this gas. A summary of exposure concentrations and observed effects are as follows

CONCENTRATION OF HYDROGEN SULFIDE	OBSERVED EFFECT
0.3-30 ppm	Odor is obvious and unpleasant.
50 ppm	Eye irritation. Dryness and irritation of nose, throat.
Slightly higher than 50 ppm	Irritation of the respiratory system.
100-150 ppm	Temporary loss of smell.
200-250 ppm	Headache, vomiting nausea. Prolonged exposure may lead to lung damage. Exposures of 4-8 hours can be fatal.
300-500	Swifter onset of symptoms. Death occurs in 1-4 hours.
500 ppm	Headache, excitement, staggering, and stomach ache after brief exposure. Death occurs within 0.5 - 1 hour of exposure.
> 600 ppm	Rapid onset of unconsciousness, coma, death.
> 1000 ppm	Immediate respiratory arrest.
NOTE:	This gas mixture contains a maximum of 250 ppm Hydrogen Sulfide. The higher concentration values here are presented to delineate the complete health effects which have been observed for humans after exposure to Hydrogen Sulfide.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	3
FLAMMABILITY HAZARD	(RED)	0
PHYSICAL HAZARD	(YELLOW)	0

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
See Section 8			

For Routine Industrial Use and Handling Applications

Inhalation over-exposures to atmospheres containing more than the Threshold Limit Value of Carbon Monoxide (25 ppm), another component of this gas mixture, can result in serious health consequences. Carbon Monoxide is classified as a chemical asphyxiant, producing a toxic action by combining with the hemoglobin of the blood and replacing the available oxygen. Through this replacement, the body is deprived of the required oxygen, and asphyxiation occurs.

Since the affinity of Carbon Monoxide for hemoglobin is about 200-300 times that of oxygen, only a small amount of Carbon Monoxide will cause a toxic reaction to occur. Carbon Monoxide exposures in excess of 50 ppm will produce symptoms of poisoning if breathed for a sufficiently long time. If this gas mixture is released in a small, poorly ventilated area (i.e. an enclosed or confined space), symptoms which may develop include the following:

CONCENTRATION OF CARBON MONOXIDE	OBSERVED EFFECT
All exposure levels: ..	Over-exposure to Carbon Monoxide can be indicated by the lips and fingernails turning bright red.
200 ppm:	Slight symptoms (i.e. headache) after several hours of exposure.
400 ppm:	Headache and discomfort experienced within 2-3 hours of exposure.
1,000 -2000 ppm:	Within 30 minutes, slight palpitations of the heart occurs. Within 1.5 hours, there is a tendency to stagger.
200-2500 ppm:	Within 2 hours, there is mental confusion, headaches, and nausea. Unconsciousness within 30 minutes.
> 2500 ppm:	Potential for collapse and death before warning symptoms.

Another hazard associated with this gas mixture is the potential for anesthetic and peripheral neuropathy effects after inhalation over-exposures to the Propane, n-Pentane and n-Hexane components of this gas mixture. Specific human over-exposure data are available for n-Pentane and n-Hexane, as follows:

CONCENTRATION OF n-PENTANE	OBSERVED EFFECT
Brief (10 minute) up to 5,000 ppm:	No symptoms.
Higher than 5,000 ppm:	Exhilaration, dizziness and headache can occur.
Long term:	Can cause chronic neurological disorder causing damage to the nerves in the hands and feet (peripheral neuropathy)

CONCENTRATION OF n-HEXANE	OBSERVED EFFECT
Brief (10 minute) at 1,500 ppm:	Irritation of the respiratory tract, nausea and headache.
5000 ppm:	Dizziness and drowsiness can occur.
Long term at 500 ppm:	Can affect the nerves in the arms and legs. Effects include numbing or tingling sensations in the fingers and toes, tiredness, muscle weakness, cramps and spasms in the leg, difficulty in holding objects or walking, abdominal pains, loss of appetite, weight loss. More serious exposures can cause damage to the nerves in the hands and feet (peripheral neuropathy).
Eyes and Vision:	Abnormal color perception and pigment changes in the eyes have been reported among industrial workers exposed to 423-1280 ppm for 5 years or more.
Blood Cells:	Mild forms of anemia have also been associated with exposure to hexane. These are of temporary nature.

Additionally, if mixtures of this gas mixture contain less than 19.5% Oxygen and are released in a small, poorly ventilated area (i.e. an enclosed or confined space), an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The following effects associated with various levels of oxygen are as follows:

CONCENTRATION OF OXYGEN	OBSERVED EFFECT
12-16% Oxygen:	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea, vomiting, collapse, or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

SKIN and EYE CONTACT: The Hydrogen Sulfide component of this gas mixture may be irritating to the skin. Inflammation and irritation of the eyes can occur at very low airborne concentration of Hydrogen Sulfide (less than 10 ppm). Exposure over several hours may result in “gas eyes” or “sore eyes” with symptoms of scratchiness, irritation, tearing and burning. Above 50 ppm of Hydrogen Sulfide, there is an intense tearing, blurring of vision, and pain when looking at light. Over-exposed individuals may see rings around bright lights. Most symptoms disappear when exposure ceases. However, in serious cases, the eye can be permanently damaged.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Over-exposure to this gas mixture may cause the following health effects:

ACUTE: Due to the small size of the individual cylinder of this gas mixture, no unusual health effects from exposure to the product are anticipated under routine circumstances of use. However, the Hydrogen Sulfide and Carbon Monoxide components of this gas mixture are toxic to humans. Over-exposure to this gas mixture can cause nausea, dizziness, headaches, collapse, unconsciousness, coma, and death. Due to the presence of Hydrogen Sulfide, over-exposures to this gas mixture can also irritate the skin and eyes; severe eye contamination can result in blindness.

Inhalation over-exposures to Propane, n-Pentane, and n-Hexane can cause anesthetic effects and motor neuropathy (i.e. pain and tingling in feet and hands).

3. HAZARD IDENTIFICATION (Continued)

CHRONIC: Abnormal color perception and pigment changes in the eyes have been reported among persons exposed to 420 -1300 ppm of n-Hexane for five years. Additionally, long-term exposure to low levels of n-Hexane or n-Pentane can affect the nerves in the arms and legs. Effects include numbing or tingling sensation, tiredness, cramps, spasms in legs, difficulty holding objects or walking, loss of appetite and weight loss. Pentane isomers, such as n-Pentane, and Propane can cause sensitization of the heart to epinephrine. Refer to Section 11 (Toxicology Information) for additional information on the components of this gas mixture.

TARGET ORGANS: ACUTE: Respiratory system, blood system, central nervous system, cardiovascular system. CHRONIC: Reproductive system, cardiovascular system.

4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS GAS MIXTURE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus must be worn.

No unusual health effects are anticipated after exposure to this gas mixture, due to the small cylinder size. If any adverse symptom develops after over-exposure to this gas mixture, remove victim(s) to fresh air as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation if necessary.

Victim(s) who experience any adverse effect after over-exposure to this gas mixture must be taken for medical attention. Rescuers should be taken for medical attention if necessary. Take a copy of the label and the MSDS to physician or other health professional with victim(s).

SKIN EXPOSURE: If irritation of the skin develops after exposure to this gas mixture, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention.

EYE EXPOSURE: If irritation of the eye develops after exposure to this gas mixture, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Seek medical assistance immediately, preferably an ophthalmologist.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory conditions may be aggravated by over-exposure to this gas mixture. Carbon Monoxide, a component of this gas mixture, can aggravate some diseases of the cardiovascular system, such as coronary artery disease and angina pectoris. Because of the presence of Hydrogen Sulfide, n-Hexane or n-Pentane in this gas mixture, central nervous system conditions, eye disorders, or skin problems may be aggravated by over-exposure to this gas mixture.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate over-exposure. Hyperbaric oxygen is the most efficient antidote to Carbon Monoxide poisoning, the optimum range being 2-2.5 atm. A special mask, or, preferably, a compression chamber to utilize oxygen at these pressures is required. Avoid administering stimulant drugs. Be observant for initial signs of pulmonary edema in the event of severe inhalation over-exposures.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.

Upper (UEL): Not applicable.

FIRE EXTINGUISHING MATERIALS: Non-flammable gas mixture. Use extinguishing media appropriate for surrounding fire.

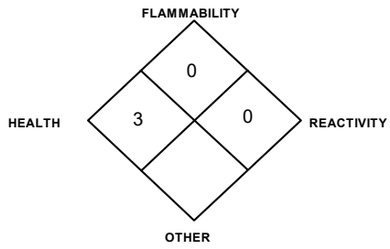
UNUSUAL FIRE AND EXPLOSION HAZARDS: This gas mixture contains toxic gases, Hydrogen Sulfide and Carbon Monoxide, and presents an extreme health hazard to firefighters. This gas mixture is not flammable; however, containers, when involved in fire, may rupture or burst in the heat of the fire.

Explosion Sensitivity to Mechanical Impact: Not Sensitive.

Explosion Sensitivity to Static Discharge: Not Sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment.

NFPA RATING



6. ACCIDENTAL RELEASE MEASURES

LEAK RESPONSE: Due to the small size and content of the cylinder, an accidental release of this gas mixture presents significantly less risk of over-exposure to Hydrogen Sulfide and Carbon Monoxide, the toxic components of this gas mixture, and other safety hazards related to the remaining components of this gas mixture, than a similar release from a larger cylinder. However, as with any chemical release, extreme caution must be used during emergency response procedures. In the event of a release in which the atmosphere is unknown, and in which other chemicals are potentially involved, evacuate immediate area. Such releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a leak, clear the affected area, protect people, and respond with trained personnel.

For emergency disposal, secure the cylinder and slowly discharge the gas to the atmosphere in a well-ventilated area or outdoors. Allow the gas mixture to dissipate. If necessary, monitor the surrounding area (and the original area of the release) for Hydrogen Sulfide, Carbon Monoxide, and Oxygen. Hydrogen Sulfide and Carbon Monoxide level must be below exposure level listed in Section 2 (Composition and Information on Ingredients) and Oxygen levels must be above 19.5% before non-emergency personnel are allowed to re-enter area.

If leaking incidentally from the cylinder, contact your supplier.

7. HANDLING and USE

WORK PRACTICES AND HYGIENE PRACTICES: Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of this gas mixture could occur without any significant warning symptoms, due to olfactory fatigue or oxygen deficiency. Do not attempt to repair, adjust, or in any other way modify cylinders containing a gas mixture with Hydrogen Sulfide or Carbon Monoxide. If there is a malfunction or another type of operational problem, contact nearest distributor immediately. Eye wash stations/safety showers should be near areas where this gas mixture is used or stored. All work operations should be monitored in such a way that emergency personnel can be immediately contacted in the event of a release. All work practices should minimize releases of Hydrogen Sulfide and Carbon Monoxide-containing gas mixtures.

STORAGE AND HANDLING PRACTICES: Cylinders should be firmly secured to prevent falling or being knocked-over. Cylinders must be protected from the environment, and preferably kept at room temperature (approximately 21°C, 70°F). Cylinders should be stored in dry, well-ventilated areas, away from sources of heat, ignition, and direct sunlight. Protect cylinders against physical damage.

Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time. These cylinders are not refillable. **WARNING! Do not refill DOT 39 cylinders. To do so may cause personal injury or property damage.**

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: WARNING! Compressed gases can present significant safety hazards. During cylinder use, use equipment designed for these specific cylinders. Ensure all lines and equipment are rated for proper service pressure.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use product in areas where adequate ventilation is provided.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: No special ventilation systems or engineering controls are needed under normal circumstances of use. As with all chemicals, use this gas mixture in well-ventilated areas. If this gas mixture is used in a poorly-ventilated area, install automatic monitoring equipment to detect the levels of Oxygen, Hydrogen Sulfide, and Carbon Monoxide.

RESPIRATORY PROTECTION: No special respiratory protection is required under normal circumstances of use. Use supplied air respiratory protection if Carbon Monoxide levels exceed the exposure levels given in Section 2 (Composition and Information on Ingredients) or if oxygen levels are below 19.5%, or if either level is unknown during emergency response to a release of this gas mixture. If respiratory protection is required for emergency response to this gas mixture, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134) or equivalent State standards. The following NIOSH respiratory protection recommendations for Hydrogen Sulfide and Carbon Monoxide are provided for further information.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

NIOSH/OSHA RECOMMENDATIONS FOR HYDROGEN SULFIDE CONCENTRATIONS IN AIR:

Up to 100 ppm: Powered air-purifying respirator with cartridge(s) to protect against hydrogen sulfide; or gas mask with canister to protect against hydrogen sulfide; or SAR; or full-facepiece SCBA.

Emergency or Planned Entry into Unknown Concentration or IDLH Conditions: Positive pressure, full-facepiece SCBA; or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.

Escape: Gas mask with canister to protect against hydrogen sulfide; or escape-type SCBA

NOTE: The IDLH concentration for Hydrogen Sulfide is 100 ppm.

NIOSH/OSHA RECOMMENDATIONS FOR CARBON MONOXIDE CONCENTRATIONS IN AIR:

Up to 350 ppm Supplied Air Respirator (SAR)

Up to 875 ppm Supplied Air Respirator (SAR) operated in a continuous flow mode.

Up to 1200 ppm Gas mask with canister to protect against carbon monoxide; or full-facepiece SCBA; or full-facepiece Supplied Air Respirator (SAR).

Emergency or Planned Entry into Unknown Concentration or IDLH Conditions: Positive pressure, full-facepiece SCBA; or positive pressure, full-facepiece Supplied Air Respirator (SAR) with an auxiliary positive pressure SCBA.

Escape: Gas mask with canister to protect against carbon monoxide; or escape-type SCBA.

NOTE: End of Service Life Indicator (ESLI) required for gas masks.

EYE PROTECTION: Safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: No special protection is needed under normal circumstances of use. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: No special protection is needed under normal circumstances of use. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

9. PHYSICAL and CHEMICAL PROPERTIES

The following information is for Nitrogen, the main component of this gas mixture.

GAS DENSITY @ 32°F (0°C) and 1 atm: 0.072 lbs/ ft^3 (1.153 kg/m^3)

FREEZING/MELTING POINT @ 10 psig: -210°C (-345.8°F)

BOILING POINT: -195.8°C (-320.4°F)

SPECIFIC GRAVITY (air = 1) @ 70°F (21.1°C): 0.906

pH: Not applicable.

SOLUBILITY IN WATER vol/vol @ 32°F (0°C) and 1 atm: 0.023

MOLECULAR WEIGHT: 28.01

EVAPORATION RATE (nBuAc = 1): Not applicable.

EXPANSION RATIO: Not applicable.

ODOR THRESHOLD: Not applicable.

SPECIFIC VOLUME (ft^3/lb): 13.8

VAPOR PRESSURE @ 70°F (21.1°C) psig: Not applicable.

COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

The following information is for the gas mixture.

APPEARANCE AND COLOR: This gas mixture is a colorless gas which has an rotten egg-like odor, due to the presence of Hydrogen Sulfide.

HOW TO DETECT THIS SUBSTANCE (warning properties): Continuous inhalation of low concentrations of Hydrogen Sulfide (a component of this gas mixture) may cause olfactory fatigue, so that there are no distinct warning properties. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation. Wet lead acetate paper can be used for leak detection. The paper turns black in the presence of Hydrogen Sulfide. Cadmium chloride solutions can also be used. Cadmium solutions will turn yellow upon contact with Hydrogen Sulfide.

10. STABILITY and REACTIVITY

STABILITY: Normally stable in gaseous state.

DECOMPOSITION PRODUCTS: The thermal decomposition products of Propane, n-Hexane, and n-Pentane include carbon oxides. The decomposition products of Hydrogen Sulfide include water and sulfur oxides. The other components of this gas mixture do not decompose, per se, but can react with other compounds in the heat of a fire.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Titanium will burn in Nitrogen (the main component of this gas mixture). Lithium reacts slowly with Nitrogen at ambient temperatures. Components of this gas mixture (Hydrogen Sulfide, Propane, n-Pentane, n-Hexane) are also incompatible with strong oxidizers (i.e. chlorine, bromine pentafluoride, oxygen, oxygen difluoride, and nitrogen trifluoride). Carbon Monoxide is mildly corrosive to nickel and iron (especially at high temperatures and pressures). Hydrogen Sulfide is corrosive to most metals, because it reacts with these substances to form metal sulfides.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Contact with incompatible materials. Cylinders exposed to high temperatures or direct flame can rupture or burst.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following toxicology data are available for the components of this gas mixture:

NITROGEN: There are no specific toxicology data for Nitrogen. Nitrogen is a simple asphyxiant, which acts to displace oxygen in the

n-PENTANE:

LD_{50} (intravenous, mouse) = 446 mg/kg.

LC_{50} (inhalation, rat) = 364 g/m^3/4 hours

LCLo (inhalation, mouse) = 325 g/m^3/2 hours

n-HEXANE:

Eye, rabbit = 10 mg/ mild

TCLo (inhalation, rat) = 10,000 ppm/7 hr.

TCLo (inhalation, rat) = 5000 ppm/20 hours; teratogenic effects

LD50 (oral, rat) = 28710 mg/kg

LDLo (intraperitoneal, rat) = 9100 mg/kg

LCLo (inhalation, mouse) = 120,000 mg/kg

LD50 (rat, oral): 28,710 mg/kg

ACUTE INHALATION (mouse): 30,000 ppm, narcosis within 30 to 60 minutes; 35,000-40,000 ppm, convulsions and death.

DERMAL (rabbit): 2 to 5 ml/kg for 4 hours resulted in restlessness and discoordination,; death occurred at 5 ml/kg.

HYDROGEN SULFIDE:

LCLo (inhalation, human) = 600 ppm/30 minutes

LDLO (inhalation, man) = 5.7 mg/kg; central nervous system, pulmonary effects

n-HEXANE (continued):

CHRONIC INHALATION (rat): 400-600 ppm, 5 days/week, peripheral neuropathy in 45 days; 850 ppm for 143 days, loss of weight and degeneration of the sciatic nerve. (mouse): 250 ppm, peripheral neuropathy within 7 months; no effects at 100 ppm.

PROPANE:

Long-Term Inhalation: No toxicity or abnormalities were observed when monkeys were exposed to approximately 750 ppm for 90 days. Similar results were obtained when monkeys were exposed to an aerosol spray containing 65% propane and isobutane.

CARBON MONOXIDE:

TCLo (inhalation, mouse) = 65 ppm/24 hours (7-18 preg): rep. effects

TCLo (inhalation, mouse) = 8 pph/1 hour (female 8D post): ter. effects

HYDROGEN SULFIDE (continued):

LCLo (inhalation, human) = 800 ppm/5 minutes

LC_{50} (inhalation, rat) = 444 ppm

CARBON MONOXIDE (continued):

TCLo (inhalation, human) = 600 mg/m^3/10 minutes

LCLo (inhalation, man) = 4000 ppm/30 minutes

TCLo (inhalation, man) = 650 ppm/45 minutes: central nervous system and blood system effects.

LCLo (inhalation, human) = 5000 ppm/5 minutes

LCLo (inhalation, dog) = 4000 ppm/46 minutes

LCLo (inhalation, rabbit) = 4000 ppm

LC_{50} (inhalation, rat) = 1811 ppm/4 hours

LC_{50} (inhalation, guinea pig) = 2450 ppm/4 hours

LC_{50} (inhalation, guinea pig) = 5718 ppm/4 hours

LCLo (inhalation, mammal) = 5000 ppm/5 minutes

LD_{50} (inhalation, wild bird) = 1334 ppm

HYDROGEN SULFIDE (continued):

LC_{50} (inhalation, mouse) = 673 ppm/1 hour

LCLo (inhalation, mammal) = 800 ppm/5 minutes

SUSPECTED CANCER AGENT: The components of this gas mixture are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, and IARC; therefore, they are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: The Hydrogen Sulfide component of this gas mixture, is irritating to the eyes, and may be irritating to the skin.

SENSITIZATION OF PRODUCT: The components of this gas mixture are not known to be skin or respiratory sensitizers. Pentane isomers (i.e. n-Pentane) and Propane can cause cardiac sensitization to epinephrine.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this gas mixture on the human reproductive system.

Mutagenicity: No mutagenicity effects have been described for the components of this gas mixture.

Embryotoxicity: This gas mixture contains components that may cause embryotoxic effects in humans; however, due to the small total amount of the components, embryotoxic effects are not expected to occur.

Teratogenicity: This gas mixture is not expected to cause teratogenic effects in humans due to the small cylinder size and small total amount of all components. The Carbon Monoxide component of this gas mixture which exists up to 1%, can cause teratogenic effects in humans. Severe

11. TOXICOLOGICAL INFORMATION (continued)

exposure to Carbon Monoxide during pregnancy has caused adverse effects and the death of the fetus. In general, maternal symptoms are an indicator of the potential risk to the fetus since Carbon Monoxide is toxic to the mother before it is toxic to the fetus.

Reproductive Toxicity: The components of this gas mixture are not expected to cause adverse reproductive effects in humans.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

BIOLOGICAL EXPOSURE INDICES (BEIs): Biological Exposure Indices (BEIs) have been determined for the components of this gas mixture, as follows:

CHEMICAL DETERMINANT	SAMPLING TIME	BEI
CARBON MONOXIDE • Carboxyhemoglobin in blood • Carbon monoxide in end-exhaled air	 • End of shift • End of shift	 • 3.5% of hemoglobin • 20 ppm
n-HEXANE • 2,5-Hexanedione in urine • n-Hexane in end-exhaled air	 • End of shift	 • 5 mg/g creatinine

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: The gas will be dissipated rapidly in well-ventilated areas. The following environmental data are applicable to the components of this gas mixture.

OXYGEN: Water Solubility = 1 volume Oxygen/32 volumes water at 20°C. Log K_{ow} = -0.65

PROPANE: Log K_{ow} = 2.38. Water Solubility = 62.4 ppm, 25°C. Propane is readily degraded by soil bacteria.

PENTANE: Log K_{ow} = 3.39. Water Solubility = 38.5 mg/L. LOG BCF (n-pentane) = calculated, 1.90 and 2.35, respectively. Photolysis, hydrolysis, and bioconcentration are not anticipated to be important fate processes. Biodegradation and soil adsorption are anticipated to be more important processes for this compound.

n-HEXANE: Log K_{ow} = 3.90-4.11. Water Solubility = 9.5 mg/L. Estimated Bioconcentration Factor =2.24 and 2.89. Bioconcentration in aquatic organisms is low. Hexane is volatile. Rapid volatilization from water and soil is anticipated for this compound. Hexane will float in slick on surface of the water

HYDROGEN SULFIDE: Water Solubility = 1 g/242 mL at 20°C.

CARBON MONOXIDE: Water solubility = 3.3 ml/100 cc at 0 °C, 2.3 ml at 20°C.

NITROGEN: Water Solubility = 2.4 volumes Nitrogen/100 volumes water at 0°C; 1.6 volumes Nitrogen/100 volumes water at 20°C.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this gas mixture's effects on plant and animal life. The Hydrogen Sulfide and Carbon Monoxide components of this gas mixture, can be deadly to exposed animal life, producing symptoms similar to those experienced by humans. This gas mixture may also be harmful to plant life.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on the effects of this gas effects on aquatic life. The presence of more than a trace of Carbon Monoxide is a hazard to fish. The following aquatic toxicity data are available for the Hydrogen Sulfide component of this gas mixture.

TLm (Asellussp) = 0.111 mg/L/96 hour
TLm (Cranfgonyx sp) =1.07 mg/L/96 hour
TLm (Gammarrus) = 0.84 mg/L/96 hour
LC_{50} (fly inhalation) = 380 mg/m^3/960 minutes
LC_{50} (fly inhalation) = 1500 mg/m^3/7 minutes
TLm (Lepomis macrochirus, bluegill sunfish) = 0.0478 mg/L/96 hour
TLm (Lepomis macrochirus, bluegill sunfish) = 0.0448 mg/L/96 hour at 21-22 °C
TLm (Pimephlaes promelas, fathead minnow) = 0.0071-0.55 mg/L/96 hour
TLm (Salvenilis foninalis, brook trout) = 0.0216-0.038 mg/L/96 hour at 8-12.5 °C

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Cylinders with undesired residual product may be safely vented outdoors with the proper regulator. For further information, refer to Section 16 (Other Information).

14. TRANSPORTATION INFORMATION

THIS GAS MIXTURE IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Compressed gases, n.o.s. (*Oxygen, Nitrogen)*or the gas component with the next highest concentration next to Nitrogen.

HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)

UN IDENTIFICATION NUMBER: UN 1956

PACKING GROUP: Not Applicable

DOT LABEL(S) REQUIRED: Class 2.2 (Non-Flammable Gas)

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126

MARINE POLLUTANT: The components of this gas mixture are not classified by the DOT as Marine Pollutants (as defined by 49 CFR 172.101, Appendix B).

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.

Note: DOT 39 Cylinders ship in a strong outer carton (overpack). Pertinent shipping information goes on the outside of the overpack. DOT 39 Cylinders do not have transportation information on the cylinder itself.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This gas is considered as Dangerous Goods, per regulations of Transport Canada.

PROPER SHIPPING NAME: Compressed gases, n.o.s. (*Oxygen, Nitrogen)*or the gas component with the next highest concentration next to Nitrogen.

HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)

UN IDENTIFICATION NUMBER: UN 1956

PACKING GROUP: Not Applicable

HAZARD LABEL: Class 2.2 (Non-Flammable Gas)

SPECIAL PROVISIONS: None

EXPLOSIVE LIMIT AND LIMITED QUANTITY INDEX: 0.12

ERAP INDEX: None

PASSENGER CARRYING SHIP INDEX: None

PASSENGER CARRYING ROAD VEHICLE OR PASSENGER CARRYING RAILWAY VEHICLE INDEX: 75

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126

NOTE: Shipment of compressed gas cylinders via Public Passenger Road Vehicle is a violation of Canadian law (Transport Canada Transportation of Dangerous Goods Act, 1992).

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: This gas is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows:

COMPONENT	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
n-Hexane	NO	YES	YES
Hydrogen Sulfide	YES	YES	YES

15. REGULATORY INFORMATION (Continued)

U.S. SARA THRESHOLD PLANNING QUANTITY: Section 302 EHS TPQ = Hydrogen Sulfide = 500 lbs (227 kg);
U.S. TSCA INVENTORY STATUS: The components of this gas mixture are listed on the TSCA Inventory.
U.S. CERCLA REPORTABLE QUANTITY (RQ): Hexane = 5000 lb (2270 kg); Hydrogen Sulfide = 100 lbs (45.4 lb)
OTHER U.S. FEDERAL REGULATIONS:

- Hydrogen Sulfide, Carbon Monoxide, Propane, n-Pentane and n-Hexane are subject to the reporting requirements of CFR 29 1910.1000.
- Hydrogen Sulfide, Propane and n-Pentane are subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for each of these gases is 10,000 pounds and so this mixture will not be affected by the regulation.
- Depending on specific operations involving the use of this gas mixture, the regulations of the Process Safety Management of Highly Hazardous Chemicals may be applicable (29 CFR 1910.119). Hydrogen Sulfide is listed in Appendix A of this regulation. The Threshold Quantity for Hydrogen Sulfide under this regulation is 1500 lbs.
- This gas mixture does not contain any Class I or Class II ozone depleting chemicals (40 CFR part 82).
- Nitrogen, Oxygen and n-Hexane are not listed Regulated Substances, per 40 CFR, Part 68, of the Risk Management for Chemical Releases. Hydrogen Sulfide is listed under this regulation in Table 1 as a Regulated Substance (Toxic Substance), in quantities of 10,000 lbs (4,553 kg) or greater. Carbon Monoxide, Propane and n-Pentane are listed under this regulation in Table 3, as Regulated Substances (Flammable), in quantities of 10,000 lbs (4,553 kg) or greater, and so this mixture will not be affected by the regulation.

U.S. STATE REGULATORY INFORMATION: The components of this gas mixture are covered under the following specific State regulations:

Alaska - Designated Toxic and Hazardous Substances: Carbon Monoxide, Propane, n-Pentane, n-Hexane, Hydrogen Sulfide.
California - Permissible Exposure Limits for Chemical Contaminants: Carbon Monoxide, Nitrogen, Propane, n-Pentane, n-Hexane, Hydrogen Sulfide.
Florida - Substance List: Oxygen, Carbon Monoxide, n-Pentane, n-Hexane, Hydrogen Sulfide.
Illinois - Toxic Substance List: Carbon Monoxide, Propane, n-Pentane, n-Hexane, Hydrogen Sulfide.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: Oxygen, Carbon Monoxide, Propane, n-Pentane, n-Hexane, Hydrogen Sulfide.
Michigan - Critical Materials Register: No.
Minnesota - List of Hazardous Substances: Carbon Monoxide, Propane, n-Pentane, n-Hexane, Hydrogen Sulfide.
Missouri - Employer Information/Toxic Substance List t: n-Pentane, n-Hexane, Propane, Hydrogen Sulfide.
New Jersey - Right to Know Hazardous Substance List: Oxygen, Carbon Monoxide, Nitrogen, Propane, n-Pentane, n-Hexane.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: Hydrogen Sulfide.
Pennsylvania - Hazardous Substance List: Oxygen, Carbon Monoxide, Nitrogen, Propane, n-Pentane, n-Hexane, Hydrogen Sulfide.
Rhode Island - Hazardous Substance List: Oxygen, Carbon Monoxide, Nitrogen, Propane, n-Pentane, n-Hexane, Hydrogen Sulfide.
Texas - Hazardous Substance List: n-Pentane, n-Hexane, Propane, Hydrogen Sulfide.
West Virginia - Hazardous Substance List: n-Pentane, n-Hexane, Propane, Hydrogen Sulfide.
Wisconsin - Toxic and Hazardous Substances: n-Pentane, n-Hexane, Propane, Hydrogen Sulfide

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): The Carbon Monoxide component of this gas mixture is on the California Proposition 65 lists as a chemical known to the State of California to cause birth defects or other reproductive harm.
ADDITIONAL CANADIAN REGULATIONS:
CANADIAN DSL/NDSL INVENTORY STATUS: The components of this gas mixture are on the Canadian DSL Inventory.
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of this gas mixture are not on the CEPA Priorities Substances List.
CANADIAN WHMIS CLASSIFICATION: This gas mixture is categorized as a Controlled Product, Hazard Classes A and D2A, as per the Controlled Product Regulations.

16. OTHER INFORMATION

INFORMATION ABOUT DOT-39 NRC (Non-Refillable Cylinder) PRODUCTS

DOT 39 cylinders ship as hazardous materials when full. Once the cylinders are relieved of pressure (empty) they are not considered hazardous material or waste. Residual gas in this type of cylinder is not an issue because toxic gas mixtures are prohibited. Calibration gas mixtures typically packaged in these cylinders are Nonflammable n.o.s., UN 1956. A small percentage of calibration gases packaged in DOT 39 cylinders are flammable or oxidizing gas mixtures.

For disposal of used DOT-39 cylinders, it is acceptable to place them in a landfill if local laws permit. Their disposal is no different than that employed with other DOT containers such as spray paint cans, household aerosols, or disposable cylinders of propane (for camping, torch etc.). When feasible, we recommended recycling for scrap metal content. CALGAZ will do this for any customer that wishes to return cylinders to us prepaid. All that is required is a phone call to make arrangements so we may anticipate arrival. Scrapping cylinders involves some preparation before the metal dealer may accept them. We perform this operation as a service to valued customers who want to participate.

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

Further information about the handling of compressed gases can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102. Telephone: (703) 412-0900.

P-1 *"Safe Handling of Compressed Gases in Containers"*
AV-1 *"Safe Handling and Storage of Compressed Gases"*
"Handbook of Compressed Gases"

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc.
PO Box 3519, La Mesa, CA 91944-3519
619/670-0609

Fax on Demand: 1-800/231-1366

AIR LIQUIDE™

This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this gas mixture. To the best of CALGAZ knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

APPENDIX C

COVID-19 Interim Health and Safety Guidance

COVID-19 INTERIM HEALTH AND SAFETY GUIDANCE

CORPORATE HEALTH AND SAFETY MANAGER	**:**	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	**:**	**03/2020**
REVISION DATE	**:**	**03/18/2021**
REVISION NUMBER	**:**	**6**

TABLE OF CONTENTS

APPENDICES

1. PURPOSE

This guidance has been implemented to establish work practices, administrative procedures, and engineering controls to minimize potential exposure to SARS-CoV-2, the virus that causes COVID-19. The following guidance has been developed based on local, state and federal recommendations/requirements regarding COVID-19. The purpose of this document is to supplement existing site-specific Health and Safety Plans (HASPs) and provide interim health and safety guidance to minimize potential exposure to SARS-CoV-2. Should additional scientific information or regulatory information change, this document shall be updated accordingly.

2. SCOPE AND APPLICABILITY

This guidance covers all Roux employees and the subcontractors that Roux oversees. Site specific HASPs shall be developed to incorporate elements of mitigative measures against COVID-19 exposure. If work cannot be carried out in compliance with this guidance, the project shall be further evaluated by the Project Principal (PP), Office Manager (OM), and Corporate Health and Safety Director (CHSD) prior to work authorization.

Roux subcontractors are required to review, comply with, and implement Roux's COVID-19 Interim Health and Safety Guidance while on site. Subcontractors may implement additional preventative measures as they see fit. All work shall be conducted in a manner consistent with the federal, state, and local guidance as it relates to COVID-19.

3. BACKGROUND

What is COVID-19?

COVID-19 is a respiratory illness that can spread from person to person. The virus that causes COVID-19 is a novel coronavirus that was first identified during an investigation into an outbreak in Wuhan, China. This virus continues to spread internationally and within the United States. Multiple variants of the virus that causes COVID-19 are circulating globally. There are currently several vaccines which have been developed which are authorized, recommended and effective at protecting you from getting sick.

What are the symptoms of COVID-19?

Reported illnesses have ranged from mild symptoms to severe illness and death for confirmed COVID-19 cases. Symptoms may appear 2 to 14 days following exposure to the virus. People with these symptoms or combinations of symptoms may have COVID-19:

- 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

This list is not all possible symptoms. The CDC will continue to update this list as they learn more about the virus. For an updated symptom list please reference the following link for CDC Symptoms of Coronavirus.

If someone develops emergency warning signs for COVID-19, they should be instructed to get medical attention immediately. Emergency warning signs can include those listed below; however, this list is not all inclusive. Please consult your medical provider for any other symptoms that are severe or concerning.

- Trouble breathing
- Persistent pain or pressure in the chest
- New confusion
- Inability to wake or stay awake
- Pale, gray, or blue-colored skin, lips, or nail beds, depending on skin tone

How does COVID-19 spread?[1]

SARS-COV-2 spreads very easily from person to person during close contact.

Individuals who are within close contact (within 6 feet) of a person with COVID-19 or have direct contact with that person are at greatest risk of infection.

- When people with COVID-19 cough, sneeze, sing, talk, or breathe they produce respiratory droplets. These droplets can range in size from larger droplets (some of which are visible) to smaller droplets. Small droplets can also form particles when they dry very quickly in the airstream.
- Infections occur mainly through exposure to respiratory droplets when a person is in close contact with someone who has COVID-19.
- Respiratory droplets cause infection when they are inhaled or deposited on mucous membranes, such as those that line the inside of the nose and mouth.
- As the respiratory droplets travel further from the person with COVID-19, the concentration of these droplets decreases. Larger droplets fall out of the air due to gravity. Smaller droplets and particles spread apart in the air.
- With passing time, the amount of infectious virus in respiratory droplets also decreases.

SARS-CoV-2 can sometimes spread by airborne transmission under certain circumstances.

Some infections can be spread by exposure to virus in small droplets and particles that can linger in the air for minutes to hours. These viruses may be able to infect people who are further than 6 feet away from the person who is infected or after that person has left the space. This kind of spread is referred to as **airborne transmission** and is an important way that infections like tuberculosis, measles, and chicken pox are spread.

- There is evidence that under certain conditions, people with COVID-19 seem to have infected others who were more than 6 feet away. These transmissions occurred within enclosed spaces that had inadequate ventilation. Sometimes the infected person was breathing heavily, for example while singing or exercising.
    - Under these circumstances, scientists believe the amount of infectious smaller droplet and particles produced by the people with COVID-19 became concentrated enough to spread the virus to other people. The people who were infected were in the same space during the same time or shortly after the person with COVID-19 had left.
- Available data indicate it is much more common for the virus that causes COVID-19 to spread through close contact with a person who has COVID-19 than through airborne transmission.[2]

Spread from contact with contaminated surfaces or objects is less common.

Respiratory droplets can also land on surfaces and objects. It is possible that a person could get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or eyes. Spread from touching surfaces is not thought to be a common way that COVID-19 spreads.

4. TRAINING REQUIREMENTS

All employees with potential exposure to COVID-19 shall be provided training that incorporates COVID-19 exposure mitigation strategies, such as implementation of proper social distancing, personal hygiene (e.g., handwashing), as well as disinfection procedures, as outlined by CDC guidelines.

5. EXPOSURE RISK POTENTIAL

Worker risk of occupational exposure to COVID-19 can vary from very high, high, medium, or lower (caution) risk. This level of exposure is dependent on several factors, which can include industry type; need for contact within

1 How COVID-19 Spreads https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html#edn1

2 Scientific Brief: SARS-CoV-2 and Potential Airborne Transmission | CDC https://www.cdc.gov/coronavirus/2019-ncov/more/scientific-brief-sars-cov-2.html

6 feet of people known to be or suspected of being infected with COVID-19; density of work environment; and industrial setting (i.e., healthcare building, occupied interior work area, minimal ventilation).

Provided below is background risk level information taken from the U.S. Department of Labor Occupational Safety and Health Administration Guidance on preparing workplaces for COVID-19. Risk evaluations for each project shall be conducted by the PP and OM in consultation with the CHSD to ensure Roux employees and subcontractors remain within the lower exposure (caution) category. If it is identified there is a medium exposure risk or higher, further evaluation and mitigative measures shall be evaluated to reduce overall exposure risk prior to work authorization.

Very High Exposure Risk (Activities not conducted by Roux)

Very high exposure risk includes occupations/work activities with high potential for exposure to known or suspected sources of COVID-19 during specific medical, postmortem, or laboratory procedures. This can include but is not limited to:

- Healthcare workers (e.g., doctors, nurses, dentists, paramedics, emergency medical technicians) performing aerosol-generating procedures (e.g., intubation, cough induction procedures, bronchoscopies, some dental procedures and exams, or invasive specimen collection) on known or suspected COVID-19 patients.
- Healthcare or laboratory personnel collecting or handling specimens from known or suspected COVID-19 patients (e.g., manipulating cultures from known or suspected COVID-19 patients).
- Morgue workers performing autopsies, which generally involve aerosol-generating procedures on the bodies of people who are known to have, or suspected of having, COVID-19 at the time of their death.

High Exposure Risk (Activities not conducted by Roux)

High exposure risk occupations/work activities include exposure to known or suspected COVID-19 positive individuals. This can include but not limited to:

- Healthcare delivery and support staff (hospital staff who must enter patients' rooms) exposed to known or suspected COVID-19 patients.
- Medical transport workers (ambulance vehicle operators) moving known or suspected COVID-19 patients in enclosed vehicles.
- Mortuary workers involved in preparing bodies for burial or cremation of people known to have, or suspected of having, COVID-19 at the time of death.
- Those who have frequent or sustained contact with coworkers, including under close working conditions indoors or in poorly ventilated spaces in various types of industrial, manufacturing, agriculture, construction, and other critical infrastructure workplaces.
- Those who have frequent indoor or poorly ventilated contact with the general public, including workers in retail stores, grocery stores or supermarkets, pharmacies, transit and transportation operations, law enforcement and emergency response operations, restaurants, and bars.

Medium Exposure Risk

Medium exposure risk occupations/work activities include those that require frequent and/or close contact with (i.e., within 6 feet for a cumulative total of 15 minutes or more over a 24-hour period)) people who may be infected with COVID-19, but who are not known or suspected to be COVID-19 positive. For most of our worksites, it is assumed there is on-going community transmission for COVID-19. Therefore, workers who work at sites and may have contact with the general public, other contractors, high-population-density work environments (i.e., greater than 10 people) fall within medium exposure risk group category. This can include, but is not limited to, sampling events that require two or more workers to collect and log samples in close contact or work occurring in an interior space with limited ventilation and several workers present.

Lower Exposure Risk (Caution)

Lower exposure risk (caution) occupations/work activities are those that do not require close contact (within 6 feet for a cumulative total of 15 minutes or more over a 24-hour period) with other people. During these activities, there is limited contact (i.e., within 6 feet of) the general public or other workers. Workers in this category have minimal occupational contact with the public and other coworkers. This includes construction oversight that does not require close contact, sampling or gauging events performed by one worker and our remote workers as well as office workers who do not have frequent close contact with coworkers, clients, or the public.

6. COVID-19 HEALTH SCREENING

6.1. Roux Employees

All Roux employees are required to self-attest to a COVID-19 Daily Health Questionnaire which is to be completed at home through a mobile application on scheduled workdays. The purpose of this program is to ensure business continuity as well as mitigate any potential exposure to our employees and others if it is determined employees are at-risk for contracting COVID-19. As part of this self-attestation, all employees are required to take their temperatures daily at home to confirm they do not have a fever (≥ 100.4). Employees who answer yes to any of these questions are instructed to contact their Office Manager and/or Department Head immediately and should not enter the office or go to a field site. Information shall be used to determine appropriate internal response in consultation with the Human Resources Director (HRD) and CHSD.

Below, you will find our COVID-19 Daily Health Questionnaire that all Roux employees are required to self-attest to **every scheduled workday by 9:30 AM.** If employees do not promptly fill out the questionnaire by the time listed above, there will be additional follow up by HR, H&S, and/or OMs.

According to the U.S. Centers for Disease Control and Prevention & the World Health Organization, COVID-19 Symptoms include:

- *Fever (≥100. 4°F) 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*

Have you experienced any of the COVID-19 related symptoms noted above in the last 14 days? Please Note: We do not expect employees to answer "yes" to the symptoms question if these are symptoms you normally experience due to another condition or medication.

- *Yes*
- *No*

Have you been in close contact with someone who is suspected or confirmed to have COVID-19 or who is under investigation for COVID-19 within the last 14 days? *Close contact is defined as someone who was within 6 feet of an infected person for at least 15 minutes or coming into direct contact with secretions (e.g., sharing utensils, being coughed on) from an infected person.*

- *Yes*
- *No*

Have you traveled outside of the country, been on a cruise ship and/or traveled to areas within the United States which have state mandated travel restrictions in the last 14 days?

- *Yes*
- *No*

Have you tested positive for COVID-19 within the last 14 days?

- *Yes*
- *No*

6.2. Subcontractors

In an effort to mitigate the risk of transmission of COVID-19, Subcontractors who shall perform work on-site are required to attest to the fitness of their work crew on a daily basis. This requires each worker to self-assess by asking themselves the four questions listed in the section above and also contained within the Roux Subcontractor Work Crew COVID-19 Daily Health Attestation. If any crew member answers "Yes" to any of the questions, that worker is not to report to the field site and should seek proper medical advice, in accordance with local, state and federal guidelines.

On a daily basis, the subcontractor supervisor must provide the Subcontractor Work Crew COVID-19 Daily Health Attestation complete with the names of all work crew fit to be on the site for that day (i.e., who have answered "No" to all questions on the self-assessment) to Roux's Project Manager or Site Supervisor. The Subcontractor must notify Roux if there have been any "Yes" responses daily. Subcontractors shall not be required to provide the name or any other personal information of any employee who has answered "Yes" to any of the self-assessment questions, however, the subcontractor should provide the date and times that employee has been onsite in the prior 14 days. Records shall be maintained within the project files indicating health screening has been performed, records shall be retained for not less than 14 days following the date of submission. The Roux Subcontractor Work Crew COVID-19 Daily Health Check Attestation can be found within Appendix A.

7. SELF-ISOLATION & QUARANTINE

7.1. Self-Isolation

What if I am asked to self-isolate at home and when can I return from home isolation?

Depending on the situation, if you are COVID-19 positive or suspected to have COVID-19, employees may be required to self-isolate in their homes, as per CDC or local health department guidelines. As per CDC guidance, return from isolation has been broken out into two categories. The first includes confirmed or suspected COVID-19 individuals exhibiting symptoms, and the second includes those who have not had COVID-19 symptoms (i.e., asymptomatic), but tested positive and are under self-isolation. Both categories, along with strategies to return from home isolation, are outlined below.

People with COVID-19 under home isolation:

Accumulating evidence supports ending isolation and precautions for persons with COVID-19 using a symptom-based strategy. Specifically, researchers have reported that people with mild to moderate COVID-19 remain infectious no longer than 10 days after their symptoms began, and those with more severe illness or those who are

severely immunocompromised remain infectious no longer than 20 days after their symptoms began. Therefore, CDC has updated the recommendations for discontinuing home isolation as follows:

1. **Persons with COVID-19 who have symptoms** and were directed to care for themselves at home may discontinue isolation under the following conditions:
   a. At least 10 days* have passed since symptom onset;
   b. At least 24 hours have passed since resolution of fever without the use of fever-reducing medications; and
   c. Other symptoms have improved.

   * *A limited number of persons with severe illness may produce replication-competent virus beyond 10 days, which may warrant extending the duration of isolation for up to 20 days after symptom onset. Consultation with your healthcare provider will be warranted in such cases of severe illness.*
2. **Persons infected with SARS-CoV-2 who never develop COVID-19 symptoms** may discontinue isolation and other precautions 10 days after the date of their first positive RT-PCR test for SARS-CoV-2 RNA.

7.2. Quarantine

Employees may be required to self-quarantine due to potential exposure with a suspected and/or confirmed COVID-19 positive individual as well as recent travel as per local/state guidelines. People in quarantine should stay home, separate themselves from others, monitor their health, and follow directions from their state or local health department.

7.2.1. Close Contact Quarantine

Employees who have come into close contact with someone who has COVID-19 are required to self-quarantine for 14 days following their last contact with the COVID-19 positive person. Close contact as defined by the CDC is being within 6 feet of someone who has COVID-19 for a cumulative total of 15 minutes or more over a 24-hour period, providing care at home to someone who is sick with COVID-19, having direct physical contact with COVID-19 individual, sharing utensils with COVID-19 individual, and being sneezed/coughed on by someone with COVID-19. Please note an infected person can spread SARS-CoV-2 starting from 2 days before they have any symptoms (or, for asymptomatic patients, 2 days before the positive specimen collection date), until they meet the criteria for discontinuing home isolation.

Employees who have been fully vaccinated (as per CDC guidance) or who were previously diagnosed with COVID-19 within the last three months and show no symptoms are not required to quarantine. Additional consultation with the HRD and CHSD shall occur in these circumstances.

7.2.2. Travel Related Quarantine

All travel out of state must be communicated with the OM and/or Department Head prior to departure. Please note, some state/local entities require submissions of traveler health forms. It is expected all Roux employees will comply with such state/local travel requirements. All employees returning from international and/or cruise ship travel must quarantine for 10 days from the time they have returned home and avoid being around people who are at increased risk for severe illness for 14 days, whether you get tested or not.

Personal Travel

Employees who will be traveling out of state are responsible for checking the local/state quarantine guidance for the regions they are traveling from and to in advance of travel and notifying their OM prior to traveling in order to evaluate the impact on the business. Based on state/local guidelines you may be required to quarantine for 10 days from the time you have returned home.

Work-Related Travel

The Project Team (i.e., PM & PP) and field staff who will be traveling are responsible for checking the local/state quarantine guidance for the regions they are traveling from and to in advance of travel and notifying their OM prior to traveling in order to evaluate the impact to the business. Additionally, health and safety considerations shall be

reviewed by the OM in consultation with the CHSD regarding logistics and overnight accommodations. Based on state/local guidelines, you may be required to quarantine for 10 days from the time you have returned home.

8. WORKPLACE CONTROLS

During the project planning phase, worksite evaluations shall be carried out by the PP and OM in consultation with the CHSD to determine risk exposure levels for work activities. If it is determined there is a medium exposure risk level or higher, additional workplace controls shall be evaluated and implemented as required in addition to the basic infection prevention measures outlined below in Section 9. Additional workplace controls can include engineering controls (i.e., ventilation, physical barriers), administrative controls (i.e., minimizing contact between workers, rotating shifts, site specific training), and additional personal protective equipment (i.e., respiratory protection). If exposure risk cannot be mitigated, potential project postponement may be necessary at the discretion of the OM in consultation with the CHSD.

A Job Safety Analysis (JSA) has been developed and is provided in Appendix B, which summarizes and applies concepts within this guidance including the infection prevention measures listed below. This JSA shall be required for all field work in areas where there is community-based transmission of COVID-19.

9. INFECTION PREVENTION MEASURES

The following is basic infection prevention and personal hygiene practices which shall be implemented for all Roux field activities as well as in the office setting.

- ***Personal Hygiene***
  - Wash your hands often with soap and water for at least 20 seconds.
    - If soap and water are not available, use an alcohol-based sanitizer that contains at least 60% ethanol or 70% isopropanol.
    - Key times to wash your hands include after blowing your nose, coughing or sneezing, after using the restroom, and before eating or preparing food.
  - Do not touch your eyes, face, nose and mouth with unwashed hands.
  - Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow.
  - Throw potentially contaminated items (e.g., used tissues) in the trash.
- ***Avoid Close Contact/Secondary Contact with People and Potentially Contaminated Surfaces***
  - Apply appropriate social distance (6+ feet).
  - Stop handshaking—use and utilize other noncontact methods for greeting.
  - Do not work in areas with limited ventilation with other Site workers (e.g., small work trailer which lacks HVAC system). If working in a trailer, the following conditions must be met: limited to 4 workers, large enough to have the ability to apply social distance and has open windows and/or operational HVAC to ensure proper ventilation of the workspace.
  - Morning tailgate/safety meetings shall occur outside and not within work trailers.
    - Do not require employees or subcontractors to sign in using the same tailgate form. The Site Supervisor/SHSO should record names of those in attendance on the form.
    - If the Site has more than 10 workers, separate tailgate meetings should be performed in smaller groups.
  - Do not share equipment or other items with co-workers and subcontractors unless wearing appropriate PPE (e.g., nitrile gloves). Assume equipment and other surfaces are potentially contaminated and remove gloves aseptically.
  - If receiving labware or other equipment disinfect to the extent feasible. If there are concerns for contaminating labware please wear appropriate PPE (e.g., gloves) to minimize contact.

- Contact your lab/equipment vendor to confirm equipment is properly disinfected prior to being shipped.
- Do not carpool with others (e.g., clients, coworkers).
- For company owned vehicles limit sharing of vehicles with coworkers. If unable to limit sharing of company owned vehicles, properly disinfect vehicle before driving with a focus on commonly touched surfaces (e.g., steering wheels, shifters, buttons, etc.).
- Use caution when using public restrooms, portable toilets. Use paper towel as a barrier when touching door handles and faucets.

- ***Cleaning and Disinfecting***
  - Clean and disinfect frequently touched surfaces daily. Commonly touched items can include but are not limited to tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, sinks, and field equipment (i.e., photo-ionization detector, field equipment).
  - **Hard (Non-porous) Surfaces**
    - If surfaces are dirty, they should be cleaned with a detergent/soap and water prior to disinfection.
    - Refer to the manufacturer's instructions to ensure safe and effective use of the product and wear appropriate personal protective equipment (e.g., gloves, safety glasses, face shield).
    - Many products require:
      - Keeping surface wet for a period of time (i.e., contact time)
        - Refer to manufacturer's instructions outlining adequate contact time.
      - Precautions such as wearing gloves and making sure you have good ventilation during use of the product.
    - Disposable gloves should be removed aseptically and discarded after cleaning. Wash hands immediately following removal of gloves. Refer to Appendix C for how to remove gloves aseptically.
    - If products on EPA List N: Disinfectants for Coronavirus (COVID-19) are not available, bleach solutions can be used if appropriate for the surface and will be effective against coronaviruses when properly diluted.
      - Most household bleach contains 5%–9% sodium hypochlorite. Do not use a bleach product if the percentage is not in this range or is not specified, such as some types of laundry bleach or splash-less bleach as these are not appropriate for disinfection.
      - Follow the directions on the bleach bottle for preparing a diluted bleach solution. If your bottle does not have directions, you can make a bleach solution for disinfecting by mixing:
        - 5 tablespoons (1/3 cup) of bleach per gallon of room temperature water OR
        - 4 teaspoons of bleach per quart of room temperature water
      - Follow the manufacturer's application instructions for the surface. If instructions are not available, leave the diluted bleach solution on the surface for at least 1 minute before removing or wiping. This is known as the "contact time" for disinfection. The surface should remain visibly wet during the contact time.
      - Ensure proper ventilation during and after application (for example, open windows).
      - Never mix household bleach (or any disinfectants) with any other cleaners or disinfectants. This can cause vapors that may be very dangerous to breathe in.
      - Make a new diluted bleach solution daily. Bleach solutions will not be as effective after being mixed with water for over 24 hours. Products with EPA-approved emerging viral pathogen claims are expected to be effective against COVID-19. Follow the manufacturer's instructions

for all cleaning and disinfecting products (e.g., concentration, application method and contact time, etc.).

- **Soft (Porous) Surfaces**
  - For soft (porous) surfaces, remove visible contamination if present and clean with appropriate cleaners indicated for use on the surfaces. After cleaning:
    - Launder items as appropriate in accordance with the manufacturer's instructions. If possible, launder using the warmest appropriate water setting for the item and dry items completely; or
    - Use products with the EPA-approved emerging viral pathogens that claim they are suitable for porous surfaces.
- **Electronics**
  - For electronics such as tablets, touch screens, keyboards, remote controls, etc. remove visible contamination if present.
    - Follow the manufacturer's instructions for all cleaning and disinfection products.
    - Consider use of wipeable covers for electronics.
    - If no manufacturer guidance is available, consider the use of alcohol-based wipes or sprays containing at least 70% alcohol to disinfect touch screens. Dry surfaces thoroughly to avoid pooling of liquids.
- ***Linens, Clothing, and Other Items that Go in the Laundry***
  - Although it is unlikely field clothing would become potentially contaminated with COVID-19, it is recommended that field staff regularly launder field clothing following any field event upon returning home.
  - In order to minimize the possibility of dispersing the virus from potentially contaminated clothing, do not shake dirty laundry.
  - Wash items as appropriate in accordance with the manufacturer's instructions. If possible, launder items using the warmest appropriate water setting for the items and dry items completely.
  - Clean and disinfect hampers or other containers used for transporting laundry according to guidance listed above.
- ***Office/Site Specific-Cleaning and Disinfection Protocols***

  Each office and long-term field site has developed internal cleaning and disinfecting practices, which are broken into three categories: routine cleaning; enhanced cleaning and disinfecting; and deep cleaning and disinfecting. In the instance there is someone who is suspected or confirmed positive for COVID-19 and has worked at the office or field site, deep cleaning and disinfecting shall be considered. The CHSD shall work with the OM and Office Health and Safety Manager to evaluate site-specific measures that shall be carried out prior to deep cleaning and disinfecting. This can include, but is not limited to, closing off all areas potentially affected, as determined through contact tracing. Areas should remain closed off for a minimum of 24 hours during this time; if able, ventilation shall be increased in the space (e.g., opening doors, windows, increasing CFM). Following this period, all areas used by the suspected or confirmed COVID-19 individual shall be cleaned and disinfected appropriately. Areas can include, but are not limited to, offices, bathrooms, shared equipment used by the ill person, and common areas with a focus on frequently touched surfaces. If it has been more than seven (7) days since the person with suspected/ confirmed COVID-19 visited or used the facility, additional cleaning and disinfecting is not necessary.

10. CLOTH FACE COVERINGS

The CDC recommends the use of cloth face coverings in public settings where other social distancing measures are difficult to maintain. This recommendation is based on recent studies and an understanding that a significant portion of asymptomatic, as well as pre-symptomatic, individuals can shed the virus to others before showing

symptoms. Studies indicate that COVID-19 can spread among people interacting in close proximity through speaking, coughing, or sneezing. The use of cloth face coverings is to supplement and NOT replace the existing practices outlined above.

Based on existing studies and on-going recommendations and/or requirements from federal, state, and local entities, Roux is recommending the use of cloth face coverings, when appropriate. Appropriate use is defined when local authorities or clients require the use of cloth face coverings in conjunction with established social distancing, or if an employee elects to use a cloth covering on their own accord. Roux will provide cloth face coverings that shall meet the basic requirements outlined by the CDC guidance.

Cloth Face Coverings (i.e., masks) should:

- Completely cover the nose and mouth;
- Fit snugly against the sides of the face and not have any gaps;
- Be handled only by the ear loops, cords or head straps (not by the surface of the mask);
- Include multiple layers of fabric;
- Allow for breathing without restriction; and
- Be able to be laundered and machine dried with no damage or change to shape.

When donning and doffing the cloth face covering, individuals should avoid touching their eyes, nose, and mouth. Following removal of the cloth face covering, employees should wash their hands immediately using the guidelines described in Section 9 above. Cloth face coverings should be routinely washed depending on the frequency of use.

Note, the cloth face coverings recommended are not surgical masks or N-95 respirators. Those are critical supplies that must continue to be reserved for healthcare workers and other medical first responders, as recommended by current CDC guidance. Should there be a requirement for workers to be in respiratory protection (e.g., full-face respirator w/cartridges, P100, N95 respirators), it shall be addressed during the project pre-planning phase, which includes discussions with the PP and OM in consultation with CHSD.

Additional information on improving the fit and filtration of your mask can be found at the following CDC website.

11. HOTEL SELECTION PROCESS AND OVERNIGHT/REMOTE WORK

Hotel Selection

If there is a project requiring the overnight stay at a hotel, accommodations shall be made only after the hotel and hotel's location have been vetted in accordance with Roux's established guidance as defined below. The Project Team, which includes the Project Manager (PM) and PP along with the OM, in consultation with the CHSD, shall verify the hotel has appropriate protocols in place to limit the potential exposure and spread of COVID- 19 through proper cleaning and disinfection practices. Discussions with the hotel shall include, but are not limited to, measures taken to keep guests safe during their stay, guest room sanitization schedule, training of staff regarding disinfecting protocols using EPA-approved disinfectants, hotel staff fitness for duty requirements, etc. Some example questions are listed below. Following the initial hotel assessment by the Project Team, the OM and the CHSD shall review the hotel assessment findings prior to the CHSD's authorization that the hotel may be used by any Roux employees.

Sample Questions for Evaluating Hotels

1. Is there an established COVID-19 guidance/policy your location is following?
2. What additional measures are being implemented to keep workers and customers safe?; (e.g. signs/placards, social-distancing/mask reminders)
3. Is there a guest room sanitization schedule?
4. Have staff been trained on properly cleaning/disinfecting areas?

5. What types of disinfectants are in use at your location?
6. How are you evaluating staff fitness for duty? (e.g., temperature checks, not reporting to work when sick, etc.)

Employees staying overnight should abide by the following guidance:

- Ensure you properly disinfect your room upon arrival. This should include a wipe down of all commonly touched surfaces with an approved disinfectant. Use appropriate PPE (e.g., nitrile gloves) when disinfecting surfaces.
- Place the "Do Not Disturb" placard on the room while away and consider limiting hotel housekeeping service to the extent feasible (e.g., not having the room cleaned each day) to minimize potential secondary contact with others.
- Do not spend any more time in hotel common areas (i.e., lobby, hallways, etc.) than is necessary.
- Follow proper Infection Prevention Measures found within Section 9 above.
- Have meals in your hotel room after disinfecting outer package surfaces, as outlined in Section 9 above. Do not eat in public spaces or restaurants.
- If the hotel has a restaurant or café, do not have your meal in a common area; instead order food to be picked up or delivered to your room. If delivered, opt for contactless delivery (left outside the door, delivery person knocks and leaves). Always use your own pen if you need to sign something.
- Employees may also pick up food from takeout locations, order groceries or food for delivery to the hotel. Call local restaurants to order food for delivery (call the hotel lobby for recommendations) or use food ordering apps. Some apps have options for contactless delivery.

12. TRANSPORTATION-RENTAL CARS AND ROUX-OWNED VEHICLES

Rental Cars

If there is a project requiring the use of a rental car (e.g., truck/van), accommodations shall be made only after the rental car company and their store's location have been vetted in accordance with Roux's established guidance, as defined below. The Project Team (PM and PP) and OM in consultation with the CHSD shall verify the rental company where you are picking up your vehicle has appropriate protocols in place to limit the potential exposure and spread of COVID- 19 through proper cleaning and disinfection practices. Discussions with the rental car company shall include, but are not limited to, measures to be taken to keep customers safe during pickup/drop-off, rental car disinfection protocols, training of staff regarding disinfecting protocols using EPA-approved disinfectants, rental car company staff fitness for duty requirements, etc. Some example questions are listed below. Following the initial rental car company store assessment by the Project Team, the OM and the CHSD shall review the rental car company assessment findings prior to the CHSD's authorization that the rental car company store may be used by any Roux employees.

Sample Questions for Evaluating Rental Car Companies

1. Is there an established COVID-19 guidance your location is following?
2. What additional measures are being implemented to keep workers and customers safe?
3. Is there a car sanitization schedule?
4. Have staff been trained on properly cleaning/disinfecting vehicles?
5. What types of disinfections are in use at your location?
6. How are you evaluating staff fitness for duty? (e.g., temperature checks, not reporting to work when sick, etc.)

Upon vehicle pickup, employees shall don nitrile gloves and safety glasses and clean/disinfect all high-touch surfaces (steering wheel, knobs, door handles, turn signals, radio, etc.) by wiping thoroughly with approved disinfectants (following manufacturer's instructions). Aseptically remove gloves and dispose of them along with

rags/wipes, appropriately. Wash hands or use hand sanitizer immediately after each episode of cleaning. Due to social distancing requirements, personnel shall not carpool to destinations.

Roux-Owned Vehicles

Roux-owned vehicles should be dedicated to individual employees to the extent feasible, and if authorized by the OM. In the case this cannot be accommodated, employees shall don nitrile gloves and safety glasses, and clean/disinfect all high-touch surfaces (steering wheel, knobs, door handles, turn signals, radio, etc.) by wiping thoroughly with approved disinfectants (following manufacturer's instructions). This cleaning and disinfection shall occur before and after each use of the vehicle. Aseptically remove gloves and dispose of them along with rags/wipes, appropriately. Wash hands or use hand sanitizer immediately after each episode of cleaning. Due to social distancing requirements, personnel shall not carpool to destinations.

APPENDIX A

Roux Subcontractor Work Crew
COVID-19 Daily Health Screening Questionnaire

Subcontractor Work Crew
COVID-19 Daily Health Attestation

Date:
Company Name:
Supervisor Name: Signature:
Project Name:
Site Address:
Number of Workers on site:

Prior to entry onto a field site, the following questions shall be asked by the Subcontractor Supervisor to their work crew.

It is preferred this questionnaire is completed for each individual prior to their arrival at the field site. If the answer to any of these questions is YES, the worker is not to report to the field site and seek proper medical advice, in accordance with CDC Guidelines.

The Subcontractor Supervisor must provide this form on a daily basis to the Roux primary contact for the project and notify Roux of any YES responses.

1. Have you experienced any signs/symptoms of COVID-19 such as fever (≥100.4°F), cough, shortness of breath, chills, fatigue, muscle/body aches, headache, new loss of taste or smell, sore throat, congestion or runny nose, nausea/vomiting or diarrhea in the last 14 days?

2. Have you been in close contact* with someone who is suspected or confirmed to have COVID-19 or who is under investigation for COVID-19 within the last 14 days?

*Close contact is defined as someone who was within 6 feet of an infected person for at least 15 minutes or coming into direct contact with secretions (e.g. sharing utensils, being coughed on) from an infected person.

3. Have you traveled outside of the country, been on a cruise ship and/or traveled to areas within the United States which have state mandated travel restrictions in the last 14 days?

4. Have you tested positive for COVID-19 within the last 14 days?

Please list the crew member's names on site for the day.

1.	9.
2.	10.
3.	11.
4.	12.
5.	13.
6.	14.
7.	15.
8.	16.

APPENDIX B

Job Safety Analysis-Working in Areas Affected by COVID-19

JOB SAFETY ANALYSIS	Ctrl. No. CVD-19	DATE: 04/16/2020	☒ NEW ☐ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
Generic	**Fieldwork**	**Working in Areas Affected by Coronavirus**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Kristina DeLuca	Health and Safety Specialist	Brian Hobbs	CHSM

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES – Leather/cut-resistant in field and nitrile as needed
☒ HARD HAT – In field	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	
☐ LIFELINE / BODY HARNESS	☐ HEARING PROTECTION	☒ PPE CLOTHING – High visibility vest in field	☐ OTHER
☒ SAFETY GLASSES – In field	☒ SAFETY SHOES – Steel/composite toe in fie		

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Cloth face covering, nitrile gloves, hand soap, water source, hand sanitizer, disinfectant spray and disinfectant wipes.

Commitment to Safety – All personnel onsite will actively participate in SPSA performance by verbalizing SPSAs throughout the day.

SOCIAL DISTANCING: Maintain 6' of distance between yourself and all other people at all times. If you do not believe the scope of work can be conducted while maintaining this distance, contact your Project Manager immediately.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Project Preplanning	N/A	• Review and follow COVID-19 CDC, Roux, Client and local orders/protocols. • Ensure all workers are fit for duty - anyone feeling sick should remain at home even if symptoms do not align with COVID-19. If a worker has been in contact with someone potentially positive or positive for COVID-19, contact your Office Manager. • Determine PPE needs and ensure adequate supply of disinfectant wipes/spray, soap and water or hand sanitizer at Site. Due to high demands and limited supply, plan ahead. • Use the minimum number of employees necessary to safely complete the work.
2. Mobilization	**Exposure:** Becoming infected or infecting co-workers	**Personal/Rental/Roux Owned Vehicle** • Do not carpool. • Use the same vehicle every day and do not share with co-workers. • Verify workers/other people are not approaching vehicle prior to exiting the vehicle. Maintain 6' of distance from others. • DO not valet your car or allow others to use your car. If necessary, don nitrile gloves and safety glasses and clean/disinfect all high touch surfaces (steering wheel, knobs, door handles, turn signals, radio, etc.) by wiping thoroughly with approved disinfectants (follow manufacturer's instructions). This cleaning and disinfection shall occur before and after each use of the vehicle. Aseptically remove gloves and dispose of them along with rags/wipes, appropriately. Wash hands or use hand sanitizer immediately after each episode of cleaning. **Public Transportation** • Public transit should not be used unless absolutely necessary. Consider renting a car rather than taking public transit. If public transit is required, wear appropriate PPE and apply social distancing (6 ft). Use proper donning and doffing procedures for nitrile gloves. Wash hands or use hand sanitizer immediately after. **Hotel Stay (Refer to COVID-19 H&S Guidance for more info)** • If a hotel stay is deemed necessary for the given field work, ensure that you disinfect your room upon initial arrival and returning each day. Disinfect all surfaces of your room with an appropriate disinfectant using nitrile gloves. Use proper donning and doffing procedures for nitrile gloves. • Place the "Do Not Disturb" placard on the room while away and limit housekeeping services to the extent feasible during your stay to minimize the reintroduction and spread of the virus from others. Minimize, or avoid entirely, time spent in hotel common areas (i.e., the lobby, dining areas, gyms, etc.). Wash hands or use hand sanitizer often.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards, energy source; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

3. Tailgate Meeting	**Exposure:** Becoming infected or infecting co-workers	• Must occur outside or remotely (i.e. video or conference call). • Maintain at least a 6+ ft distance between you and others. • Discuss primary infection prevention measures listed below. • Do not require employees or subcontractors to sign in, the Site Supervisor shall record names on the attendance form. • If the Site has more than 10 workers, separate tailgate meetings should be performed. • Discuss COVID-19 symptoms with coworkers and subcontractors to ensure fitness for duty. Anyone exhibiting signs or symptoms should be instructed to leave the Site, contact your Project Manager.
4. Site Activities	**Exposure:** Becoming infected or infecting co-workers	• Coordinate field activities at the beginning of the day (i.e. Tailgate meeting) to minimize time spent in crowded spaces or overlap while completing job tasks. • Don cloth face coverings as appropriate. • Apply social distancing (6+ ft) when interacting with others. If anyone comes within 6 ft of you while conducting work and your work prevents you from moving away, politely ask them to move back. If others are unable to move from your space, stop work and leave area. • Do not shake hands or touch others. • Do not share equipment or other items with co-workers and subcontractors unless wearing appropriate PPE (e.g. nitrile gloves). Assume equipment and other surfaces are potentially contaminated and remove gloves aseptically (See Appendix A of Roux Interim H&S Guidance for proper glove removal). • If anyone is coughing or sneezing in your vicinity, stop work and leave the area. • Do not work in areas with limited ventilation with others. • Cover your mouth and nose with tissue or paper towel or with your elbow when coughing or sneezing and wash hands or use hand sanitizer immediately after. If sick contact SHSO/PM and leave Site immediately. • Disinfect work surfaces/areas with approved disinfectant you're responsible for (ex: desk, office doorknob, computer, etc.) at least once at the beginning of your shift and at least once at the end of your shift with either sanitizing wipes or disinfectant spray. • Phones should be operated hands free to extent feasible. Sanitize your phone on a regular basis. Disinfection should also take place whenever suspected contaminated material comes in contact with any work surfaces/areas. Wash hands or use hand sanitizer immediately after. • Avoid public spaces and going out to eat by bringing your own lunch to the Site. If performing work in high density urban areas, it is recommended all food must be consumed at or in your vehicle. Wash hands or use hand sanitizer before eating and immediately after.

Primary Infection Prevention Measures

- Wash your hands often with soap and water for at least 20 seconds.
  - If soap and water are not available, use an alcohol-based sanitizer that contains at least 60% ethanol or 70% isopropanol. Key times to wash hands include after blowing your nose, coughing or sneezing, after using the restroom, and before eating or preparing food.
- Do not touch your eyes, face, nose and mouth with unwashed hands.
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow. Throw potentially contaminated items (e.g. used tissues) in the trash.
- Avoid close contact/secondary contact with people and potentially contaminated surfaces.
  - Apply appropriate social distance (6+ feet).
  - Stop handshaking/touching others and use caution when accessing public spaces.
- Clean and disinfect frequently touched surfaces daily. Commonly touched items can include but are not limited to tables, doorknobs, light switches, countertops, handles, desks, phones, keyboard, toilets, sinks and field equipment. If surfaces are dirty, they should be cleaned with soap and water prior to disinfection. If surface cannot be cleaned/disinfected, then wash hands or use sanitizer as soon as possible.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.

[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy source – electricity, pressure, compression/tension.

[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

APPENDIX C

How to Remove Gloves

How to Remove Gloves

To protect yourself, use the following steps to take off gloves

1

Grasp the outside of one glove at the wrist. Do not touch your bare skin.

2

Peel the glove away from your body, pulling it inside out.

3

Hold the glove you just removed in your gloved hand.

4

Peel off the second glove by putting your fingers inside the glove at the top of your wrist.

5

Turn the second glove inside out while pulling it away from your body, leaving the first glove inside the second.

6

Dispose of the gloves safely. Do not reuse the gloves.

7

Clean your hands immediately after removing gloves.

APPENDIX D

Personal Protective Equipment (PPE) Management Program

PERSONAL PROTECTIVE EQUIPMENT MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY MANAGER	:	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	:	**01/19**
REVISION NUMBER	:	**4**

TABLE OF CONTENTS

1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux") has instituted the following program to establish guidelines for the selection of personal protective equipment (PPE) for use by Roux personnel performing field activities in hazardous environments. PPE is not meant to be a substitute for engineering, work practice, and/or administrative controls, but PPE should be used in conjunction with these controls to protect the employees in the work place. Clothing, body coverings, and other accessories designed to prevent worker exposure to workplace hazards are all types of PPE. To ensure adequate PPE employee-owned PPE is evaluated on a case-by-case basis to insure its adequacy, maintenance and sanitation.

2. SCOPE AND APPLICABILITY

These guidelines apply to all PPE selection decisions to be made in implementing the Roux program. The foundations for this program are the numerous Occupational Health and Safety Administration (OSHA) standards related to PPE cited in 29 CFR 1910 Subpart I, 29 CFR 1926 Subpart E, and the hazardous environment work employee protection requirements under the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard at 29 CFR 1910.120 and 1926.65. To ensure hazard assessments are documented the levels of protection, types of protection and tasks requiring protection are covered in site-specific Health and Safety Plans (HASPs) and Job Safety Analyses (JSAs).

3. PROCEDURES

Due to the varied nature of site activities and the different potential hazards associated with different sites, several aspects must be considered when selecting PPE. The following text describes PPE selection logic and provides guidelines and requirements for the appropriate selection and use of PPE.

3.1 Introduction

To harm the body, chemicals must first gain entrance. The intact skin and the respiratory tract are usually the first body tissues attacked by chemical contaminants. These tissues provide barriers to some chemicals but in many cases, are damaged themselves or are highly permeable by certain chemical compounds. Personal protective equipment therefore is used to minimize or eliminate chemical compounds coming into contact with these first barrier tissues.

The proper selection of equipment is important in preventing exposures. The PM making the selection will have to take several factors into consideration. The level of protection, type and kind of equipment selected depends on the hazardous conditions and in some cases cost, availability, compatibility with other equipment, and performance. An accurate assessment of all these factors must be made before work can be safely carried out.

3.2 Types of PPE

The type and selection of PPE must meet certain general criteria and requirements as required under OSHA 29 CFR 1910.132 and 1926.95. In addition to these general requirements, specific requirements and specifications exist for some types of PPE that form the basis of the protective clothing scheme. Following is a list of the common types of specific PPE and the specific requirements for the PPE type, where applicable:

1. Hard Hats - Regulated by 29 CFR 1910.135 and 1926.100; and, specified in ANSI Z89.1.

2. Face Shields and Safety Glasses - Regulated by 29 CFR 1910.133 and 1926.102; and, specified in ANSI Z87.1.
3. Respiratory Protection - Regulated by 29 CFR 1910.134 and 1926.103.
4. Hand Protection - Not specifically regulated.
5. Foot Protection - Regulated by 29 CFR 1910.136 and 1926.96; and, specified in ANSI Z41.1.
6. Protective Clothing (e.g., fully encapsulated suits, aprons) - Not specifically regulated.

3.3 Protective Clothing Selection Criteria

3.3.1 Chemicals Present

The most important factor in selecting PPE is the determination of what chemicals the employee may be exposed to. On field investigations, the number of chemicals may range from a few to several hundred. The exact chemicals or group of chemicals present at the site (certain groups tend to require similar protection) can be determined by collecting and analyzing samples of the air, soil, water, or other site media. When data are lacking, research into the materials used or stored at the site can be used to infer chemicals possibly on the site.

Once the known or suspected chemicals have been identified, and taking into consideration the type of work to be performed, the most appropriate clothing shall be selected.

Protective garments are made of several different substances for protection against specific chemicals. There is no universal protective material. All will decompose, be permeated by, or otherwise fail to protect under given circumstances. Fortunately, most manufacturers make guides to the use of their products (i.e., Dupont's Tyvek™ Permeation Guide). These guides are usually for gloves and coveralls and typically provide information regarding chemical degradation rates (failure of the material to maintain structural integrity when in contact with the chemical), and may provide information on the permeation rate (whether or not the material allows the chemical to pass through). When permeation tables are available, they shall be used in conjunction with degradation tables to determine the most appropriate protective material.

During most site work, chemicals are usually in mixed combinations and the protective materials are not in continuous contact with pure chemicals for long periods of time; therefore, the selected material may be adequate for the particular chemical and type of work being performed, yet not the "best" protecting material for all site chemicals and activities. Selection shall depend upon the most hazardous chemicals based on their hazards and concentrations. Sometimes layering, using several different layers of protective materials, affords the best protection.

3.3.2 Concentration of the Chemical(s)

One of the major criteria for selecting protective material is the concentration of the chemical(s) in air, liquid, and/or solid state. Airborne and liquid chemical concentrations should be compared to the OSHA standards and/or American Conference of Governmental Industrial Hygienists (ACGIH) and National Institute for Occupational Safety and Health (NIOSH) guidelines to determine the level of skin or other absorptive surface (e.g., eyes) protection needed. While these standards are not designed specifically for skin exposed directly to the liquid, they may provide skin designations indicative of chemicals known to have significant skin or dermal absorption effects. For example, airborne levels of PCB on-site may be

low because it is not very volatile, so the inhalation hazard may be minimal; however, PCB-containing liquid coming in direct contact with the skin may cause overexposure. Thus, PCB has been assigned a skin designation in both the OSHA and ACGIH exposure limit tables.

3.3.3 Physical State

The characteristics of a chemical may range from nontoxic to extremely toxic depending on its physical state. Inorganic lead in soil would not be considered toxic to site personnel, unless it became airborne, since it is generally not absorbed through the intact skin. Organic lead in a liquid could be readily absorbed. Soil is frequently contaminated with hazardous materials. Concentrations will vary from a few parts per million to nearly one hundred percent. The degree of hazard is dependent on the type of soil and concentration of the chemical. Generally speaking, "dry" soils do not cause a hazard to site personnel if they take minimal precautions such as wearing some type of lightweight gloves.

3.3.4 Length of Exposure

The length of time a material is exposed to a chemical increases the probability of breakthrough. Determinations of actual breakthrough times for short-term exposures indicate that several different materials can be used which would be considered inadequate under long-term exposures. It should be kept in mind that during testing, a pure (100% composition) liquid is usually placed in direct contact with the material producing a worst-case situation.

3.3.5 Abrasion

When selecting protective clothing, the job the employee is engaged in must be taken into consideration. Persons moving drums or performing other manual tasks may require added protection for their hands, lower chest and thighs. The use of leather gloves and a heavy apron over the other normal protective clothing will help prevent damage to the normal PPE and thus reduce worker exposures.

3.3.6 Dexterity

Although protection from skin and inhalation hazards is the primary concern when selecting PPE, the ability to perform the assigned task must be maintained. For example, personnel cannot be expected to perform work that requires fine dexterity if they must wear a thick glove. Therefore, the PPE selection process must consider the task being performed and provide PPE alternatives or techniques that allow dexterity to be maintained while still protecting the worker (e.g., wearing tight latex gloves over more bulky hand protection to increase dexterity).

3.3.7 Ability to Decontaminate

If disposable clothing cannot be used, the ability to decontaminate the materials selected must be taken into consideration. Once a chemical contacts the material, it must be cleaned before it can be reused. If the chemical has completely permeated the material, it is unlikely that the clothing can be adequately decontaminated and the material should be discarded.

3.3.8 Climactic Conditions

The human body works best with few restraints from clothing. Protective clothing adds a burden by adding weight and restricting movement as well as preventing the natural cooling process. In severe situations, a modified work program must be used.

Some materials act differently when they are very hot and very cold. For example, PVC becomes almost brittle in very cold temperatures. If there are any questions about the stability of the protective materials under different conditions, the manufacturer should be contacted.

3.3.9 Work Load

Like climactic conditions, the type of work activity may affect work duration and the ability or personnel to perform certain tasks. Similarly, the amount of protective materials a person wears will affect their ability to perform certain tasks. For example, a person in a total encapsulating suit, even at 72 ^{o}F, cannot work for more than a short period of time without requiring a break.

The work schedule should be adjusted to maintain the health of the employees. Special consideration should be given to the selection of clothing that both protects and adds the least burden when personnel are required to perform strenuous tasks. Excessive bodily stress frequently represents the most significant hazard encountered during field work.

3.4 Types of Protective Materials

1. Cellulose or Paper
2. Natural and Synthetic Fibers
    a. Tyvek™
    b. Nomex™
3. Elastomers
    a. Polyethylene
    b. Saran
    c. Polyvinyl Chloride (PVC)
    d. Neoprene
    e. Butyl Rubber
    f. Viton

3.5 Protection Levels

3.5.1 Level A Protection

Level A protection (a fully encapsulated suit) is used when skin hazards exist or when there is no known data that positively rule out skin and other absorption hazards. Since Level A protection is extremely physiologically and psychologically stressful, the decision to use this protection must be carefully considered. At no time will Level A work be performed without the consent of the OM. The following conditions suggest a need for Level A protection:

- confined facilities where probability of skin contact is high;
- sites containing known skin hazards;
- sites with no established history to rule out skin and other absorption hazards;
- atmosphere immediately dangerous to life and health (IDLH) through the skin absorption route;
- site exhibiting signs of acute mammalian toxicity (e.g., dead animals, illnesses associated with past entry into site by humans);

- sites at which sealed drums of unknown materials must be opened;
- total atmospheric readings on the Photoionization Detector (PID), Flame Ionization Detector (FID), and similar instruments indicate 500 to 1,000 ppm of unidentified substances; and
- extremely hazardous substances (e.g., cyanide compounds, concentrated pesticides, Department of Transportation Poison "A" materials, suspected carcinogens and infectious substances) are known or suspected to be present and skin contact is possible.

The following items constitute Level A protection:

- open circuit, pressure-demand self-contained breathing apparatus (SCBA);
- totally encapsulated suit;
- gloves, inner (surgical type);
- gloves, outer;
- chemical protective;
- boots, chemical protective, steel toe and shank;
- radiation detector (if applicable); and
- communications.

3.5.2 Level B Protection

Level B protection is utilized when the highest level of respiratory protection is needed but hazardous material exposure to the few unprotected areas of the body is unlikely.

The following conditions suggest a need for Level B protection:

- the type and atmospheric concentration of toxic substances have been identified and they require the highest level of respiratory protection;
- IDLH atmospheres where the substance or concentration in the air does not present a severe skin hazard;
- the type and concentrations of toxic substances do not meet the selection criteria permitting the use of air purifying respirators; and
- it is highly unlikely that the work being done will generate high concentrations of vapors, gases or particulates, or splashes of materials that will affect the skin of personnel.

Personal protective equipment for Level B includes:

- open circuit, pressure-demand SCBA;
- chemical protective clothing:
- overalls and long-sleeve jacket; or
- coveralls;
- gloves, inner (surgical type); gloves, outer, chemical protective;
- boots, chemical protective, steel toe and shank; and
- communications optional.

3.5.3 Level C Protection

Level C protection is utilized when both skin and respiratory hazards are well defined and the criteria for the use of negative pressure respirators have been fulfilled (i.e., known contaminants and contaminant concentrations, acceptable oxygen levels, approved filter/cartridge available, known cartridge service life, etc.). Level C protection may require carrying an emergency escape respirator during certain initial entry and site reconnaissance situations, or when applicable thereafter.

Personal protective equipment for Level C typically includes:

- full facepiece air-purifying respirator;
- emergency escape respirator (optional);
- chemical protective clothing:
  - overalls and long-sleeved jacket; or
  - coveralls;
- gloves, inner (surgical type);
- gloves, outer, chemical protective; and
- boots, chemical protective, steel toe and shank.

3.5.4 Level D Protection

Level D is the basic work uniform. Personal protective equipment for Level D includes:

- coveralls;
- safety boots/shoes;
- eye protection;
- hand protection;
- reflective traffic safety vest (mandatory for traffic areas or railyard);
- hard hat (with face shield is optional); and
- emergency escape respirator is optional.

3.5.5 Level E Protection

Level E protection is used when radioactivity above 10 mr/hr is detected at the site. Personal protective equipment for Level E includes:

- coveralls;
- air purifying respirator;
- time limits on exposure;
- appropriate dermal protection for the type of radiation present; and
- radiation dosage monitoring.

3.5.6 Additional Considerations

Field work will contain a variety of situations due to chemicals in various concentrations and combinations. These situations may be partially ameliorated by following the work practices listed below:

1. Some sort of foot protection is needed on a site. If the ground to be worked on is contaminated with liquid and it is necessary to walk in the chemicals, some sort of protective "booties" can be worn over the boots. This cuts down on decontamination requirements. They are designed with soles to help prevent them from slipping around. If non-liquids are to be encountered, a Tyvek™ bootie could be used. If the ground contains any sharp objects, the advantage of booties is questionable. Boots should be worn with either cotton or wool socks to help absorb the perspiration.
2. If the site situation requires the use of hard hats, chin straps should be used if a person will be stooping over where his/her hat may fall off. Respirator straps should not be placed over the hard hats. This will affect the fit of the respirator.

   Some types of protective materials conduct heat and cold readily. In cold conditions, natural material clothing should be worn under the protective clothing. Protective clothing should be removed prior to allowing a person "to get warm". Applying heat, such as a space heater, to the outside of the protective clothing may drive the contaminants through. In hot weather, under clothing will absorb sweat. It is recommended that workers use all cotton undergarments.
3. Body protection should be worn and taped to prevent anything from running into the top of the boot. Gloves should be worn and taped to prevent substances from entering the top of the glove. Duct tape is preferred, but masking tape can be used. When aprons are used, they should be taped across the back for added protection. However, this should be done in such a way that the person has mobility.
4. Atmospheric conditions such as precipitation, temperature, wind direction, wind velocity, and pressure determine the behavior of contaminants in air or the potential for volatile material getting into the air. These parameters should be considered in determining the need for and the level of protection.
5. A program must be established for periodic monitoring of the air during site operations. Without an air monitoring program, any changes would go undetected and might jeopardize response personnel. Monitoring can be done with various types of air pumps and filtering devices followed by analysis of the filtration media; personnel dosimeters; and periodic walk-throughs by personnel carrying real-time survey instruments.
6. For operations in the exclusion zone, different levels of protection may be selected, and various types of chemical-resistant clothing may be worn. This selection should be based on the job function, reason for being in the area, and the potential for skin contact with, or inhalation of, the chemicals present.
7. Escape masks must be readily available when levels of respiratory protection do not include a SCBA and the possibility of an IDLH atmosphere exists. Their use can be made on a case-by-case basis. Escape masks could be strategically located at the site in areas that have higher possibilities of vapors, gases or particulates.

APPENDIX E

Subsurface Utility Clearance Management Program

SUBSURFACE UTILITY CLEARANCE MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY MANAGER	**:**	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	**:**	**01/19**
REVISION NUMBER	**:**	**2**

TABLE OF CONTENTS

APPENDICES

1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux") has instituted the following program for completing proper utility mark-outs and for conducting subsurface clearance activities. This establishes a method to ensure, to the greatest extent possible, that utilities have been identified and contact and/or damage to underground utilities and other subsurface structures will be avoided.

2. SCOPE AND APPLICABILITY

The Subsurface Utility Clearance Management Program applies to all Roux employees, its contractors and subcontractors. Employees are expected to follow this program for all intrusive work involving Roux or other personnel (e.g., contractors/subcontractors) working for Roux unless the client's requirements are more stringent. Deviation from the program regardless of the specific work activity or work location must be pre-approved based on client's site knowledge, site experience and client's willingness for the use of this program. Any and all exceptions shall be documented and pre-approved by the Project Principal and the Office Manager.

3. PROCEDURES

3.1 Before Intrusive Activities

During the project kick-off meeting for intrusive activities the PM will review the Roux Subsurface Utility Clearance Checklist and Utility Verification (Appendix C) / Site Walkthrough Record (Appendix D) and the below bullet points with the project field team:

(Please note that these are intended as general reminders only and should not be solely relied upon.)

- Ensure the Mark-out / Stake-out Request Information Sheet (or one-call report) is complete and accurate for the site including address and cross streets and review for missing utilities. (Note: utility mark-out organizations do not have contracts with all utilities and it is often necessary to contact certain utilities separately such as the local water and sewer authorities).
- Have written confirmation prior to mobilizing to the site that the firm or Roux personnel performing the intrusive activity has correctly completed the mark-out notification process including requesting mark-outs, waiting for mark-outs to be applied to ground surfaces at the site, and receiving written confirmation of findings (via fax or email) from utility operators for all known or suspected utilities in the proposed area of intrusive activity, and provided utility owner written confirmation to Roux personnel for review and project files documentation.
- Do not begin any intrusive activity until all utilities mark-out has been completed (i.e., did all utilities mark-out the site?) and any unresolved mark-out issues are finalized. Perform a site walk to review the existing utilities and determine if said utilities have been located by the utility locators.

  (Note: The Tolerance Zone is defined as two feet plus half of the diameter or half of the greatest dimension (for elliptical sewers, duct banks and other non-cylindrical utilities) of a utility and two feet from the outside edge of any subsurface structure.)
- Install Pre-Clearance exploratory test holes (e.g., hand-dug test holes or other soft digging techniques) for the first 5-ft below land surface (BLS) at each location prior to conducting mechanized intrusive activities. The size of the pre-clearance exploratory test hole should be at a minimum twice the diameter of any downhole tool or boring device. (Note: Pre-Clearance exploratory test holes should be defined in the SOW/proposal provided to the client to prevent project delays and to allow adequate time for PM and PP to evaluate alternative approaches for the project. Alternative approaches will need to be pre-approved by the OM.

- For excavations, all utilities need to be marked and then exposed by hand following the protocols in this program. Pre-clearing for excavations may be performed by the "moat" technique (i.e., soft digging around the perimeter). In these cases, dig in small lifts (<12" for first 5 feet) using a dedicated spotter.) For Tolerance Zone work, unless otherwise agreed upon with the Utility Operator, work within the tolerance zone requires verification by means of hand-dug test holes performed to expose the utility. Once structures have been verified a minimum clearance of two feet must be maintained between the utility and any powered equipment.
- In addition, the following activities should be conducted:
  - Review the work scope to be performed with the site owner/tenant to determine if it may impact any utilities;
  - Attempt to procure any utility maps or historic drawings of subsurface conditions of the site;
  - **Determine the need for utility owner companies to be contacted or to have their representatives on site**;
  - Where mark-outs terminate at the property boundary, consider the use of private utility locating / GPR / geophysical-type services which may be helpful in locating utilities. Use of private utility locating firms, however, does not eliminate the legal requirement for the Excavator firm to submit a request for Public Utility Mark-outs. Also, the information provided by the service may be inaccurate and unable to locate subsurface utilities and structures in urban areas, landfills, urban fill areas and below reinforced slabs, etc. They should not be relied upon as the only means of performing utility clearance;
  - Documented description of the dig site which is included in the projects Health and Safety Plan (HASP) and one call report will be maintained in the field and distributed amongst Roux personnel its contractors and subcontractors; and
  - Documentation of the actual placement of mark outs in the field shall be collected using dated pictures, videos and/or sketches with distance from markings to fixed objects. All documentation shall be maintained within the project file.

3.2 During Intrusive Activities

The PM, field team lead or personnel performing oversight is to:

- Ensure the mark-out remains valid. (In certain states there are limits regarding the duration of time after the mark-out was applied to the ground surface work can be started or interrupted.) Additionally, the mark-outs must be maintained, documented, and in many cases refreshed periodically to be considered valid, this will be accomplished through calls to the one call center.
- Ensure intrusive activities are only performed within the safe boundaries of the mark-out as detailed in the One-Call Report.
- Halt all work if intrusive activities have resulted in discovery of an unmarked utility. Roux personnel shall notify the facility owner/operator and the one call center. All incidents such as this will be reported as per Roux Incident Investigation and Reporting Management Program.
- Halt all work if intrusive activities must take place outside of the safe boundaries of a mark-out and only proceed after new mark-outs are performed.
- Halt the intrusive activities and immediately consult with the PP if an unmarked utility is encountered.
- Completing any subsurface utility clearance incident reports that are necessary.

- If a utility cannot be found as marked Roux personnel shall notify the facility owner/operator directly or through the one call center. Following notification, the excavation may continue, unless otherwise specified in state law.
- Contractors/subcontractors must contact the one-call center to refresh the ticket when the excavation continues past the life of the ticket. Ticket life shall be dictated by state law however at a maximum ticket life shall not exceed 20 working days.

3.3 Stop Work Authority

Each Roux employee has Stop Work Authority which he or she will execute upon determination of any imminent safety hazard, emergency situation, or other potentially dangerous situation, such as hazardous weather conditions. This Stop Work Authority includes subsurface clearance issues such as the adequacy of a mark-out or identification during intrusive operations of an unexpected underground utility. Authorization to proceed with work will be issued by the PM/PP after such action is reviewed and resolved. The PM will initiate and execute all management notifications and contact with emergency facilities and personnel when this action is appropriate.

Appendix A - Definitions

Intrusive Work Activities	All activities such as digging or scraping the surface, including but not limited to, excavation, test pitting or trenching, soil vapor sampling or the installation of soil borings, soil vapor monitoring points and wells, or monitoring wells, and drilling within the basement slab of a recently demolished building.
Mark-out / Stake Out	The process of contracting with a competent and qualified company to confirm the presence or absence of underground utilities and structures. This process will clearly mark-out and delineate utilities that are identified so that intrusive work activities can be performed without causing disturbance or damage to the subsurface utilities and structures. After utility mark-outs are completed the soft digging will be completed prior to intrusive work.
Tolerance Zone	Defined as two feet on either side of the designated centerline of an identified utility, plus half of the diameter or half of the greatest dimension (for elliptical sewers, duct backs and other non-cylindrical utilities) of that utility and two feet from the outside edge of any subsurface structure.
Structure	For the purpose of this program a structure is defined as any underground feature that may a present potential source(s) of energy such as, but not limited to, utility vaults, bunkers, piping, electrical boxes, wires, conduits, culverts, utility lines, underground tanks and ducts.
Soft Digging	The safest way to remove material from unknown obstructions or services is by using tools such as a vactor or air knife, non-mechanical tools, or hand tools. The methods are clean and non-evasive and used for uncovering and exposing buried services, excavating and for providing a quick method of soil removal from sensitive areas.
Verification	Exploratory test-hole dug with hand tools within the Tolerance Zone to expose and verify the location, type, size, direction-of-run and depth of a utility or subsurface structure. Vacuum excavation (soft dig) methods can further facilitate exposure of a subsurface utility and accurately provide its location and identification prior to intrusive work approaching the Tolerance Zone.

Appendix B - Example of Completed One Call Report

Example Completed One-Call Report

New York 811

Send To: C_EMAIL Seq No: 744

Ticket No: 133451007 ROUTINE

Start Date: 12/16/13 Time: 7:00 AM Lead Time: 20

State: NY County: QUEENS Place: QUEENS
Dig Street: 46TH AVE Address:
Nearest Intersecting Street: VERNON BLVD
Second Intersecting Street: 11TH ST

Type of Work: SOIL BORINGS
Type of Equipment: GEOPROBE
Work Being Done For: ROUX

In Street: X On Sidewalk: X Private Property: Other:
On Property Location if Private: Front: Rear: Side:

Location of Work: MARK THE ENTIRE NORTH SIDE OF THE STREET AND SIDEWALK OF: 46TH AVE BETWEEN VERNON BLVD AND 11TH STREET

Remarks:

Nad: Lat: Lon: Zone:
ExCoord NW Lat: 40.7475399 Lon: -73.9534811 SE Lat: 40.7457406 Lon: -73.9493680

Company : ZEBRA ENVIROMENTAL Best Time: 6AM-5PM
Contact Name: DAVID VINES Phone: (516)596-6300
Field Contact: DAVID VINES Phone: (516)596-6300
Caller Address: 30 N PROSPECT AVE Fax Phone: (516)596-4422
LYNBROOK, NY 11563
Email Address: david@zebraenv.com

Additional Operators Notified:
ATTNY01 AT&T CORPORATION (903)753-3145
CEQ CONSOLIDATED EDISON CO. OF N.Y (800)778-9140
MCINY01 MCI (800)289-3427
PANYNJ01 PORT AUTHORITY OF NY & NJ (201)595-4841
VZQ VERIZON COMMUNICATIONS (516)297-1602

Link to Map for C_EMAIL: http://ny.itic.occinc.com/XGMZ-DF2-L23-YAY

Original Call Date: 12/11/13 Time: 1:15 PM Op: webusr
IMPORTANT NOTE: YOU MUST CONTACT ANY OTHER UTILITIES DIRECTLY

Appendix C - Roux Subsurface Utility Clearance Checklist

Roux Subsurface Utility Clearance Checklist ***Date of Revision – 12/3/14***

Work site set-up and work execution

ACTIVITY	Yes	No	N/A	COMMENTS INCLUDING JUSTIFICATION IF RESPONSE IS NO OR NOT APPLICABLE
Daily site safety meeting conducted, SPSAs performed, JSAs reviewed, appropriate work permits obtained.				
HASP is available and reviewed by site workers / visitors.				
Subsurface Utility Clearance Procedure has been reviewed with all site workers.				
Work area secured; traffic control established as needed. Emergency shut-off switch located. Fire extinguishers / other safety equipment available as needed.				
Utility mark-outs (public / private) clear and visible. Provide Excavator's Stake-Out Reference Number / Request Date / Time.				
Tolerance zone work identified.				
Work execution plan reviewed and adhered to (ground disturbance methods, clearance depths, any special utility protection requirements, or any other execution requirements; especially for Tolerance Zone work).				
Verbal endorsement received from Roux PM for any required field deviations to work execution plan.				

Key reminders for execution:

The Subsurface Utility Clearance Protocol should be referenced to determine all requirements while executing subsurface work. The bullet points below are intended as general reminders only and should not be solely relied upon.

- Tolerance zone is defined as two feet plus half of the diameter or half of the greatest dimension (for elliptical sewers, duct banks and other non-cylindrical utilities) of a utility and two feet from the outside of any subsurface structure.
- Install Pre-Clearance exploratory test holes (e.g., hand-dug test holes or vacuum excavation) must be performed for the first five feet below land surface (BLS) at each location prior to conducting mechanized intrusive activities. The size of the pre-clearance exploratory test hole should be at a minimum twice the diameter of any downhole tool or boring device. (Note: Pre-clearance exploratory test holes should be defined in the SOW/proposal provided to the client to prevent project delays and to allow adequate time for PM and PP to evaluate alternative approaches for the project. Alternate approaches will need to be pre-approved by the OM.
- For excavations, all utilities need to be marked and then exposed by hand following the protocols in this program. Pre-clearing for excavations may be performed by the "moat" technique (i.e., soft

digging around the perimeter). In these cases, dig in small lifts (<12" for first five feet) using a dedicated spotter.) For Tolerance Zone work, unless otherwise agreed upon with the Utility Operator, work within the tolerance zone requires verification by means of hand-dug test holes to expose the utility. Once structures have been verified a minimum clearance of two feet must be maintained between the utility and any powered equipment.

Appendix D - Utility Verification/Site Walkthrough Record

Employee Name: _____

Date: _____

Instructions: For each utility suspected at the job site, indicate location on the job site, approximate burial depth, and means of detecting the utility. Leave blank if that utility is not believed to be present.

Utility	Description of Utility Location Identified Onsite	Approx. Depth (bls)	Method / Instrumentation used to determine Utility Location	Utility Owner Response (Date/Time)	Mark Out Indicates (Clear / Conflict)
Electrical Lines					
Gas Lines					
Pipelines					
Steam Lines					
Water Lines					
Sanitary and Stormwater Sewer lines					
Pressured Air-Lines					
Tank Vent Lines					
Fiber Optic Lines					
Underground Storage Tanks					
Phone Lines/ Other					

* bls - below land surface

Site Sketch Showing Utilities:

Other Comments / Findings:

Completed by: _____

Signature: _____ Date: _____

APPENDIX F

Heavy Equipment Exclusion Zone Policy

HEAVY EQUIPMENT EXCLUSION ZONE MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY MANAGER	:	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	:	**01/2019**
REVISION NUMBER	:	**1**

TABLE OF CONTENTS

1. PURPOSE

The purpose of the Exclusion Zone Management Program is to establish the minimum clearance distance that must be maintained between workers and heavy equipment while equipment is in operation (i.e., engaged or moving). The intent is to have no personnel or equipment entering the Exclusion Zone while the equipment is in operation or moving to ensure that Roux and Subcontractor employees are not unnecessarily exposed to the hazards of the equipment.

2. SCOPE AND APPLICABILITY

This Management Program applies to all Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux") employees and their subcontractors who are performing field work and are potentially exposed to heavy equipment. For the purpose of this program, heavy equipment includes, but is not necessarily limited to: excavation equipment, drill rigs, vacuum trucks, forklifts, lull telehandlers, man lifts, bobcats, delivery trucks, etc.

3. PROCEDURES

As specified in the following sections of this Program, an Exclusion Zones must be established and maintained during activities involving the movement/operation of heavy equipment. The Exclusion Zone requirements apply to all personnel on the site but are primarily focused on those personnel who are required to be working in the vicinity of the equipment. The exclusion zone is in effect when heavy equipment is moving or engaged (ex. movement of an arm or bucket of an excavator, rotation of an auger, lifting of a load with a forklift, raising/lowering of a man lift, etc.).

1. The Exclusion Zone must meet the following minimum requirements:
   - A minimum distance of 10 feet from all heavy equipment and loads being moved by the equipment;
   - Greater than the swing/reach radius of any moving part on the heavy equipment (i.e., for large equipment this may mean an exclusion zone distance larger than 20 feet);
   - Greater than the tip-over distance of the heavy equipment; and
   - Greater than the radius of blind spots.

   The size of the Exclusion Zone will need to be determined on a task-specific basis considering the size of the heavy equipment in use and the task being performed. Prior to all heavy equipment operations, the Exclusion Zone(s) distance must be specifically identified in the Job Safety Analysis (JSA).
2. The spotter (or another individual) should be assigned responsibility for enforcing the Exclusion Zone. The spotter should be positioned immediately outside of the Exclusion Zone within a clear line of sight of the equipment operator. The spotter must signal the operator to stop work if anyone or anything has the potential to enter or compromise the Exclusion Zone. The operator should stop work if the spotter is not within his/her line of sight. If multiple pieces of equipment are being used, each piece of equipment must have its own Exclusion Zone and spotter. For large excavation and demolition projects the spotter should be in constant radio contact (not cell phone) with the machine driver.
3. If an individual must enter the Exclusion Zone, the designated Spotter must signal the Equipment Operator to stop the equipment. Once the equipment is no longer moving (ex. movement of an arm of an excavator is STOPPED, lifting of a load with a forklift STOPPED, raising/lowering of a man lift is

STOPPED, etc.), the operator must DISENGAGE THE CONTROLS and STOP and SIGNAL BY "SHOWING HIS HANDS". This signal will indicate that it is safe for the personnel to enter the limits of the Exclusion Zone to perform the required activity. The equipment must remain completely stopped/disengaged until all personnel have exited the limits of the Exclusion Zone and the designated Spotter has signaled by "SHOWING HIS HANDS" to the Equipment Operator that it is safe to resume operations.

4. When entering the limits of the Exclusion Zone, personnel must at a minimum:
   - Establish eye contact with the operator and approach the heavy equipment in a manner that is in direct line of sight to the Equipment Operator;
   - Never walk under any suspended loads or raised booms/arms of the heavy equipment; and
   - Identify a travel path that is free of Slip/Trip/Fall hazards.
5. The Exclusion Zone should be delineated using cones with orange snow fence or solid poles between the cones, barrels, tape or other measures. For work in rights-of-way rigid barriers, such as Jersey barriers or temporary chain link fence should be used. For certain types of wide-spread or moving/mobile equipment operations, such delineation may not be practicable around pieces of equipment or individual work areas. In such instances, it is expected that the entire operation will be within a larger secure work area or that additional means will be utilized to ensure security of the work zone.

All subcontractors who provide heavy equipment operations to field projects must implement a program that meets or exceeds the expectations described above as well as any additional requirements that may be required on a client or site-specific basis.

3.1 Exceptions

It is recognized that certain heavy equipment activities may require personnel to work within the limits of the Exclusion Zone as specified in this program. Such activities may include certain excavation clearance tasks, drill crew activities or construction tasks. However, any such activity must be pre-planned with emphasis on limiting the amount and potential exposure of any activity required within the zone. The critical safety steps to mitigate the hazards associated with working within the Exclusion Zone must be defined in the JSA and potentially other project-specific plans (i.e., critical lift plans, etc.), and approved by the Roux Project Principal and client representative, if required, prior to implementation.

4. TRAINING

Many Roux projects have different requirements that are client-specific or site-specific in nature. It is the responsibility of the Project Principal (or Project Manager if delegated this responsibility by the Project Principal) to ensure that the workers assigned to his/her projects are provided orientation and training with respect to these client and/or site-specific requirements.

APPENDIX G

Incident Investigation and Reporting Management Program

INCIDENT INVESTIGATION AND REPORTING MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY MANAGER	:	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	:	**01/19**
REVISION NUMBER	:	**4**

TABLE OF CONTENTS

APPENDICES

Appendix A – Accident Report and Investigation Form

Appendix B – Near Loss Form

Appendix C – Injury Illness Reporting Flow Chart

1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux") has instituted the following management program for reporting Environmental Health and Safety (EHS) incidents and near losses, investigation and correcting the causes of incidents, tracking incidents and corrective actions taken, and sharing the cause and corrective actions with Roux personnel. These practices and procedures establish a method to track progress and improvements to the company EHS performance.

2. SCOPE AND APPLICABILITY

These procedures apply to all Roux employees. Employees are required to follow these procedures for all incidents involving Roux personnel, or other personnel (e.g., subcontractors) working for Roux, regardless of the specific work activity or work location.

This program is intended, in part, to fulfill the Occupational Safety and Health Administration (OSHA) occupational injury and illness reporting and recording requirements cited in the Code of Federal Regulations (CFR) at 29 CFR 1904.

3. RESPONSIBILITIES

It shall be the responsibility of all Roux employees to report all incidents as soon as possible to the PM (or Administrative Manager for office-related incidents), SHSO, OHSM and OM, regardless of severity. Additionally, the following positions have specific responsibilities for implementing this specific SOP.

3.1 Corporate Health and Safety Manager (CHSM)

- The CHSM has the responsibility of ensuring that a system is in place for reporting, investigation, correction, and communicating of EHS incidents and near losses.
- The CHSM has the overall responsibility of implementing and communicating the contents of this program to Office Health and Safety Managers (OHSMs).
- The CHSM will review all incidents and corrective actions taken. The CHSM will provide a summary of serious incidents to the Board of Directors.
- The CHSM will communicate learnings from incidents and corrective actions taken to all personnel, through quarterly communications.
- The CHSM will periodically review and evaluate the effectiveness of this procedure.

3.2 Office Manager (OM)

- The OM will designate the individual to serve as the OHSM responsibility for ensuring that requirements in this procedure are met.
- The OM will ensure that sufficient resources are allocated to fulfill the requirements of this procedure.
- The OM will conduct final review of all incident reports prepared under this procedure.

3.3 Office Health and Safety Manager (OHSM)

- It is the responsibility of the OHSM to review draft incident reports and assist the OM in finalizing reports of all accidents, illnesses and incidents related to work activity, and to assist the SHSO when necessary.

- The OHSM may not approve a site-specific HASP unless the HASP includes incident reporting procedures and forms.
- The OHSM will suggest and implement corrective actions to prevent the same type of incident from re-occurring.
- The OHSM will keep all incident reports, corrective action taken, and follow-up forms on file. The OHSM will provide copies of all final reports and forms to the CHSM within one week of the incident. If a serious incident occurs, the CHSM will be notified as soon as possible.
- The occurrence of a serious incident will trigger an EHS audit by the OHSM.

3.4 Project Manager (PM)

- It shall be the PM's responsibility to promptly correct any deficiencies that were determined to cause or contribute to the incident investigated.
- If a site-specific HASP is not utilized, the PM must ensure that field personnel have copies of the Roux Accident Reporting and Investigation Forms.
- The PM has the responsibility of ensuring that the SHSO and other field personnel understand the need for timely incident reporting.
- In the event of an incident, the PM will determine the root cause of the incident with the assistance of the SHSO and/or OHSM. The PM should provide input as to corrective preventative measures.

3.5 Site Health and Safety Officer (SHSO)

- The SHSO shall provide the details of the incident to the OHSM, PM and OM. The OM or his delegate will provide additional notifications, such as, in the event of a work-related motor vehicle accident, to include Roux Legal.
- It is the SHSO's responsibility to immediately notify the OHSM and the PM when any incident occurs. Such notification should take place immediately following the completion of any emergency actions required by the HASP.
- The SHSO should provide input as to corrective preventative measures.
- The SHSO must ensure that corrective actions proposed by the OHSM or OM are carried out.

3.6 All Personnel

- All personnel are responsible for reporting and describing the details of any incident in which they are involved to the SHSO and PM. Such notification should take place immediately following the completion of any emergency actions required by the HASP and after the loss and before the scene is disturbed or vehicles moved.

4. PROCEDURE

4.1 Incident Investigation

On receiving a report of incident or near loss occurrence from a Roux employee, the SHSO or OHSM shall immediately investigate the circumstances and shall make appropriate recommendations to prevent recurrence. The Incident Report form can be found in **Appendix A**, and Near Loss form can be found in **Appendix B**. The OHSM may participate in the investigation of more serious accidents and incidents that occur on-site. The Corporate Health and Safety Manager (CHSM) shall also be immediately notified by telephone on occurrence of a serious accident or incident. At the CHSM's discretion, he may also participate in the investigation.

4.2 Incident Report

Details of the incident shall be documented using the Accident Report and Investigation Forms (Appendix A) within twenty-four (24) hours of the incident and shall be distributed to the SHSO, the OHSM, PM, OM and the CHSM. The CHSM will update OSHA Forms 301 and the 300 log when necessary.

Appendix A – Accident Report and Investigation Form

☐ Roux Environmental Engineering and Geology, D.P.C.
☐ Roux Associates, Inc. ☐ Remedial Engineering, P.C.

ACCIDENT REPORT

Brian Hobbs, Corporate Health and Safety Manager
Cell: (631) 807-0193; Office: (631) 630-2416

PART 1: ADMINISTRATIVE INFORMATION

Project #: _____
Project Name: _____
Project Location (street address/city/state)**:**
_____
_____
Client Corporate Name / Contact / Address / Phone #:
_____
_____
_____
_____
_____

Immediate Verbal Notifications Given To:

Corporate Health & Safety	☐Yes	☐No
Office Health & Safety	☐Yes	☐No
Office Manager	☐Yes	☐No
Project Principal	☐Yes	☐No
Project Manager	☐Yes	☐No
Client Contact	☐Yes	☐No

REPORT STATUS (time due):
☐ Initial (24 hr) Date: _____
☐ Final (5-10 days) Date: _____

Accident Report Delivered To:

Corporate Health & Safety	☐Yes	☐No
Office Health & Safety	☐Yes	☐No
Office Manager	☐Yes	☐No
Project Principal	☐Yes	☐No
Project Manager	☐Yes	☐No

REPORT TYPE: ☐ Loss ☐ Near Loss Estimated Costs: $ _____

OSHA CASE # Assigned by Corporate Health & Safety if Applicable:

Corporate Health & Safety Confirmed Final Accident Report
☐Yes ☐No

DATE OF INCIDENT: _____

TIME INCIDENT OCCURRED: _____ ☐AM ☐PM

INCIDENT LOCATION – City, State, and Country (If outside U.S.A.) _____

INCIDENT TYPES: (Select most appropriate if Loss occurred.)
From lists below, please select the option that best categories the incident. When selecting an injury or illness, also indicate the severity level.

☐**INJURY** ☐**ILLNESS**

----------**Severity Level**----------

☐Fatality ☐First Aid ☐Medical
☐Restricted Work ☐Lost Time Treatment

OTHER INCIDENT TYPES

☐Spill / Release
Material involved: _____
Quantity (U.S. Gallons): _____

☐Misdirected Waste ☐Consent Order ☐NOV
☐Property Damage ☐Exceedance
☐Motor Vehicle ☐Fine / Penalty

ACTIVITY TYPE (Check most appropriate one.)

☐CAMP ☐Construction ☐Drilling ☐Driving ☐Excavation / Trenching
☐Gauging ☐O&M ☐Other Soil Work (e.g. Compaction) ☐Sampling ☐Site Walk/Inspection
☐Subsurface Clearance ☐Trucking ☐Waste Mgmt. ☐Work Area Prep. ☐Other

INJURY TYPE (Check all applicable.)

☐Abrasion ☐Amputation ☐Burn ☐Cold/Heat Stress ☐Inflammation ☐Laceration
☐Occupational Illness ☐Puncture ☐Rash ☐Repetitive Motion ☐Sprain/Strain ☐Other_____

BODY PART AFFECTED (Check all applicable.)

☐Respiratory ☐Neck ☐Chest ☐Abdomen ☐Groin ☐Back
☐Shoulder ☐Arm ☐Wrist ☐Hand/Fingers ☐Eye ☐Head
☐Face ☐Leg ☐Knee ☐Ankle ☐Foot/Toes ☐Other_____

I. PERSON(S) DIRECTLY / INDIRECTLY INVOLVED IN INCIDENT (Attach additional information as necessary/applicable.)

Name/Phone # of Each Person Directly/Indirectly Involved in Incident:	Designate: Roux/Remedial Employee Roux/Remedial Subcontractor Client Employee Client Contractor Third Party	As applicable, Current Occupation; Yrs in Current Occupation; Current Position; and Yrs in Current Position:	As applicable, Employer Name; Address; and Phone #:	As applicable, Supervisor Name; and Phone #:
1)				
2)				

II. PERSONS INJURED IN INCIDENT (Attach additional information as necessary/applicable.)

Name/Phone # of Each Person Injured in Incident:	Designate: Roux/Remedial Employee Roux/Remedial Subcontractor Client Employee Client Contractor Third Party	As applicable, Current Occupation; Yrs in Current Occupation; Current Position; and Yrs in Current Position:	As applicable, Employer Name; Address; and Phone #:	As applicable, Supervisor Name; and Phone #:	Description of Injury:
1)					
2)					

III. PROPERTY DAMAGED IN INCIDENT (Attach additional information as necessary/applicable.)

Property Damaged:	Property Location:	Owner Name, Address & Phone #:	Description of Damage:	Estimated Cost:
1)				
2)				$

IV. WITNESSES TO INCIDENT (Attach additional information as necessary/applicable.)

Witness Name:	Address:	Phone #:
1)		
2)		

PART 2: WHAT HAPPENED AND INCIDENT DETAILS

PROVIDE FACTUAL DESCRIPTION OF INCIDENT (e.g., describe loss/near loss, injury, response / treatment).

I. AUTHORITIES/GOVERNMENTAL AGENCIES NOTIFIED (Attach additional information as necessary/applicable.)

Authority/Agency Notified:	Name/Phone #/Fax # of Person Notified:	Address of Person Notified:	Date & Time of Notification:	Exact Information Reported/Provided:

II. PUBLIC RESPONSES TO INCIDENT (if applicable)

Response/Inquiry By: (check one)	Entity Name:	Name/Phone # of Respondent/ Inquirer:	Address of Entity/Person:	Date & Time of Response/Inquiry:
☐Newspaper ☐Television ☐Community Group ☐Neighbors ☐Other _____				

Describe Response/Inquiry:

Roux/Remedial Response:

(Check all that apply.) (Attach photos, drawings, etc. to help illustrate the incident.)
ATTACHED INFORMATION: ☐Photo ☐Sketches ☐Vehicle Acord Form ☐Police Report ☐Other

Name(s) of person(s) who prepared Initial and Final Report:	**Title(s):**	**Phone number(s):**

PART 3: INVESTIGATION TEAM ANALYSIS

Date Investigation Started (MM/DD/YYYY):

Factors, Root Causes, and Solution (FRCS): Complete FRCS form and answer all 7 factor questions. If answering NO to Factors 1 – 4 identify root cause(s) and explain why QIs) occurred. If answering YES to Factors 5 – 7 circle the root cause(s). Transfer the solutions guidance that addresses each root cause from the FRCS form to this form. Attach your completed FRCS Worksheet. If Factors 1-7 do not apply to the incident, write "External Cause" in the Factor column below and leave the remaining fields blank.

DESCRIPTION OF UNDESIRABLE BEHAVIOR/CONDITION

1.

2.

FACTOR(S) AND SOLUTION(S): HOW TO REDUCE POSSIBILITY OF INCIDENT RECURRING
Selection of factors and solutions reflects the analysis of investigation team and is not meant to be a legally binding conclusion as to the Root Cause and/or solution.

CAUSAL FACTOR/ BEHAVIOR/ CONDITION	ROOT CAUSE	SOLUTION(S) [Must Match Root Cause(s)]	PERSON RESPONSIBLE	AGREED DUE DATE	ACTUAL COMPLETION DATE

INVESTIGATION TEAM:

PRINT NAME	JOB POSITION	DATE	SIGNATURE

QUALITY REVIEW Correct root cause(s) identified? Do root cause(s) and solution(s) match? Are solution(s) feasible / maintainable?

Name: **Job Title:**

PART 4: Date Solutions were Implemented & Validated (Were Solutions Effective?)

Date	Solution	Verifier / Validator Name and Job Title	**Details** (of I & V performed)

Appendix B – Near Loss Form

HEALTH & SAFETY NEAR LOSS
ROUX REPORT FORM

☐ **Roux Environmental Engineering and Geology, D.P.C.**
☐ **Roux Associates, Inc.** ☐ **Remedial Engineering, P.C.**

(Check applicable company name)

PART 1: ADMINISTRATIVE INFORMATION

Office: ☐ New York ☐ Massachusetts ☐ New Jersey ☐ Illinois ☐ CA - Los Angeles ☐ CA - Oakland

Project Manager:	**Project Principal:**
Project Name:	**Project Location:**

PART 2: NEAR LOSS INCIDENT DETAILS

Date\Time Occurred (MM/DD/YYYY HH:MM)**:**	**Date\Time Submitted** (MM/DD/YYYY HH:MM)**:**

NEAR LOSS INCIDENT TYPE - What could have happened? - Select all that apply (1-7)

1. ☐ Fire / Explosion
2. ☐ Injury / Illness
3. ☐ Security (e.g., theft, trespassing, vandalism)
4. ☐ Environmental (Spill, permit exceedance, etc.)
5. ☐ Transportation of personnel (vehicle accident)
6. ☐ Property/Equipment Damage
7. ☐ Business Interruption

Event Leading to Potential Injury/Illness:

Job Task*:	**Equipment Involved*:**

WHAT HAPPENED? Do not include individuals' names. Ensure photos, sketches, etc. are not personally identifiable unless written consent has been obtained.

Summary (1-2 sentences. Provide brief description of the incident. Provide facts only, no speculation or opinion)**:**

Incident Details (Brief factual details of what, where, when; include photos, sketches, etc. as attachments)**:**

Immediate Corrective Actions Taken:

SERIOUS INJURY OR FATALITY (SIF): IF AN ACTUAL SIF, USE EXISTING ROUX ACCIDENT REPORTING FORM

Could this have resulted in a SIF? ☐ **Yes** ☐ **No**

A potential SIF is defined as likely to have caused an injury resulting in significant physical body damage with probable long term and/or life altering complications.

INCIDENT INVOLVED:

Roux Employee: ☐ **Yes** ☐ **No** **Subcontractor Company Name:**

INVESTIGATION TEAM

NAME	JOB TITLE	NAME	JOB TITLE

PART 3: INCIDENT INVESTIGATION FINDINGS AND REPORT QUALITY REVIEW

Date Investigation Started (mm/dd/yyyy):

Factors, Root Causes, and Solution (FRCS): Complete FRCS form and answer all 7 factor questions. If answering NO to Factors 1 – 4 identify root cause(s) and explain why QIs) occurred. If answering YES to Factors 5 – 7 circle the root cause(s). Transfer the solutions guidance that addresses each root cause from the FRCS form to this form. Attach your completed FRCS Worksheet. If Factors 1-7 do not apply to the incident, write "External Cause" in the Factor column below and leave the remaining fields blank. Do not include individuals' names.

DESCRIPTION OF UNDESIRABLE BEHAVIOR/CONDITION

1.

2.

FACTOR(S) AND SOLUTION(S): HOW TO REDUCE POSSIBILITY OF INCIDENT RECURRING
Selection of factors and solutions reflects the analysis of investigation team and is not meant to be a legally binding conclusion as to the Root Cause and/or solution.

Behavior / Condition	Root Cause	Solution(s) (Must Match Root Cause)	Person Responsible for Completion	Completion Target Date	Completion Actual Date

QUALITY REVIEW Correct root cause(s) identified? Do root cause(s) and solution(s) match? Are solution(s) feasible / maintainable?

Name: **Job Title:**

PART 4: Date Solutions were Implemented & Validated (Were Solutions Effective?)

Date	Solution	Verifier / Validator Name and Job Title	**Details** (of I & V performed)

***JOB TASK - Select the most appropriate one** (primary job associated with incident-related work activity, avoid "Other" if possible)

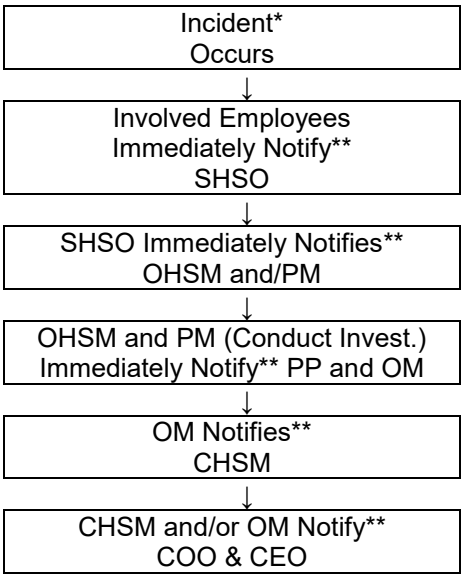
1. CAMP
2. Construction
3. Drilling
4. Driving
5. Excavation/Trenching
6. Gauging
7. O&M
8. Other Soil Work (e.g. Compaction)
9. Sampling
10. Site Walk/ Inspection
11. Subsurface Clearance
12. Trucking
13. Waste Management
14. Work Area Preparation
15. Other

***EQUIPMENT INVOLVED THAT CONTRIBUTED TO H&S NEAR LOSS - Select all that apply**

1. Air Stripper
2. API Separator
3. Automobile
4. Boom Material
5. Bulldozer
6. Cable
7. Carbon Drum / Vessel
8. Chain Block
9. Compressor, Air
10. Control Panel (local)
11. Crane (mobile)
12. Drill Rig
13. Drilling Equipment, Vacuum
14. Drum, Vertical
15. Dump Truck
16. Electric Heater
17. Electrical Power Supply
18. Engine, Combustion
19. Equipment Safety Grounding
20. Excavator / Power Shovel
21. Exclusion Zone Equipment
22 Fan / Blower
23 Fencing
24 Filter
25. Fire Extinguisher
26. Forklift
27. Front End Loader
28. Grader
29. Hammer
30. Knife
31. Non-Powered Equipment
32. Powered Equipment
33. Drill
34. Grinder
35. Hydraulic Torque Wrench
36. Powered Saw
37. Impact Wrench
38. Saw
39. Screwdriver
40. Shears
41. Shovel
42. Snip
43. Wrench
44. Hoist
45, Hook/Clamp/Buckle, etc.
46. Jack
47. Ladder, Extension
48. Ladder, Platform
49. Ladder, Step
50. Lock Out / Tag Out
51. Maintenance Tool, General
52. Manifold
53, Manlift/Basket/Cherry Picker
54. Motor, Electric
55. Oxidizer
56. Pallet
57. Piping
58. Piping, Hose
59. Piping, Injection/Mixing Point
60. Hydrojet
61. Centrifugal Pump
62. Diaphragm Pump
63. Reciprocating Pump
64. Regenerative Pump
65. Rotary Pump
66. Transfer Pump
67. Submersible Pump
68. Face Shield
69. Fall Protection
70. Gloves
71. Hard Hat / Helmet
72. Hearing Protection
73. Respiratory PPE (Chemical)
74. Respiratory PPE (Particulate)
75. Safety Glasses
76. Safety Goggles
77. Safety Shoes / Boots
78. Safety Vest / Clothing
79. Rope
80. Bailer
81. Geoprobe
82. Hand Auger
83. PID
84. Multi-Gas Meter
85. Sample Container
86. Split-Spoon Sampler
87. Sling
88. Snow Blower
89. Snow Plow
90. Space Heater
91. Air Sparging System
92. Carbon Treatment Sys
93. Chemical Oxidation S
94. Dual Phase Product Recovery System
95. Groundwater Pump and Treat System
96. POET System
97. Shed or Trailer
98. Vapor Extraction System
99. Vapor-Phase Treatment System
100. Other System, Type:___
101. Surge Tank
102. Underground Tank
103. Telemetry System
104. Testing Devices
105. Tractor Trailer
106. Truck, Flatbed
107. Truck, Pickup
108. Truck, Tank Truck
109. Truck, Vacuum
110. Safety Valve
111. Block Valve
112. Extraction Well
113. Monitoring Well
114. Recovery Well
115. Winch
116. Wire Rope
117. No Equipment Involved
118. MPT – Traffic Control Devices
118. Not in List (describe):___

Appendix C – Injury Illness Reporting Flow Chart

Health & Safety Near/Loss – Loss (Incident)*
Notification Flow Chart



* Incident – any work or site-related occurrence that resulted in, or could potentially have resulted in, the need for medical care or in property damage (i.e., all injuries or illnesses, exposure to toxic materials or any other significant occurrence resulting in property damage or in a "near loss")

** Verbal Notification

Initial Incident Report (written) to SHSO, OHSM, OM and CHSM within 24 hours
Follow-up Report within one week.

APPENDIX I

Site-Specific Community Air Monitoring Plan

Site-Specific Community Air Monitoring Plan

580 Gerard Former Post Office Vehicle Repair Shop Site
580-610 Gerard Avenue
Bronx, New York
NYSDEC BCP Site No. C203142

October 8, 2021

Prepared for:

SB Gerard Avenue LLC
570 Lexington Avenue, 43rd Floor
New York, New York 10022

Prepared by:

Roux Environmental Engineering and Geology, D.P.C.
209 Shafter Street
Islandia, New York 11749

3523.0001Y110/CAMP

Table of Contents

Table

Appendix

1. Introduction

Roux Environmental Engineering and Geology, D.P.C. (Roux), on behalf of SB Gerard Avenue LLC (referred to herein as the Volunteer), have developed a project specific Community Air Monitoring Plan (CAMP) to implement real time monitoring at the 580 Gerard Former Post Office Vehicle Repair Site located at 580-610 Gerard Avenue, Bronx, New York (Site) during remedial construction activities.

The monitoring program will be implemented at all times during which earth disturbance activities are occurring. The CAMP is designed to provide a measure of protection for the downwind community and on-Site workers not directly involved with the subject work activities from potential airborne contaminant releases as a direct result of remedial and construction activities. This plan is consistent with the New York State Department of Health's (NYSDOH) Generic Community Air Monitoring Plan guidance document.

The specifics of the CAMP are presented in the following four (4) sections:

- 1.1 VOC Monitoring Approach
- 1.2 Particulate Monitoring Approach
- 1.3 Meteorological Monitoring Approach
- 1.4 Available Suppression Techniques

1.1 VOC Monitoring Approach

Total VOC concentrations in air will be monitored continuously at a location downwind of the excavation activities during all ground intrusive activities. An upwind monitoring station will be set up adjacent to where the excavation is occurring. The VOC monitoring equipment will be located at temporary monitoring stations established daily based on Site logistics and weather conditions. The monitoring work will be conducted using MiniRAE 3000 (or equivalent) portable VOC monitors, or similar type monitors, for all VOC monitoring. The equipment will be calibrated at least once daily using isobutylene as the calibration gas. One (1) upwind and one (1) downwind monitor will be deployed each day. Each monitoring unit is equipped with an audible alarm to indicate exceedance of the action levels (as defined below and summarized in Table 1).

The equipment is capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total VOCs at the downwind perimeter of the Site exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If the ambient air concentration of total VOCs at the downwind perimeter of the Site persists at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of VOCs identified, suppression techniques employed to abate emissions, and monitoring continued. After these steps, work activities can resume if the total organic vapor level at the Site perimeter is below 5 ppm over the background concentration for the 15-minute average. If levels are in excess of 25 ppm above background, identified contributing ground-intrusive activities will be halted and vapor suppression techniques will be evaluated and modified until monitoring indicates VOC levels at the Site perimeter are below 5 ppm over background. Once VOC levels are below 5 ppm at the Site perimeter, work will resume with continued monitoring.
- All 15-minute readings will be recorded and available for State Regulator (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will be recorded. If

an exceedance of the action level occurs, an Action Limit Report (ALR) will be completed, identifying the monitoring device location, the measured VOC level, the activity causing the exceedance, meteorological conditions, and the corrective actions taken, as provided in Appendix A. Additionally, the NYSDEC and NYSDOH will be notified within 24 hours of the VOC ALR generation. Daily monitoring equipment locations and meteorological conditions will also be documented on the daily CAMP Monitoring Location Plan. All documentation will be kept on file at the Site.

1.2 Particulate Monitoring, Response Levels and Actions

Particulate concentrations will be monitored continuously at temporary particulate monitoring stations set up at the sidewalk at upwind and downwind locations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action levels (as defined below and summarized in Table 1). Monitoring equipment will be MIE Data Ram monitors or equivalent. A minimum of one (1) upwind and one (1) downwind monitor will be deployed each day, equipped with an omni-directional sampling inlet and a PM-10 sample head. The data logging averaging period will be set to 15-minutes with time and date stamp recording. Alarm averaging will be set at 90 micrograms per cubic meter ($\mu g/m^3$) per 15-minute period. This setting will allow proactive evaluation of Site conditions prior to reaching Action Levels of 100 $\mu g/m^3$ above background. The equipment will be outfitted with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. The monitoring will be used to compare values to the following:

- If the downwind PM-10 particulate level is 100 $\mu g/m^3$ greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the Site, 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 $\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the Site.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 $\mu g/m^3$ above the upwind level, work must be stopped, a re-evaluation of activities initiated, and dust suppression techniques modified. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.

All 15-minute readings will be recorded and available for State Regulator (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will be recorded. If an exceedance of the action level occurs, an ALR will be completed, identifying the monitoring device location, the measured particulate concentration, the activity causing the exceedance, meteorological conditions, and the corrective actions taken, as provided in Appendix A. Daily monitoring equipment locations will also be documented on the daily CAMP Monitoring Location Plan. All documentation will be kept on file at the Site.

1.3 Meteorological Monitoring

Wind speed (estimated) and wind direction will be approximated based on field observations of on-Site personnel. Meteorological data consisting of temperature, barometric pressure, and relative humidity will be recorded in the field book based upon publically available information from local weather stations.

1.4 Available Suppression Techniques

Odor Control

Due to the nature of the project, with excavation occurring, the potential for generation of nuisance odors and the need for odor control may be necessary. If nuisance odors are identified, 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 all other complaints about the project.

All necessary means will be employed to prevent on- and off-Site nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (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) use of chemical odorants in spray or misting systems; and (e) use of staff to monitor odors in surrounding neighborhoods.

Dust Control

Due to the nature of the project, the potential for generation of nuisance dust and the need for dust control may be necessary. Dust suppression will be achieved through the use of water for wetting excavation areas, if required. Water will be available on-site at suitable supply and pressure for use in dust control.

1.5 Reporting

All recorded monitoring data will be downloaded, and field logged periodically, including action limit reports (if any) and daily CAMP monitoring location plans. All records will be maintained onsite and available for NYSDEC/NYSDOH review. A summary of CAMP findings, including excursions, will be provided in the Daily and Monthly Reports. All CAMP monitoring records will be included in the overall Final Engineering Report that will be submitted to the NYSDEC and NYSDOH and will include all of the CAMP data collected, daily monitoring station location maps, and copies of the ALRs (if any). If an ALR is generated due to VOC or particulate exceedances, the NYSDEC and NYSDOH will be notified within 24 hours of the exceedance.

TABLE

1. Action Limit Summary for VOCs and Particulates

Table 1. Action Limit Summary for VOCs and Particulates, 580 Gerard Former Post Office Vehicle Repair Shop Site, Bronx

Contaminant	Downwind Action Levels*	Action/Response
Volatile Organic Compounds (VOCs) (Monitoring Via Photoionization Detector and Odor Observation)	< 5 ppm	1. Resume work with continuing monitoring.
	5 ppm < level < 25 ppm	1. Work activities must be temporarily halted, source vapors must be identified, suppression techniques employed to abate emissions and monitoring continued. 2. After these steps, if VOC levels (200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or structure, whichever is less) is below 5 ppm over background, resume work.
	> 25 ppm	1. Identified contributing ground intrusive activities must be halted and vapor suppression techniques must be evaluated and modified until monitoring indicates VOC levels below the action level. 2. After these steps, if VOC levels (half the distance to the nearest potential receptor or structure) are below 5 ppm over background, resume work.
Particulates (Monitoring Via Particulate Meter and Observation)	< 100 ug/m^3	1. If dust is observed leaving the work area, then dust control techniques must be implemented or additional controls used.
	100 ug/m3 < level < 150 ug/m^3	1. Employ dust suppression techniques. 2. Work may continue with dust suppression techniques provided that downwind PM-10 particulate concentration do not exceed 150 ug/m^3 above the upwind level and provided that no visible dust is migrating from the work area.
	> 150 ug/m^3	1. STOP work 2. Re-evaluate activities, modify dust suppression techniques. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

* Instantaneous readings above background. Particulate readings are based on the respirable (PM-10) fraction. Background readings are taken at upwind locations relative to Work Areas or Exclusion Zones.

APPENDIX A

Action Limit Report

ACTION LIMIT REPORT

Project Location: 580 Gerard Former Post Office Vehicle Repair Shop Site
580-600 Gerard Avenue, Bronx, New York

Date: _____ Time: _____

Name: _____

Contaminant: PM-10: _____ VOC: _____

Wind Speed: _____ Wind Direction: _____

Temperature: _____ Barometric Pressure: _____

DOWNWIND DATA

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

UPWIND DATA

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

BACKGROUND CORRECTED LEVELS

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

ACTIVITY DESCRIPTION

CORRECTIVE ACTION TAKEN

APPENDIX J

Resumes of Key Personnel

ROUX

PROFESSIONAL PROFILE

Robert Kovacs, LSRP, P.G.
Principal Scientist

TECHNICAL SPECIALTIES

Design, implementation and management of Environmental Site Assessments, Remedial Investigations, and Remedial Actions at Brownfield Redevelopment sites and Industrial sites; Development of regulatory strategy and regulatory agency negotiations; Characterization, Decontamination and Decommissioning of Industrial Manufacturing Facilities.

EXPERIENCE SUMMARY

Twenty years of experience: Principal, Senior, Project, Staff and Staff Assistant Environmental Scientist at Roux Associates, Inc., Islandia, New York; Field Manager/Staff Scientist at Long Island Analytical Laboratories, Holbrook, New York.

CREDENTIALS AND TRAINING

B.A., Biological Sciences, University of Delaware, Newark, Delaware, 1999

Licensed Site Remediation Professional, New Jersey (License No. 627589)

New York State Professional Geologist (License No. 000437)

OSHA 40-Hour Health and Safety Course (29 CFR 1910.120)

OSHA 8-Hour Health and Safety Refresher Course (29 CFR 1910.120)

NJDEP UST Certification Program-Subsurface Evaluator (License No. 239024)

PUBLICATIONS

Significant Acceleration of Time Frame to Closure via Transition from Long-Term Biological Treatment to ZVI/EVO Injection, Kovacs, R., Senh, S., Silverstein, W., Moss, D., Kelley, R., Proceedings of the Tenth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Abstract and Poster, 2016.

KEY PROJECTS

- *Amtrak Sunnyside Yard State Superfund Site* – Project Principal for multiple projects to support investigation and remediation activities at this State Superfund site. Mr. Kovacs was responsible for overseeing activates in all six Operable Units (OUs), including unsaturated and saturated soil, groundwater, separate-phase hydrocarbon, soil vapor and on-site sewer system. His responsibilities on these projects included characterizing subsurface conditions, including soil (collected hundreds of soil samples to characterize the 130+ acre active railyard), as well as characterizing a 250,000-gallon PCB-contaminated separate-phase hydrocarbon plume. Additionally, he was responsible for overseeing the design and implementation of remediation activities, including soil excavation and offsite disposal, removal and abandonment of USTs ranging in sizes up to 17,000 gallons, demolition of contaminated buildings and infrastructure, and installation and operation of a dual phase high vacuum extraction (DPVE) system to recover PCB-contaminated separate-phase hydrocarbon through a network of over 40 recovery wells. Due to the highly volatile nature of the separate-phase hydrocarbon and the urban setting of this site, extensive emissions and odor engineering controls were used when excavating and managing soil and product. Additionally, extensive Community Air Monitoring was completed during all phases of work. He was also responsible for managing environmental activities associated with construction of the new, state of the art Next Generation High Speed Rail facilities to support Amtrak's Acela train service, and construction associated with MTA's massive East Side Access project on and beneath Sunnyside Yard.

- *Pharmaceutical Manufacturing Facility – Brooklyn, NY* – Project Manager/Project Principal for environmental work associated with the seven-block former manufacturing plant. This Site included a former 700,000 square foot manufacturing plant, as well as several other former industrial facilities with operations starting as far back as the 1850's. Responsibilities include the design and completion of multiple phases of subsurface investigations to characterize soil and groundwater quality, as well as soil vapor. Contaminants included hydrocarbons, benzene, PCBs, and heavy metals, including lead, mercury, and arsenic. Work included development and preparation of investigation and remediation work plans, coordination and management of field investigations, including the installation of shallow and deep monitoring wells and soil borings using sonic drilling methods, completion of a geophysical survey, collection of groundwater samples, and management of remediation activities. Remediation activities included soil excavation, UST removals, and the installation of a soil vapor extraction and air sparging system. Work was completed under several different regulatory agencies, including NYSDEC and NYCOER. Also provided presentations to school authorities, including the NYC DOE, to communicate the progress of the project and to educate administrators regarding the Site's environmental issues.

- *Chlorinated Solvent Remediation – Parsippany-Troy Hills, NJ*– Project Principal for the Remedial Investigation and Remedial Action implementation associated with a former dry cleaner release located in Parsippany-Troy

209 Shafter Street | Islandia, NY 11749
Main: (631) 232-2600 | Direct: (631) 630-2320
E-mail: rkovacs@rouxinc.com | Website: http://www.rouxinc.com

Hills, New Jersey. We were retained by one of the largest real estate developers in the United States to complete this project. Soil, groundwater and subsurface vapor were impacted with chlorinated VOCs as a result of the former dry cleaner operations. Responsibilities included the design and management of a Supplemental RI that included the installation of soil borings, monitoring wells and the completion of groundwater vertical profiling. Additionally, Mr. Kovacs was responsible for the design, implementation and management of an extensive groundwater remediation injection program in which approximately 200,000 pounds of Zero-Valent Iron (ZVI) and 2,500 gallons of Emulsified Vegetable Oil (EVO) were injected into the subsurface using pneumatic fracturing. Initial post-treatment results show over 95 percent reduction in concentrations of chlorinated VOCs in groundwater. Furthermore, he was responsible for the design, installation and operation of a SVE system to address impacted vadose zone soil.

- *Chlorinated Solvent Release – Bernardsville, NJ* – Project Principal for the investigation of an extensive chlorinated solvent plume emanating from a former dry cleaner site. Contamination from this site has migrated far off site in groundwater, and has potentially impacted nearby surface water. Work includes installation of soil borings and monitoring wells to characterize contamination in soil, perched water, groundwater in the deep unconsolidated aquifer zone, as well as groundwater in the weathered bedrock matrix and bedrock matrix. Further, contamination from the Site is co-mingled with contamination from other solvent release sites, complicating NJDEP negotiations and investigation/remedial requirements. Mr. Kovacs serves as the LSRP of record for this project.

- *UST Spill Site – Brooklyn, NY* – Project Principal for the investigation of a Spill in Williamsburg, Brooklyn, New York. M. Kovacs lead the project team in successfully demonstrating to NYSDEC's Spills Group that impacts to a deep groundwater zone beneath the client's site were a result of offsite contamination migrating onsite from a nearby active gasoline station (not a result of the client's former industrial operations). Impacts included the presence of several feet of free-product in a deep groundwater zone. Furthermore, he was successful in getting the client's Spill Case closed, saving the client from additional investigation activities, and what will likely be a multi-million-dollar remediation to address free-product beneath a semi- confining clay zone.

- *Waterfront Redevelopment – Greenpoint, NY* – Project Principal for a large project located on the waterfront in Greenpoint, New York. This 110,000-square foot site will be redeveloped into a multiple 40-story towers. This project has included the completion of a Phase I and Phase II ESA, as well as negotiation with NYSDEC regarding entry to the NYSDEC BCP. As part of this work, soil borings, monitoring wells, piezometers, and soil vapor monitoring points were installed, and hydrogeologic cross sections were prepared. Additionally, as part of this project, the tidal influence of the East River on site groundwater was studied, and a benthic sediment investigation was conducted in the East River.

- *Former Vehicle Maintenance Facility – Parlin, NJ* – Project Manager for the removal of (2) waste oil USTs, a subsurface oil water separator, piping, and remediation of associated petroleum contaminated soil at a former vehicle maintenance facility in Parlin, New Jersey. Roux was retained by one of the largest real estate developers in the United States to complete this project. This remediation was completed to allow for a new, national tenant to occupy this retail space. As part of this this work it was determined that a historic release occurred from the OWS, triggering a RI for petroleum-related VOCs and chlorinated VOCs in soil. Mr. Kovacs was also responsible for the development and implementation of the Remedial Action for the Site, which included excavation and off-site soil disposal. SESOIL modeling was also utilized to demonstrate groundwater (approximately 100 feet deep) was not impacted by the shallow soil contamination. As part of this project, he took a lead role in preparing the SI Report, RI Report, RAW, RAR, Receptor Evaluation, and the Unrestricted Use RAO.

- *NJ Transit Active Bus Facility* – Project Principal for the completion of a RI at an active bus garage located in Fairview, New Jersey for a major transit agency. Responsibilities included the delineation of a free-product plume, characterization of soil and groundwater quality, report preparation, and correspondence with the NJDEP. Moreover, Mr. Kovacs was responsible for implementing free-product Interim Remedial Measure efforts. Currently,

209 Shafter Street | Islandia, NY 11749
Main: (631) 232-2600 | Direct: (631) 630-2320
E-mail: rkovacs@rouxinc.com | Website: http://www.rouxinc.com

he is finalizing the RI report for the Site, and managing the Remedial Action design, and supporting the LSRP in meeting all NJDEP administrative requirements.

- *Residential Hi-Rise Development – Manhattan, NY* – Project Principal for a redevelopment site in mid-town Manhattan working for a private developer who is building a mixed-use retail/commercial tower. Work included a Phase I ESA and Phase II ESA. As part of the Phase II shallow bedrock was identified in portions of the site, and an LNAPL plume was identified in the overburden soils. Responsibilities included bedrock evaluation, LNAPL recovery utilizing multiple different techniques. Responsibilities also included construction support, health and safety support, management of all soil excavated and transported off site, and the design of a Sub-Slab Depressurization System (SSDS) to mitigate vapors in the vadose zone beneath the new building structure that were emanating from groundwater.
- *Ship Dry Dock Facility – Hoboken, NJ* – Project Manager for the completion of a Preliminary Assessment and Site Investigation (PA/SI) at an active ship dry dock facility in Hoboken, New Jersey. Responsible for the coordination and management of field investigation activities, which included soil, groundwater, and sediment sampling, as well as the preparation of a PA and SI report. This work was completed on behalf of a potential buyer of the property who planned to redevelop this site into a New York City ferry terminal.
- *BICC Cables – Yonkers, NY* – Project Manager for the investigation and remediation of the interior and subsurface soils of a former cable manufacturing facility located in Yonkers, New York to be redeveloped into a movie studio. Responsibilities included the completion of several large-scale investigations, including the collection of wipe, soil and building material samples to characterize PCB and lead impacts at this 200,000+ square foot facility Additional tasks included oversight of the remediation of interior surfaces using several different methods for the removal of PCBs and lead, and remediation of a sub-surface drainage trench and process water system. Further work included the preparation of a Remedial Investigation report and a Feasibility Study report for submittal to the NYSDEC.
- *Amtrak Electrical Substation – Rahway, NJ* – Project Manager for the RI and RA design and implementation at an active electrical substation in Rahway, New Jersey for a national passenger railroad agency. Responsibilities included completing an RI to delineate PCBs in soil, and the management of free-product recovery programs. Further, Mr. Kovacs was responsible for managing the RA at the Site, which included soil excavation and offsite disposal, and free-product recovery. As part of this project, he supported the Site LSRP and took a lead role in preparing the Supplemental RI Report, RAW, RAR, Receptor Evaluation, and the Unrestricted Use RAO. Additionally, he assisted the LSRP in satisfying all NJDEP administrative requirements, including preparation of forms, public notifications, and submittal of fees.
- *Echo Bay Redevelopment – New Rochelle, NY* – Project Manager for the completion of Phase I and Phase II Environmental Site Assessment activities associated with a proposed mixed-use redevelopment located in Westchester, New York. Work included management of subsurface investigation activities to characterize soil conditions, and working closely with client's architects and construction contractors to integrate the proposed site remediation into the project development plan (including evaluating multiple potential disposal scenarios). Site contaminants included hydrocarbons (including free-product plume from former USTs), and historic fill constituents.
- *Former Dry Cleaner – Ramsey, NJ* – Project manager for the SI, RI, and vapor intrusion investigation at a former dry cleaner in Ramsey, New Jersey. Responsibilities included managing and coordinating field investigations, preparing remedial cost estimates for redevelopment, and preparation of reports and satisfying NJDEP Administration requirements. This work is being done to support redevelopment of the Site for a large, national fitness center tenant.
- *Former Service Station* – Project Manager for the implementation of a groundwater remediation injection program to address petroleum contamination at a former service station located in Paterson, New Jersey for a major transit agency. Responsibilities included implementation of a PA and SI to further investigate chlorinated VOCs at this Site. As part of this project, Mr. Kovacs took a lead role in preparing reports and

209 Shafter Street | Islandia, NY 11749
Main: (631) 232-2600 | Direct: (631) 630-2320
E-mail: rkovacs@rouxinc.com | Website: http://www.rouxinc.com

the Permit-by-Rule Request, as well as assisting in satisfying all NJDEP administrative requirements.

- *NJ Transit Active Railyard* – Project manager for the investigation of a diesel release at an active railyard in. Roxbury Township, New Jersey. This release was caused by a faulty underground pipe located in the locomotive fueling area. The diesel release resulted in a free-product plume, groundwater impacts, and impacts to a subsurface drainage culvert and a nearby lake. Responsibilities included the development and coordination of a field investigation program, coordination of routine gauging and free-product recovery events, correspondence with NJDEP, and preparation of a baseline ecological evaluation. Additionally, Mr. Kovacs supported the Site LSRP in meeting all NJDEP administrative requirements.

FACILITY DEMOLITION/DECOMMISSIONING

- *Former Pharmaceutical Manufacturing Facility Decommissioning – Brooklyn, NY* – Project Manager for the interior decontamination and decommissioning of a 700,000+ square foot former manufacturing facility located in Brooklyn, New York to allow for redevelopment of the building for commercial, retail, and light industrial use, and use as a movie studio, and for local food businesses. This redevelopment has earned significant positive press, as it is considered a highly beneficial reuse for the community. This project included the development of decontamination and decommissioning work plan, technical support of bidding process, and full time onsite engineering support of the entire project.

  Decontamination and decommissioning activities included removal/cleaning of hundreds of air handling units and dust collector units impacted with manufacturing dusts and residues, as well as thousands of feet of intricate vacuum, ventilation and dust collection lines. This project also included the removal of concrete impacted with metals, PCBs, and/or VOCs, selective interior demolition, and decontamination of former laboratory, milling, compounding, blending, and packaging areas, as well as asbestos abatement. At the conclusion of this project, a Final Report was prepared, documenting in detail the extensive work completed and that the work plan objectives were achieved.

- *Former Pharmaceutical Manufacturing Facility Demolition* – Project Manager for the demolition of two former manufacturing buildings in Brooklyn, New York. Both buildings were impacted with hazardous levels of PCBs, mercury and lead. Responsibilities included in situ waste characterization of building materials, oversight of hazardous waste removal, completion of waste manifests, and full-time Community Air Monitoring during all demolition activities. Additionally, Roux Associates performed daily inspections and monitoring to ensure the protection of a nearby elementary school and prepared a completion report at the conclusion of the project.

- *PCB Building Material Remediation* – Project Manager for the investigation and TSCA remediation of PCB containing paint in a former manufacturing area. This location (approximately 2,000 square feet in area, and two stories in height) was found to contain PCBs in the paint matrix at concentrations as high as 10,000 parts per million. The underlying building material (brick, concrete, and terra cotta) was also found to be impacted with PCBs from the paint. Responsibilities included preparation of a Self-Implementing Notification and Alternative Decontamination Methods and Verification Sampling Work Plan to remediate the PCBs under the TSCA regulatory framework. This project also included providing field oversight of the PCB remediation, completion of the extensive verification sampling program of the underlying porous building material, and collection of confirmation air samples and confirmation wipe samples outside of the exclusion zone to confirm proper function of all critical barriers. Following the successful completion of the project, a Final Report was prepared and submitted to USEPA documenting the entire project in detail.

EXPERT/INSURANCE LITIGATION SUPPORT

- Consulting Fact Witness for an insurance litigation claim where insured was seeking to be reimbursed for over $15mm of previous environmental investigation/remediation costs. My responsibilities included a formal deposition and testifying in US District Federal Court – Eastern District of New York. Case resulted in favorable ruling for our client.

- Consulting expert for a PRP to the Gowanus Canal Superfund Site, Brooklyn, New York. Evaluated all RI data, performed fate and transport analysis, and evaluation of historic site operations to support facility *de minimis* status.

209 Shafter Street | Islandia, NY 11749
Main: (631) 232-2600 | Direct: (631) 630-2320
E-mail: rkovacs@rouxinc.com | Website: http://www.rouxinc.com

ROUX

PROFESSIONAL PROFILE

Brian P. Morrissey, P.E., BCEE
Principal Engineer

TECHNICAL SPECIALTIES

- Development, design and implementation of soil and groundwater remediation systems.
- Optimization of ongoing remedial operations.
- Development of project and regulatory closure strategies.
- Management, support, and oversight of large inter-disciplinary teams for site remediation.
- Cold eye design review and evaluation of process safety.
- Preparation of feasibility studies, engineer's reports, design drawings, specifications, contract documents, permit applications, cost estimates, operations and maintenance plans and construction management for the following:
  - In situ groundwater remedial technologies
  - Sub-slab depressurization systems
  - Industrial and sanitary wastewater treatment systems
  - Floating product recovery systems
  - Ground water pumping and treatment facilities
  - Water supply, treatment, and distribution
  - Underground storage tank (UST) systems
  - Containment systems
  - Air sparging, soil vapor extraction and vapor collection and treatment systems
  - Building decontamination and decommissioning
  - Landfill cap design and permitting
  - Hazardous waste soils removal, transportation, and disposal

EXPERIENCE SUMMARY

Thirty-five years of experience working in many areas of the environmental industry under a variety of regulatory programs such as Federal and State Superfund, New Jersey ECRA/ISRA, NYSDEC Voluntary Cleanup, Petroleum and Chemical Bulk Storage, and NYC Brownfields.

Principal Engineer and Office Manager at Roux Environmental Engineering and Geology, D.P.C.; Senior Engineer and Senior Project Manager at ERM.

CREDENTIALS

B.E., Civil Engineering, Cooper Union, 1980
M.S., Civil and Environmental Engineering, NYU Tandon School of Engineering (former Polytechnic), 1985
Professional Engineer: New York (1986), New Jersey (2003), and Virginia (2010)
OSHA 40-hour Health and Safety Training
ExxonMobil Loss Prevention System certified
NYCOER Gold Certified Professional
Board Certified Environmental Engineer (BCEE) of the American Academy of Environmental Engineers and Scientists - Specialty Certification in Hazardous Waste Management, 1995

PROFESSIONAL AFFILIATIONS

Water Environment Federation

KEY PROJECTS

- Principal Engineer and Project Manager for the remediation and monitoring of over 100 vehicle fueling sites in New York City with UST petroleum releases. The remediation systems at the various sites include multi-phase extraction (MPE), soil vapor extraction (SVE), air sparging, groundwater recovery and treatment, and automated product-only recovery systems. Priorities on this multi-year contract included expediting remedial progress, increasing the effectiveness of operating systems, achieving NFA status, and reducing NYC's overall program costs. The work included conducting soil vapor studies at 9 sites to assess vapor intrusion concerns. Roux Associates also implemented in situ injections at 14 sites to cost-effectively achieve site closure. The in situ injections utilized chemical oxidation and bioremediation products including sodium percarbonate, oxygen generating compounds, hydrogen peroxide, petroleum-degrading bacteria, and nutrient/enzyme complexes.
- Principal Engineer for design upgrades and expansion of the groundwater depression and separate phase product recovery systems at former petroleum refinery in Brooklyn, New York. The site encompasses one of the nation's largest petroleum releases (18 million gallons). Key components included: the installation of 10 remote dual-pump free-phase product recovery wells, including wellhouse/control components and petroleum storage facilities; the construction of extensive underground utilities to connect remote recovery wells with two existing treatment systems; and modifications to existing groundwater treatment facilities to add auxiliary equipment to optimize treatment performance and system runtime. The work also involved the integration of control between the two separate groundwater treatment systems and all associated recovery wells into a single SCADA platform to improve operability. Also, redesigned building with new mezzanine and equipment layout to improve flow of the process treatment train.
- Principal Engineer and P.E. of Record for several Brownfields projects. Responsibilities include development of Remedial Action Work Plan (RAWP), Community Air Monitoring Program (CAMP) and engineering certification of all remediation activities related to management of contaminated soils and clean fill. Also manage designs of remedial elements including sub-slab depressurization systems (SSDS), vapor barriers and waterproofing, stormwater management, and wastewater treatment and disposal.
- Principal Engineer for evaluation and cost estimates of remedial options at a former electronics manufacturing plant in Taiwan. Prepared Pilot Study Plan and presentation for Taiwanese regulatory officials on use of the in situ technologies of enhanced reductive dechlorination and chemical oxidation.

209 Shafter Street | Islandia, NY 11749
Main: (631) 232-2600 | Direct: (631) 630-2330
E-mail: bmorrissey@rouxinc.com | Website: www.rouxinc.com

Brian P. Morrissey, P.E., BCEE
Principal Engineer

- Principal Engineer for the design of a vapor mitigation system for a 1.5 million square foot warehouse (former aircraft engine manufacturing plant) in New Jersey. The system design includes eight 40-HP blowers and over 600 vapor extraction wells to mitigate elevated levels of chlorinated solvents and petroleum compounds in the subsurface from migrating into the building.
- Principal Engineer for conducting detailed evaluation of problematic groundwater treatment system in Rensselaer, New York. Primary constituents of concern include heavy metals, chlorinated solvents, and BTEX compounds. Developed performance testing program, diagnosed causes of problems and presented several recommendations with cost estimates for upgrading systems and improving personnel health and safety. Prepared engineering report with key recommendations that included modifying equipment layout, injecting iron deposition and calcium scale control agents into water stream, facilitating carbon change-outs and upgrading the system instrumentation and controls.
- Principal Engineer for remediation of former petroleum terminal in Oceanside, New York. Managed preparation of Remedial Action Plan, community air monitoring plan, detailed design drawings, bid documents and O&M Plan. Conducted discussions/negotiations with NYSDEC and managed the annual budget for capital and operating expenses.
- Principal Engineer for the design of a soil vapor extraction (SVE) system to address elevated concentrations of methane and petroleum hydrocarbons in the shallow subsurface beneath three Operable Units of the project area. The major components of the design included the installation of 21 SVE wells and associated piping and instrumentation, the construction of a new treatment building to house the SVE treatment equipment, as well as office space to support the remediation project; and the installation of a thermal/catalytic oxidation system to treat the soil vapor extracted from the SVE wells, and also the air stripping and aeration process streams from a nearby groundwater treatment facility. The SVE treatment system was designed to accept up to 4,000 cfm of process air to meet the discharge requirements of 6 NYCRR, Part 201 and NYSDEC DAR-1 guidelines. All activities were performed under the oversight of the NYSDEC and in compliance with a strict regulatory milestone schedule.
- Senior Manager for Remedial Design and Construction Oversight at federal Superfund site in Elmira, New York. The 33-acre site included several areas of concern where the soil and groundwater had been contaminated by several types of hazardous wastes. Managed preparation of design submittals to USEPA Region II in accordance with CERCLA guidelines. The soil/sediment remediation design included requirements for materials handling, dewatering and disposal. PCB wastes were required to be segregated and disposed of at a TSCA-permitted facility. The design required stabilization of certain wastes and the installation of a RCRA cap. The design included measures for control and treatment of dewatered fluids and stormwater during construction Groundwater remediation system includes 12 recovery wells, filtration units and two air strippers.
- Principal Engineer and P.E. of Record for the design and construction of a storm drainage and sanitary sewer project located in the area of a former petroleum terminal in Brooklyn, New York. Worked on several design modifications to obtain NYCDEP approvals. Work included construction of approximately 1,600 linear feet of RCP storm sewer and approximately 1,000 feet of ductile iron sanitary sewer with pipe sizes ranging from 12-inch diameter to 54-inch diameter. Also replaced approximately 220 feet of 20-inch cast iron water main. The construction required vibration monitoring during sheeting and operation and maintenance of a temporary dewatering treatment system.
- Project Manager for remediation of several gasoline service station sites in Westchester County and Long Island, New York. Developed design/build approach for fast-track implementation while complying with NYSDEC guidelines. Typical remedial systems include groundwater recovery and treatment, soil vapor extraction and air sparging, and vapor treatment.
- Principal Engineer for an underground utility construction project for the expansion of a large groundwater treatment operation. Project included excavation and installation of over 3,500 linear feet of water main, product pipeline and control conduits within NYC streets.
- Provided engineering evaluation of options for UST repair/replacement at major railroad yard in Sunnyside, Queens, New York to address relocation needs and comply with NYSDEC tank regulations. Worked on preparation of UST upgrade work plan, cost estimates and contract documents.
- Principal Engineer for a building decommissioning and demolition project at an active railroad facility in Sunnyside, Queens, New York. Project included preparation of demolition specifications, collection of waste characterization soil and water samples, air monitoring, removal and disposal of impacted soil, removal and disposal of asbestos containing material, removal and disposal of demolition debris, and preparation of a demolition completion report.
- Project Manager for remediation of industrial airport site in Millville, New Jersey under ECRA/ISRA programs. Managed planning, detailed design and permitting activities required to replace 1,000-gpm public supply well impacted by extensive chlorinated solvent plume. Also managed the conceptual planning, permitting and final design of the 200-gpm groundwater recovery, treatment and recharge system

209 Shafter Street | Islandia, NY 11749
Main: (631) 232-2600 | Direct: (631) 630-2330
E-mail: bmorrissey@rouxinc.com | Website: www.rouxinc.com

Brian P. Morrissey, P.E., BCEE
Principal Engineer

that includes ultraviolet light/hydrogen peroxide system controlled by PLCs. This project won the annual Honor Award granted by the American Academy of Environmental Engineers and Scientists.

- Project Manager for the design of wastewater treatment plant (WWTP) upgrades at three (3) separate facilities under the program to protect New York City's watershed. The work included preparing conceptual upgrade plans, facility plans, detailed cost estimates, design drawings and specifications, startup plans, O&M plans, and oversight of construction. Design at one facility included replacement of secondary treatment components and the addition of recirculating sand filters, microfiltration units, emergency generator and telemetry systems.
- Design Manager for groundwater recovery and treatment system at a former manufactured gas plant (MGP) in Atlantic Highlands, New Jersey. Developed specification for implementation of directional drilling under state highway to expand groundwater recovery system to capture off-site contamination. Treatment system design included PLC-based control software that significantly reduced on-site staffing needs. Also, managed construction phase, negotiated/reduced change orders and worked with several subcontractors to meet tight regulatory agency schedule for system start-up. The system removes cyanide, metals, VOCs, and free-phase product.
- Project Manager for upgrading industrial process wastewater treatment system at medical products manufacturing facility in Hancock, New York. The upgraded system removes VOCs and metals, including lead, zinc, and copper, from highly variable waste streams generated by the manufacture of surgical instruments. Prepared design documents for automated system that allows for expected future increase in plant manufacturing capabilities. Also, prepared O&M plan for the treatment system.
- Project Manager for tank replacement program and automation of fueling system for commuter railroad at sites in New York City and Westchester County. Fueling facilities were designed in compliance with federal and state UST regulations.
- Senior Engineer for preparing and certifying Spill Prevention Control and Countermeasure (SPCC) Plans for 25 U.S. Postal Service facilities.
- Project Manager for remediation of several US Postal Service sites. Prepared site-specific HASP and Work Plans for removal of USTs and characterization of impacted soils. Supervised field personnel during investigative and construction phases of work. Also, prepared designs for new double-walled UST systems.
- Project Engineer for environmental audits at approximately 20 commercial and manufacturing facilities aimed at evaluating compliance with federal, state, and local air, wastewater, and hazardous waste regulations. Audits addressed regulatory areas including RCRA, SARA, CWA, CAA, TSCA, and OSHA.
- Project Manager for planning, permitting, design and construction oversight of 12,000-foot sewer system for the collection of sanitary and industrial wastewater in Melville, New York. Sewer design included route selection, sizing of gravity sewers, provisions for utility crossings, solar powered flow meters, grease interceptor, pump station for one branch line, and proper abandonment of leaching facilities. Project also included installation of two 20,000-gallon underground storage tanks and a tanker truck fill area with secondary containment. The final phase of the project consisted of the addition of an industrial waste pretreatment system utilizing pH adjustment, filtration, and a bioreactor tank. This project provided a safe and reliable wastewater disposal system and eliminated a costly 40,000-gallon per day hold and haul system.
- Project Manager for the planning and design of irrigation system using treated wastewater in the Catskills area. Conducted study on acceptable uses of wastewater treated by tertiary methods in accordance with federal and New York State guidance.
- Project Engineer, prepared feasibility study for state Superfund site of former manufacturer of printing inks and ribbons in Glen Cove, New York. Elevated levels of toluene, xylenes, ethylbenzene, and benzene were detected in on-site soils above soil cleanup objectives (SCOs) for the protection of groundwater. Evaluated ground water and soil remediation technologies. After approval of FS by NYSDEC, managed the final design, construction oversight, and startup phases of the project. Remedial system included 30 variable speed controlled recovery pumps, filtration, iron sequestration, tray aeration, soil vapor extraction, and vapor treatment via catalytic oxidation.
- Principal Engineer for development of innovative approach for remediation and reuse of federal Superfund site in Plaistow, New Hampshire. Prepared cost estimates for approaches aimed at reducing project costs by utilizing alternate treatment technologies and maximizing efficiency of existing system. Phased approach for site includes hot spot soil removal, enhancements of existing remedial system, implementing air sparging with SVE and follow-up with polishing step of in situ bioremediation. This alternative plan would achieve environmental restoration of site and is tailored to anticipated re-development of land.
- Principal Engineer for the design of modifications to an active sub-slab depressurization system (SSDS) to mitigate chlorinated solvent soil vapor contamination beneath an existing occupied shopping mall in the Bronx, New York. Worked on coordination and troubleshooting of construction issues. Managed the system testing and start-up and provided recommendations to improve system operation.

209 Shafter Street | Islandia, NY 11749
Main: (631) 232-2600 | Direct: (631) 630-2330
E-mail: bmorrissey@rouxinc.com | Website: www.rouxinc.com

JUDY V. HARRY
P. O. Box 208
120 Cobble Creek Rd.
North Creek, NY 12853

Occupation: Data Validator/Environmental Technical Consultant

Years Experience: 41

Education: B.S., Chemistry, Magna cum laude, 1976, Phi Beta Kappa

Certifications: New York State Woman-Owned Business Enterprise (WBE)

Relevant Work History:

Data Validation Services: September 1989 - present

Sole proprietor of Data Validation Services, a woman-owned small business registered with SAM, providing consultation/validation services to regulatory and commercial clients.

These services include the review of analytical laboratory data for compliance with respect to specific protocols, accuracy and defensibility of data, verification of reported values, and evaluation of quality parameters for analytical usability of results. Approved by USEPA, NYSDEC, NJDEP, NYSERDA, and NYCDEP as a data validator for projects, including USEPA Superfund, Brownfield, and lead sites, and those contracted through the NYSDEC Division of Hazardous Waste Remediation, Division of Solid Waste, and Division of Water Quality.

Performed validation for compliance with laboratory analytical protocols including USEPA OLM, USEPA OLC, USEPA ILM, USEPA DFLM, USEPA SOW3/90, USEPA SOW 7/87 CLP, USEPA SOW 2/88 CLP, USEPA SW846, RCRA, AFCEE, NYS 6 NYCRR Part 360, 40 CFR, Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, including TO-15, 1989/1991/1995/2000/2005 NYSDEC ASPs, and 1987 NYSDEC CLP.

Performed validation according to the USEPA National and Regional SOPs and Functional Guidelines, AFCEE requirements, NYSDEC Validation Scope of Work, NYS DUSR, and NJDEP Division of Hazardous Site Mitigation/Publicly Funded Site Remediation SOPs.

Performed validation for USEPA Superfund Sites including Salem Acres, York Oil, Port Washington L-4 Landfill, Bridgeport Rental and Oil Services, GE-MRFA, MMR/ OTIS AFB, LCP, and Peter Cooper site; and for USEPA lead sites including SJ&J Piconne, Maska, Bowe System, Jones Sanitation, and Syossett Landfill, involving CLP, RAS, and SAS protocols.

Contracted for NYSDEC Superfund Standby Contracts with LMS Engineers, HDR, CDM Smith, Malcolm-Pirnie/ARCADIS, Ecology & Environment, Shaw Environmental, CG&I, O'Brien & Gere Engineers, and EC Jordan, involving samples collected at NYS Superfund Sites and analyzed under the NYSDEC ASP.

Performed validation services for NYSDEC Phase II remedial investigations, RI/FS projects, Brownfield sites, and PRP over-site projects for hazardous waste sites.

Performed validation services for clients conducting RI/FS activities involving samples of many matrices, including waste, air, sludges, leachates, solids/sediments, aqueous, and biota.

Clients have included AECOM, ARCADIS, Barton & Loguidice, Benchmark Engineering, Bergmann Associates, Blasland, Bouck & Lee, Brown and Caldwell, CDM Smith, CB&I Shaw Environmental, C&S Consulting Engineers, Chazen Companies, Clough Harbour & Associates, Columbia Analytical Services, C.T. Male, Dames & Moore, Day Engineering, EA Engineering, EcolSciences, Ecology & Environment, Ecosystems, EC Jordan, Environmental Chemical Corporation, EHRT, ENSR Consulting, ELM, ERM-Northeast, Fagan Engineers, Fanning Phillips & Molnar, FluorDaniel GTI, Frontier, Foster Wheeler Environmental Corp, Frontier Technical, Galson Consultants, GE&R, Geomatrix Consultants, GZA Environmental, Handex of N, H2M Group, HDR, HRP, IT Corp, Jacques Whitford, JTM Associates, Labella Associates, Langan Engineers, Leader Environmental, Lockwood, Kessler & Bartlett, LMS Engineers, Malcolm-Pirnie, Metcalf & Eddy, NWEC&C, O'Brien & Gere Engineers, Pace, Parsons Engineering-Science, Plumley Engineering, Prescott Environmental, P. W. Grosser, Rizzo Associates, Roux Associates, Sear Brown Group, SECOR, Shaw Environmental, Stantec, ThermoRemediation Inc., TRC Environmental, Turnkey Environmental Restoration, TVGA Engineering, URS Consultants, Wehran Emcon, Weston, YEC, and private firms.

Provided consultation services to laboratories regarding analytical procedures and protocol interpretation, and to law firms for litigation support.

Provided services to firms involving audits of environmental analytical laboratories to determine analytical capability, particularly for compliance with NYSDEC ASP and AFCEE requirements.

Guest speaker on a panel discussing Data Review/Compliance and Usability, for an analysis workshop for the New York Association of Approved Environmental Laboratories, 1993.

Adirondack Environmental Services: June 1987 - August 1989

Senior mass spectroscopist for AES. Responsible for GC/MS analyses of environmental samples by USEPA and NYSDEC protocols, development of the GC/MS laboratory, initiating the instrumental and computer operations from the point of installation, and for implementing the procedures and methodologies for Contract Laboratory Protocol.

CompuChem Laboratories: May 1982 - January 1987

Managed a GC/MS production laboratory; developed, implemented, and supervised QA/QC criteria at three different levels of review; and was responsible for the development and production of the analysis of environmental and clinical samples. Directed a staff of 23 technical and clerical personnel, and managed the extraction and GC/MS labs and data review operations.

Research Triangle Institute: December 1979 - May 1982

Worked as an analytical research chemist responsible for development of analytical methods for the EPA Federal Register at RTI. This involved analysis of biological and environmental samples for priority pollutants, primarily relating to wastewaters and to human sampling studies. Method development included modification and interfacing of the initially developed Tekmar volatile purge apparatus to GC/MS, development and refinement of methods for entrapment and concentration of the air medium for subsequent volatile analysis, and the analysis and resolution/ identification of individual PCB congeners within Aroclor mixtures by capillary column and mass spectra.

Guardsman Chemical Company: February 1977 - November 1979

Performed all quality control functions for the manufacturing plant. Performed research and development on coatings and dyes.

Almay Cosmetics: May 1976 - December 1976

Product evaluation chemist. Responsible for analytical QC of manufactured products.

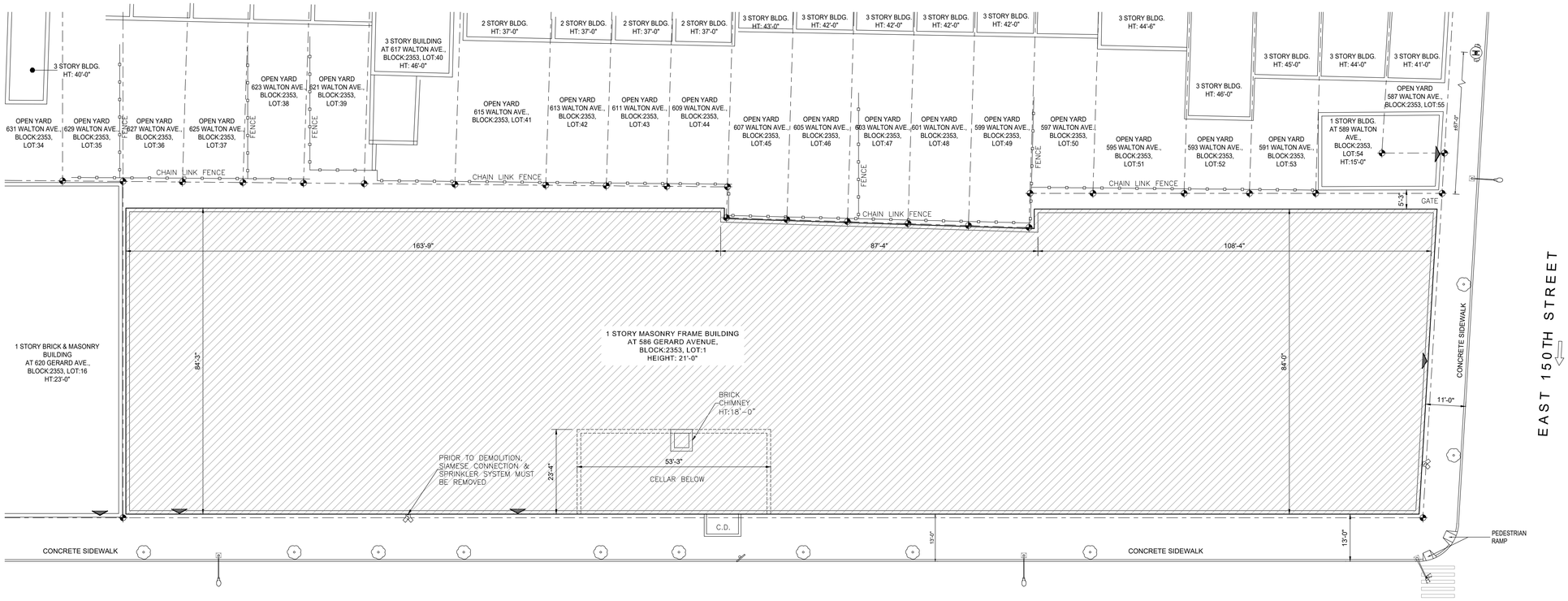
Publication

Pellizzzari, E.D., Moseley, M.A., Cooper, S.D., Harry, J.V., Demian, B., & Mullin, M. D. (1985). Recent Advances in the Analysis of Polychlorinated Biphenyls in Environmental and Biological Media. *Journal of Chromatography*, 334(3) 277-314.

APPENDIX K

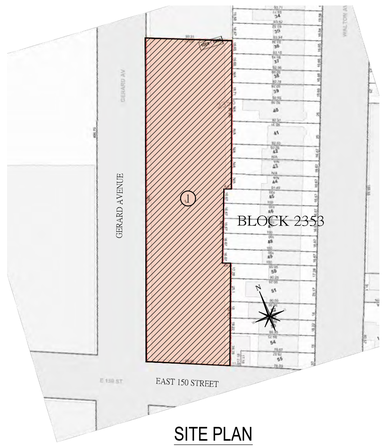
Proposed Demolition Plans

FULL DEMOLITION OF 1 STORY MASONRY FRAME BUILDING
AT 586 GERARD AVENUE, BRONX, NY 10451
BLOCK:2353, LOT:1 , BIN# 2001115

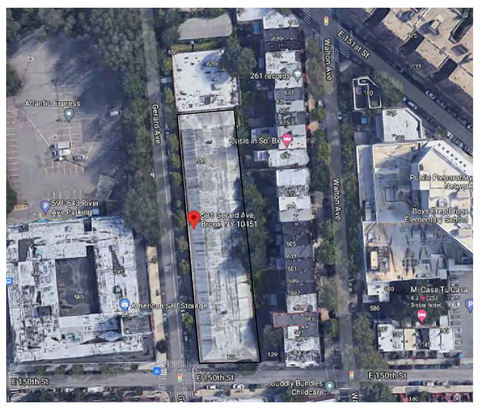


PLOT PLAN
SCALE: 1/16" = 1'-0"

DRAWING INDEX		DOB FILING 9-03-2021	
DM-001.00	COVER SHEET	X	
DM-002.00	GENERAL NOTES	X	
DM-100.00	SITE SAFETY ZONE PLAN	X	
DM-101.00	SAFETY ZONE SECTIONS	X	
DM-102.00	ROOF DEMOLITION PLAN (PHASE-1)	X	
DM-103.00	DEMOLITION SECTIONS	X	
DM-104.00	ROOF DEMOLITION PLAN (PHASE-2)	X	
DM-105.00	DEMOLITION SECTIONS	X	
DM-106.00	ROOF DEMOLITION PLAN (PHASE-3)	X	
DM-107.00	DEMOLITION SECTIONS	X	
DM-108.00	1ST FLOOR DEMOLITION PLAN	X	
DM-109.00	DEMOLITION SECTIONS	X	
DM-110.00	FOUNDATION DEMOLITION PLAN	X	
DM-111.00	DEMOLITION SECTIONS	X	
DM-112.00	FINAL CONDITION PLAN	X	
DM-113.00	FINAL CONDITION SECTIONS	X	
DM-200.00	PROTECTION DETAILS	X	
DM-201.00	PROTECTION DETAILS	X	
DM-300.00	EQUIPMENT SPECIFICATIONS	X	
DM-301.00	EQUIPMENT SPECIFICATIONS	X	



SITE PLAN



TOP VIEW

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

COVER SHEET

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

DOB STAMP HERE

SEAL & SIGNATURE

STATE OF NEW YORK · SANTIAGO E. HELMA · 087791 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-001.00

Sheet 1 | 20

GENERAL NOTES:

1. WORK OF DEMOLITION AND REMOVALS MUST CONFORM TO THE REQUIREMENT OF THE 2014 NEW YORK CITY BUILDING CODE CHAPTER 33 AND SECTIONS 3301 THRU 3310, FIRE DEPARTMENT REGULATIONS, TRANSIT AUTHORITY, ENVIRONMENTAL DEPARTMENT, UTILITY COMPANIES OR ANY OTHER AUTHORITY THAT MAY RESULT INVOLVED OR COMPROMISED IN THE WORK THAT WILL BE PERFORMED UNDER THE PRESENT SET OF DRAWINGS. THE WORK MUST ALSO CONFORM WITH ALL APPLICABLE FEDERAL AND STATE LAWS, CONTRACT DOCUMENTS AND THE BEST TRADE PRACTICES AS WELL AS ALL MEANS AND METHODS INDICATED ON THE PRESENT DOCUMENT.

2. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK, AND SHALL REPORT ANY DISCREPANCIES BETWEEN DRAWINGS, PROCEDURES AND FIELD CONDITIONS TO THE PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT WHICH SHALL BE NOTIFIED IN WRITING PRIOR TO COMMENCING WORK.

3. DEMOLITION OPERATIONS SHALL NOT COMMENCE UNTIL THE APPLICABLE SITE SAFEGUARDS, SIDEWALKS, STREETS AND ADJOINING PROPERTY PROTECTIONS ARE IN PLACE AS REQUIRED BY NEW YORK CITY BUILDING CODE SECTIONS 3303, 3306, 3307, 3308, AND 3309.

4. A SOLID FENCE 8' HIGH WILL ENCLOSE THE DEMOLITION SITE TO PROVIDE A SAFETY ZONE AREA THAT MEETS THE REQUIREMENT OF SECTION 3307.7 AND 3304.4.3 OF THE NYCBC.

5. ALL PROTECTION LIKE SHEDS BC 3307.6, FENCE 3307.7, ROOF PROTECTION OF ADJACENT PROPERTIES 3309.10, SCAFFOLDING BC 3314, ETC SHALL BE DESIGN AND FILED FOR APPROVAL TO THE DOB BY A LICENSED PROFESSIONAL. PROTECTIONS TO REMAIN IN PLACE UNTIL ALL OVERHEAD WORK IS COMPLETED.

6. ALL PIPE AND HANGING SCAFFOLDING IS TO BE SURROUNDED WITH VERTICAL PROTECTIVE NETTING AS REQUIRED UNDER ARTICLE 3308.1 OF THE 2014 NYC BUILDING CODE.

7. ANY COURTYARD AND TERRACES BELOW AREAS OF DEMOLITION TO BE PROTECTED AND BARRICADED TO PREVENT UNAUTHORIZED PERSONNEL TO ACCESS; OTHERWISE OVERHEAD PROTECTION IS TO BE UTILIZED. ALL OTHER ADJACENT PROPERTY PROTECTION IS TO BE PROVIDED AS PER ARTICLE BC 3309 OF THE 2014 NYC BUILDING CODE. THIS SHALL ALSO INCLUDE A CONTROLLED ACCESS GATE WHICH MUST BE MONITORED BY A FLAG PERSON WHEN WORK IS IN PROGRESS. SECTION 3303.3, 3307.4.4 AND 3307.5

8. NO PARTY WALL, BALCONY OR EXISTING FIRE EXIT SHALL BE DEMOLISHED, REMOVED OR OBSTRUCTED IN ANY MANNER THAT WOULD DESTROY THE FULL EFFECTIVENESS OF SUCH FIRE EXIT AS A MEANS OF EGRESS, UNLESS A SUBSTITUTE MEANS OF EGRESS MEETING THE REQUIREMENT OF NYCBC HAS BEEN PROVIDED (3303.9)

9. A HOT LINE NUMBER SHALL BE PROVIDED AT THE SITE FOR TELEPHONING THE DEPARTMENT OF BUILDING AND THE DEPARTMENT OF TRANSPORTATION WHEN IT IS NECESSARY TO CLOSE OFF A STREET FOR SAFETY PURPOSES. THIS INFORMATION IS TO BE DISPLAYED ON A SIGN REQUIRED UNDER SECTION 3301.9. ALL OTHER SIGNAGE AS REQUIRED BY OWNER OR D.O.B. SHALL BE PROVIDED.

10. CONTRACTOR SHOULD OBTAIN A PERMISSION TO ENTER ADJOINING PROPERTIES WHEN REQUIRED. A PRE DEMOLITION SURVEY OF EXISTING CONDITIONS SHOULD BE CONDUCTED.WRITTEN AND PHOTOGRAPHIC DOCUMENTATION MUST BE GENERATED PRIOR TO COMMENCEMENT OF ANY DEMOLITION OPERATIONS. ADJOINING PROPERTY OWNERS, PROFESSIONAL ENGINEER OR ARCHITECT INVOLVED IN THE PROJECT SHOULD BE NOTIFIED OF ANY UNSURROUNDED FIELD COULD OR ANY OTHER PARTICULAR SITUATION THAT COULD ARISE DURING DEMOLITION OPERATIONS. AS PER 3309.2

11. CONTRACTOR OR PERMIT HOLDER MUST NOTIFY THE DEPARTMENT OF BUILDINGS (BEST SQUAD) VIA PHONE OR ELECTRONICALLY, AT LEAST 24 HOURS, BUT NO MORE THAN 48 HOURS AT (212-393-2550) PRIOR TO COMMENCEMENT OF ANY WORK AS PER NYCBC. 3306.3.1.

12. WHERE A CONSTRUCTION OR DEMOLITION PROJECT WILL REQUIRE ACCESS TO ADJOINING PROPERTY, WRITTEN NOTIFICATION SHALL BE PROVIDED TO THE ADJOINING PROPERTY OWNER AT LEAST 60 CALENDAR DAYS PRIOR TO THE COMMENCEMENT OF WORK. SUCH NOTIFICATION SHALL DESCRIBE THE NATURE OF THE WORK, ESTIMATED SCHEDULE AND DURATION, DETAILS OF INSPECTIONS OF MONITORING TO BE PERFORMED ON THE ADJOINING PROPERTY, PROTECTION TO BE INSTALLED ON THE ADJOINING PROPERTY, AND CONTACT INFORMATION FOR THE PROJECT. WHERE NO RESPONSE IS RECEIVED, A SECOND WRITTEN NOTIFICATION SHALL BE MADE NO MORE THAN 45 DAYS, AND NOT LESS THAN 30 CALENDAR DAYS, PRIOR TO THE COMMENCEMENT OF THE WORK. AS PER NYCBC. 3309.1.1.

13. THE APPROVED SET OF DEMOLITION DOCUMENTS SHALL BE KEPT AT THE SITE AT ALL TIMES AND BE ACCESSIBLE FOR INSPECTION AS PER NYCBC 3306.5.2

14. AS PER N.Y.C.B.C. SECTION 3306.6 AND 1704.20.4, SPECIAL INSPECTOR AGENCY PERFORM THREE INSPECTIONS: BEFORE DEMOLITION OPERATIONS START, DURING DEMOLITION AND AT THE CONCLUSION OF DEMOLITION, PERMIT HOLDER OR CONTRACTOR ARE RESPONSIBLE TO NOTIFY ENGINEER OF RECORD 2 DAYS IN ADVANCE OF COMMENCEMENT OF DEMO OPERATIONS..

15. SERVICE UTILITY CONNECTIONS SHALL BE DISCONTINUED AND CAPPED, AND CERTIFICATIONS TO THAT EFFECT ISSUED BY THE REPRESENTATIVE OF THE UTILITY COMPANY SHALL BE FILED WITH THE DEPARTMENT. (3303.2.5)

16. FIRE EXTINGUISHERS SHALL BE PROVIDED IN ACCORDANCE WITH THE NEW YORK CITY FIRE CODE, 3303.7.2

17. ANY STRUCTURAL MEMBER THAT IS BEING DISMEMBERED SHALL NOT SUPPORT ANY LOAD OTHER THAN ITS OWN WEIGHT. NO WALL, CHIMNEY, OR OTHER STRUCTURAL PART SHALL BE LEFT IN SUCH CONDITION THAT IT MAY COLLAPSE OR BE TOPPLED BY WIND, VIBRATION OR ANY OTHER CAUSE. THE METHOD OF REMOVAL OF ANY STRUCTURAL MEMBER SHALL NOT DESTABILIZE REMAINING MEMBERS. ALL HANDLING AND MOVEMENT OF MATERIAL OR DEBRIS SHALL BE CONTROLLED SUCH THAT IT WILL NOT DEVELOP UNACCOUNTED IMPACT LOADS ON THE STRUCTURE.

18. DEMOLITION OF MASONRY BUILDINGS WITH WOODEN FLOORS SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
    1. DEMOLITION OF WALLS AND PARTITIONS SHALL PROCEED IN A SYSTEMATIC MANNER, AND ALL WORK ABOVE EACH TIER OF FLOOR BEAMS SHALL BE COMPLETED BEFORE ANY OF THE SUPPORTING STRUCTURAL MEMBERS ARE DISTURBED.
    2. SECTIONS OF MASONRY WALLS SHALL NOT BE LOOSENED OR PERMITTED TO FALL IN SUCH MASSES AS TO AFFECT THE CARRYING CAPACITY OF FLOORS OR THE STABILITY OF STRUCTURAL SUPPORTS.

19. DURING HAND DEMOLITION, NO BEARING PARTITION SHALL BE REMOVED (IF UNSURROUNDED) FROM ANY FLOOR UNTIL THE FLOOR FRAMING SYSTEM ON THE FLOOR ABOVE HAS BEEN REMOVED AND LOWERED.

20. MATERIAL SHALL NOT BE STORED OR PILED ON CATCH PLATFORMS, WORKING PLATFORMS, FLOORS, OR STAIRWAYS OF ANY STRUCTURE. SHOULD THE CONTRACTOR NECESSITATES THE USE OF A TEMPORARY STORAGE LOCATION WITHIN A FLOOR, HE/SHE MUST SUBMIT A REQUEST IN WRITING TO THE ENGINEER FOR APPROVAL.

21. DEBRIS, BRICKS, AND SIMILAR MATERIAL SHALL BE REMOVED BY MEANS OF CHUTES REFER TO SAFETY ZONE PLAN FOR CHUTE LOCATION.

22. DEBRIS STORED IN THE BASEMENT OR BASEMENT MUST NOT BE PILED UP ABOVE THE LEVEL OF THE ADJACENT EXTERIOR GRADE.

23. CONTRACTOR MUST LOCATE DEMOLITION EQUIPMENT AS DIRECTED ON THIS SET OF PLANS. DEBRIS MATERIAL MUST BE REMOVED ALSO NOT IMPOSE LOADS ON WALLS, FLOORS OR FRAMING.

24. DUST PRODUCING OPERATIONS SHALL BE WETTED DOWN TO THE EXTENT NECESSARY TO CONTROL AIRBORNE DUST. IF WATER OF DUST CONTROL IS FROM A FIRE HYDRANT, A PERMIT FROM D.E.P. MUST BE OBTAINED BY THE CONTRACTOR.(3306.9.3)

25. ALL AREAS USED BY THE PUBLIC SHALL BE MAINTAINED FREE FROM ICE, SNOW, GREASE, DEBRIS, EQUIPMENT, MATERIALS, PROJECTIONS, TOOLS, OR THEIR ITEMS, SUBSTANCES, OR CONDITIONS THAT MAY CONSTITUTE A SLIPPING, TRIPPING, OR OTHER HAZARD. 3303.,4.1.2

26. CONTAINERS, WASTE DUMPSTER, DEBRIS BOXES AND SKIP BOXES SHALL COMPLY WITH THE FOLLOWING: (3303.4.2)
    A. WASTE DUMPSTER, DEBRIS BOXES AND SKIP BOXES SHALL BE SECURED BY ROPE, CABLE OR CHOCKING AT WHEELS AT THE END OF THE WORKDAY IN ORDER TO PREVENT MOVEMENT. SUCH WASTE DUMPSTER, DEBRIS BOXES AND SKIP BOXES SHALL NOT BE PLACED AT THE EDGE OF THE BUILDING AT ANY TIME, EXCEPT WHEN BEING MOVED FROM THE FLOOR OR BUILDING.
    B. CONTAINERS CONTAINING DEBRIS OR WASTE SHALL BE SURROUNDED AT THE END OF THE WORKDAY AND AT ANY TIME WHEN FULL TO NEAR THE RIM. CONTAINERS NEED NOT BE SURROUNDED WHEN THEY ARE NOT IN USE OR WHILE STORED IN A FULLY ENCLOSED SPACE AT THE END OF THE WORKDAY.

27. CONTRACTOR MUST OBTAIN ALL REQUIRED PERMITS FROM THE DEPARTMENT OF TRANSPORTATION (DOT) FOR ANY STREET OBSTRUCTION OR STREET CLOSING AS PER NYCBC 3307.4.3.

28. NO STREET OR SIDEWALK SHALL BE CLOSED EITHER IN WHOLE OR IN PART WITHOUT A PERMIT FROM THE DEPARTMENT OF TRANSPORTATION. SUCH PERMIT SHALL BE DISPLAYED AT THE JOB SITE. THE CLOSING OR TEMPORARY USE OF STREETS OR SIDEWALKS OR THE OBSTRUCTION OF ANY PART THEREOF SHALL COMPLY WITH THE REQUIREMENTS OF THE DEPARTMENT OF TRANSPORTATION. (3307.2 AND 3307.2.1 THRU 3307.2.6)

29. IF CONTRACTOR UNCOVERS A SITE CONDITION THAT IS NOT DEPICTED ON DEMOLITION DRAWING, E.O.R MUST BE IMMEDIATELY NOTIFIED IN ORDER TO EVALUATE THAT CONDITION.
    E.O.R WILL DETERMINE IF UNSURROUNDED CONDITION WILL REQUIRE THE ALTERATION OF THE PROPOSED DEMOLITION SEQUENCE INCLUDING BUT NOT LIMITED TO THE UTILIZATION OF TEMP. SHORING, BRACING OR OTHER MEANS OF STRUCTURAL SUPPORT.

30. DO NOT USE CUTTING TORCHES UNTIL WORK AREA IS CLEARED OF FLAMMABLE MATERIALS. AT CONCEALED SPACES, SUCH AS DUCT AND PIPE INTERIORS, VERIFY CONDITION AND CONTENTS OF HIDDEN SPACE BEFORE STARTING FLAME-CUTTING OPERATIONS. MAINTAIN FIRE WATCH AND PORTABLE FIRE-SUPPRESSION DEVICES DURING FLAME-CUTTING OPERATIONS.

31. ALL WORK SPECIFIED ON DEMOLITION PLANS MUST BE COMPLETED PRIOR TO DEMOLITION SIGN OFF.

32. DEMOLITION OPERATIONS MUST NOT INTERFERE WITH NATURAL SURFACE DRAINAGE. WATER COURSES, DRAINAGE DITCHES, ETC. MUST NOT BE OBSTRUCTED BY DEMOLITION DEBRIS.

33. ACCUMULATION OF WATER AT ADJOINING FOUNDATIONS MUST BE PREVENTED IN ORDER TO AVOID WATER DAMAGE. CONTRACTOR MUST CRUSH EXISTING SLABS-ON-GRADE OR PROVIDE SUMP PUMPS AS REQUIRED.

34. ASBESTOS MUST BE REMOVED PRIOR TO COMMENCING ANY DEMOLITION OPERATION CONTRACTOR MUST OBTAIN PERMIT FROM THE DEPARTMENT OF ENVIRONMENTAL PROTECTION
FOR ASBESTOS REMOVAL.

35. PRIOR TO COMMENCEMENT OF DEMOLITION OPERATIONS, ALL PIPES, TANKS, BOILERS CONTAINING STEAM OR FUEL AND LOCATED IN THE AREA AUTHORIZED TO BE DEMOLISHED MUST BE PURGED OF SUCH STEAM OR FUEL.

36. A LICENSED EXTERMINATOR SHALL EFFECTIVELY TREAT THE PREMISES FOR RODENT EXTERMINATION AS PER THE REQUIREMENTS OF THE DEPARTMENT OF HEALTH AND MENTAL HYGIENE. (3306.9.13)

37. ALL WORKERS, FOREMAN, MANAGERS AND PROJECT SUPERINTENDENTS WORKING ON THE SITE ARE REQUIRED TO HAVE SUCCESSFULLY COMPLETED A 30 HOUR COURSE IN CONSTRUCTION SAFETY APPROVED BY THE UNITED STATES DEPARTMENT OF LABOR OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION AS REQUIRED BY LOCAL LAW 41 OF 2014. COMPLY WITH ANSI A 10.6 AND NFPA 241.

REMOVAL OF SPRINKLER SYSTEM WITH A FIRE DEPARTMENT CONNECTION PRIOR DEMOLITION COMMENCEMENT NOTES:

1. A FDNY LETTER OF NO OBJECTION WILL BE OBTAINED AND THE REQUIREMENTS OF THAT LETTER WILL BE ADHERED TO.

2. A PERMIT SHALL BE OBTAINED FROM THE NEW YORK CITY DEPARTMENT OF BUILDINGS FOR THE REMOVAL OF THE SPRINKLER SYSTEM.

3. ALL ABATEMENT WILL BE COMPLETED PRIOR TO REMOVING THE SPRINKLER SYSTEM.

4. ALL COMBUSTIBLE CONTENT AND DEBRIS SHALL BE REMOVED IN ACCORDANCE WITH BC3306.9.8.1 PRIOR TO REMOVING THE SPRINKLER SYSTEM.

5. DEMOLITION WILL COMMENCE WITHIN 2 WEEKS OF REMOVING THE SPRINKLER SYSTEM.

JOB DESCRIPTION:

1. THIS IS A FULL DEMOLITION OF 1 STORY FRAME MASONRY BUILDINGS LOCATED AT 586 GERARD AVENUE, BRONX AS FOLLOWS;

2. CONTRACTOR MUST FOLLOW ALL PROTECTION AND SAFETY RECOMMENDATIONS DESCRIBED ON GENERAL NOTES, PROTECTION NOTES, DEMOLITION SEQUENCES, DEBRIS REMOVAL NOTES AND ANY ADDITIONAL NOTES THAT ARE PART OF THE PRESENT SET OF DRAWINGS.

3. THERE ARE (2) SIAMESE CONNECTION OR STAND PIPE ACTIVE INSTALLED IN THE BUILDING.

4. ALL FOUNDATION WALLS WILL REMAIN IN PLACE TO PRESERVE THE STRUCTURAL STABILITY OF RETAINING WALLS AND ADJACENT BUILDING.

SPECIAL INSPECTIONS REQUIRED BY BUILDING CODE:

1. MECHANICAL DEMOLITION	BC 1704.20.4 BC 3306.6
2. STRUCTURAL STABILITY	BC 1704.20.1

DEMOLITION OF WEAKENED STRUCTURES:

THIS BUILDING IS NOT A WEAKENED STRUCTURE, THE STRUCTURAL STABILITY OF THIS BUILDING HAS BEEN EVALUATED, ANY PROBING (IF REQUIRED) HAS BEEN PERFORMED. THE STRUCTURE WAS FOUND STABLE AND SUITABLE FOR DEMOLITION PERSONNEL TO PERFORMED DEMOLITION OPERATIONS FROM WITHIN THE BUILDING.

NOTE:

1. NECESSARY ACCESS AGREEMENTS MUST BE OBTAINED PRIOR TO INSTALLATION OF REQUIRED PROTECTION BEYOND THE PROPERTY LINES.

2. ACCESS AGREEMENTS MUST BE KEPT AVAILABLE ON THE JOB SITE FOR THE DURATION OF THE JOB.

MECHANICAL EQUIPMENT LIST:

1. BOBCAT S250 SKID-STEER LOADER (OR EQUIVALENT APPROVED BY ENGINEER) FOR DEBRIS REMOVAL, TRUCK LOADING, SLAB ON GRADE REMOVAL AND BACKFILLING.	TO OPERATE ON GROUND ONLY
2. R210LC-9 HYDRAULIC EXCAVATOR (OR EQUIVALENT APPROVED BY ENGINEER) FOR STRUCTURAL REMOVAL DEBRIS REMOVAL, TRUCK LOADING, SLAB ON GRADE REMOVAL AND BACKFILLING.	TO OPERATE ON GROUND ONLY
3. HTH10.10 FORK LIFT (OR EQUIVALENT APPROVED BY ENGINEER) FOR STRUCTURAL REMOVAL.	TO OPERATE ON GROUND ONLY
4. SUMNER R-250 ROUST-A-BOUT (OR EQUIVALENT APPROVED BY ENGINEER) FOR STRUCTURAL REMOVAL OF BEAMS & COLUMNS.	TO OPERATE ON GROUND ONLY

HANDTOOL EQUIPMENT LIST:

1. CHAIN SAWS
2. CHIPPING GUNS
3. JACKHAMMERS
4. ELECTRIC GRINDER
5. COMPRESSOR
6. GAS-POWERED DEMOLITION SAW
7. OXY-ACETYLENE BURNING OUTFIT

NOTIFICATIONS

FOR DEMOLITION ONLY:
CONTACT THE CENTER 24 HOURS BEFORE START OF WORK AT (212) 393-2550

FOR EXCAVATION ONLY:
CONTACT THE CENTER 24 HOURS BEFORE START OF WORK AT (212) 393-2550

EMERGENCY CONTACT NUMBERS (NOT 311 OR 911)

D.O.B. BRONX BOROUGH OFFICE
1932 ARTHUR AVENUE
BRONX, NY 10457
BOROUGH COMMISSIONER:(718) 960-4700
BOROUGH MANAGER: (718) 960-4710
CUSTOMER SERVICE: (718) 960-4710
TTY NUMBER: (718) 579-6903

EMERGENCY OPERATIONS CENTER (EOC)
TEL: (212) 393-2127

FIRE DEPARTMENT GENERAL NUMBER (718) 999-2000

MH (212) 570-4300

DEPARTMENT OF TRANSPORTATION (QUEENS)
BOROUGH COMMISSIONER NICOLE GARCIA
TEL. (212) 839-2510

NEW YORK POLICE DEPARTMENT:
110TH PRECINCT
ADDRESS: 9441 43RD AVE ELMHURST, NY 11373
PHONE: (718) 476-9311

FIRE PREVENTION NOTES:

1. A HYDRANT IS LOCATED 67'-0" TO THE EAST OF THE PROPERTY LINE ALONG EAST 150 STREET.

2. ALL MEANS OF EGRESS MUST BE CLEARED OF DEBRIS AT ALL TIME AND SIGNALED.

3. EXTINGUISHERS MUST BE PROVIDED ON EACH FLOOR

4. SMOKING IS PROHIBITED AT ALL TIMES.

STRUCTURAL STABILITY INSPECTION PROGRAM:

1. E.O.R WILL PERFORM AT LEAST THREE STRUCTURAL STABILITY INSPECTIONS (BEFORE AND DURING DEMOLITION OPERATIONS AND AFTER WORK HAS BEEN COMPLETED).

2. CONTRACTOR MUST INFORM E.O.R OF ANY POTENTIAL CHANGE TO THE SEQUENCE OF WORK PROPOSED ON PLANS DUE TO UNCOVERED SITE CONDITIONS. E.O.R SHOULD VISIT THE SITE TO ASSESS POSSIBLE IMPACT TO STRUCTURAL STABILITY OF BUILDINGS.

3. IF DURING DEMOLITION OPERATIONS CONTRACTOR ENCOUNTERS BUILDING ELEMENTS (FROM BUILDING BEING DEMOLISHED OR FROM ADJACENT BUILDINGS) THAT ARE IN DETERIORATED OR IN POOR CONDITION HE/SHE MUST NOTIFY THE E.O.R.. THE E.O.R SHOULD ASSESS ANY IMPACT TO STRUCTURAL STABILITY/SAFETY BEFORE THE CONTRACTOR IS ALLOWED TO RESUME DEMOLITION AT/NEAR THOSE AREAS.

DEBRIS REMOVAL & DUST CONTROL PROCEDURE:

1. WOOD OR ANY OTHER CONSTRUCTION DEBRIS SHOULD BE CARRIED OUT USING HAND HELD DEVICES ON ALL FLOORS ABOVE GROUND LEVEL.

2. DUST PRODUCING OPERATIONS MUST BE WETTED DOWN TO THE REQUIRED AMOUNT NEEDED TO CONTROL THE DUST. CONTRACTOR MUST OBTAIN A PERMIT FROM D.E.P. IF WATER FROM THE HYDRANT WILL BE USED FOR DUST CONTROL OPERATIONS.

3. DEBRIS AND DEMO MATERIAL MUST BE REMOVED BY MEANS OF CHUTE OR BUCKET., FOR REMOVAL OF CONSTRUCTION DEBRIS USE ½ CUBIC YARD CONTAINER AS INDICATED ON SAFETY ZONE PLAN DM-102. ALL CHUTES SPECIFIED ARE TO BE 3'-0"Ø DURACHUTE #300 PLASTIC OR EQUAL DEBRIS CHUTE. REFER TO MANUFACTURER SPECIFICATIONS FOR INSTALLATION.

4. ALL ½ CUBIC YARD CONTAINERS USED ARE TO BE FILLED FLUSH TO THE TOP OF THE CONTAINER ONLY. NO MORE THAN ONE CONTAINER IS TO BE USED ON ANY FLOOR AT ONE TIME. THE MAX DEBRIS SIZE THAT CAN BE PLACED IN THE CONTAINER SHALL NOT EXCEED 12"X12"X12"AND SHALL BE EXCLUDED TO MASONRY AND TIMBER MATERIAL FROM ON SITE DEMOLITION DEBRIS ONLY.

5. DEBRIS SHALL BE CLEANED OFF FROM FLOORS, BACKYARDS, SIDEWALKS SHEDS AND STREETS ON A DAILY BASIS. AN INSPECTION SHALL BE MADE DAILY FOR DEMOLITION DEBRIS ON ALL FLOORS.

6. DEBRIS STOCKPILE CAN NOT EXCEED 8" IN HEIGHT IN THE VICINITY OF WALLS BEEN REMOVED.

7. DEBRIS BOXES, POWER BUGGIES, WASTE DUMPSTER CAN BE USED TO COLLECT DEBRIS FROM BUCKET MEANS ON GROUND ONLY.

8. APPROVED BOBCAT WILL BE USED ON GROUND ONLY TO REMOVE DEBRIS &TRUCK LOADING OPERATIONS.

9. APPROVED HYDRAULIC EXCAVATOR WILL BE USED ON GROUND ONLY TO REMOVE DEBRIS & TRUCK LOADING OPERATIONS.

RELATED JOB FILLINGS	JOB NUMBERS
FENCE APPLICATION	PENDING
SHED APPLICATION	PENDING

CONTRACTOR / OWNER

MUST NOTIFY THE EOR. AND THE SPECIAL INSPECTOR AT LEAST 48 HOURS PRIOR TO BEGINING OF DEMOLITION OPERATIONS.

DOB STAMP HERE

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE,
BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

GENERAL NOTES

NYC DOB JOB NUMBER:

DM-220680895

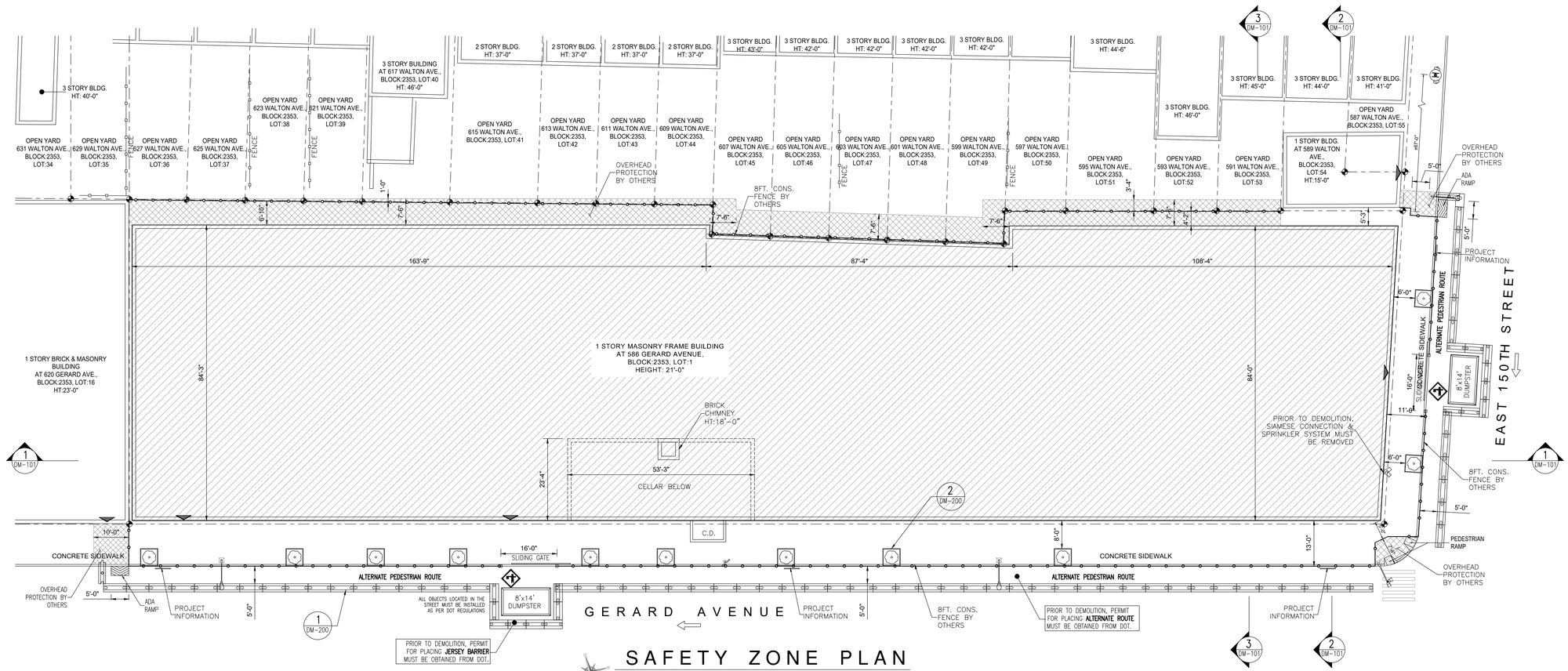
NYC DOB STICKER HERE

SEAL & SIGNATURE

STATE OF NEW YORK · SANTIAGO E. HELMAN · 087797 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-002.00

Sheet 2 | 20



SAFETY ZONE PLAN

SCALE: 1/16" = 1'-0"

SAFETY HARNESS DETAILS

PERSONNEL SAFETY NOTES:

1 . ALL PERSONNEL WORKING ON SCAFFOLD OR OPEN FLOORS AND HAND TOOL REMOVING WOOD OR STEEL JOIST MUST BE TIED UP TO COLUMNS USING A HARNESS.

2 . CONTRACTOR SHALL IMPLEMENT CONVENTIONAL FALL PROTECTION SYSTEMS FOR WORKERS ACCORDING TO OSHA REQUIREMENTS.

NOTE:

1. NECESSARY ACCESS AGREEMENTS MUST BE OBTAINED PRIOR TO INSTALLATION OF REQUIRED PROTECTION BEYOND THE PROPERTY LINES.

2. ACCESS AGREEMENTS MUST BE KEPT AVAILABLE ON THE JOB SITE FOR THE DURATION OF THE JOB.

3. FENCE & SHED APPLICATIONS ARE TO BE FILED SEPARATELY.

WATCHPERSON NOTE:

1. CONTRACTOR TO PROVIDE A COMPETENT WATCH PERSON TO BE ON DUTY AT THE SITE DURING ALL HOURS WHEN DEMOLITION OPERATION IS NOT IN PROGRESS.

2. THE WATCHPERSON SHALL BE FAMILIAR WITH EMERGENCY NOTIFICATION PROCEDURES TO THE FIRE DEPARTMENT, SHALL POSSESS A VALID SECURITY GUARD REGISTRATION WITH THE STATE OF NEW YORK, SHALL HOLD A VALID GUARD CERTIFICATE FROM THE FIRE DEPARTMENT, AND FOR A MAJOR BUILDING SHALL HAVE COMPLETED THE TRAINING REQUIRED BY NYC CODE SECTION 3310.10.

AREA=29,827 SQ.FT.

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

SAFETY ZONE PLAN

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

DOB STAMP HERE

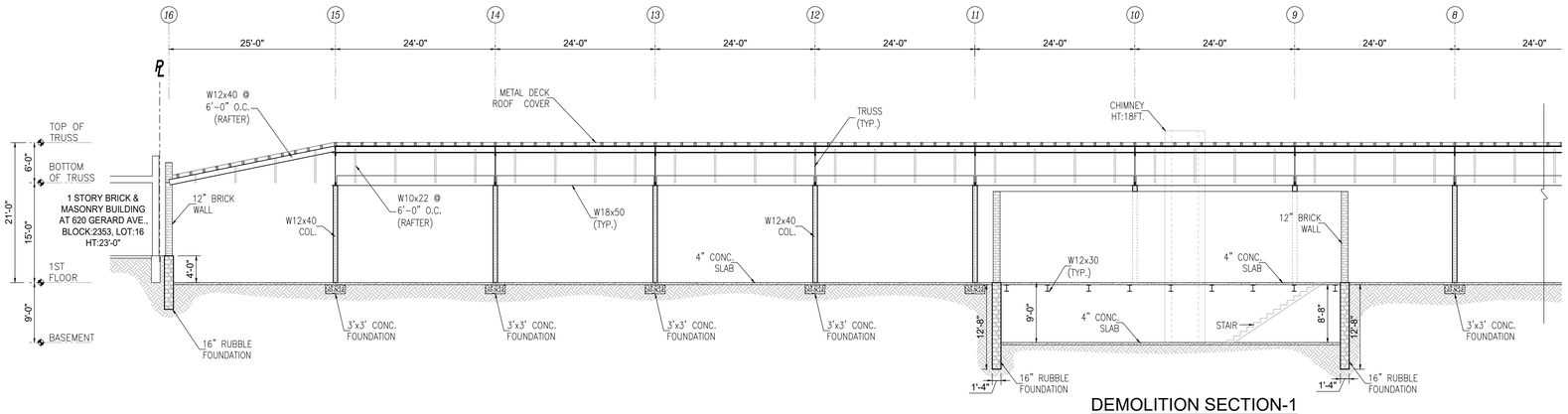
SEAL & SIGNATURE

STATE OF NEW YORK · DAVID E. HUANG · 087796 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-100.00

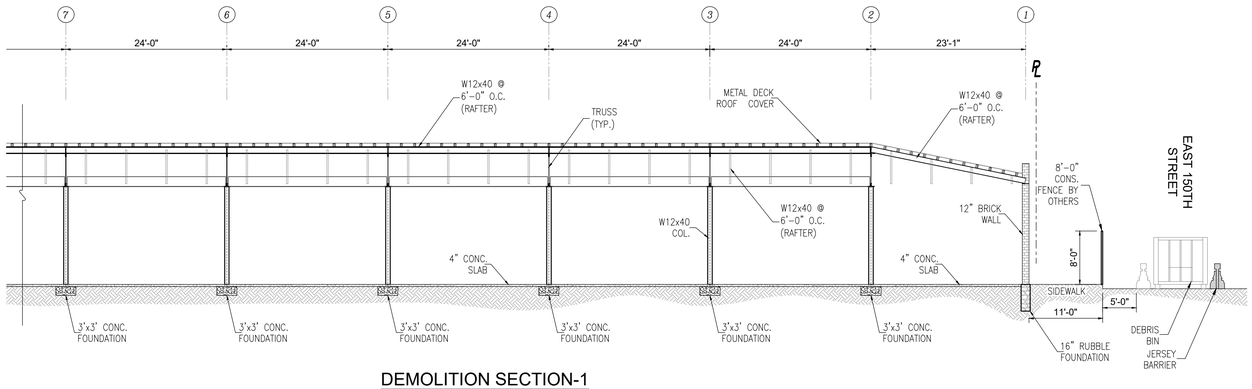
Sheet 3 | 20

1 STORY MASONRY FRAME BUILDING
AT 586 GERARD AVENUE,
BLOCK:2353, LOT:1
HEIGHT: 21'-0"



DEMOLITION SECTION-1

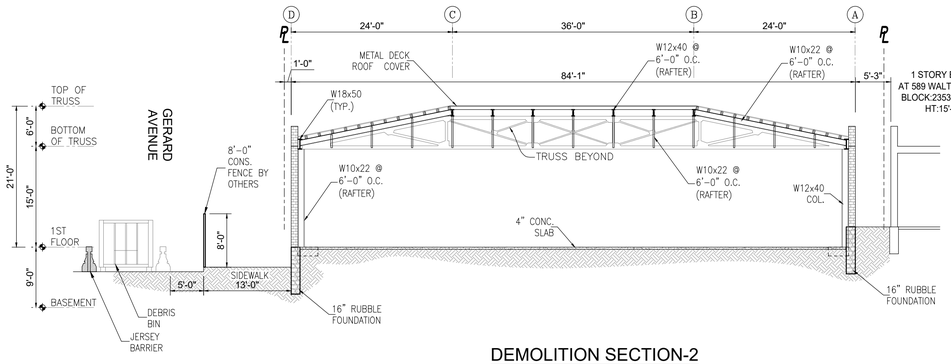
SCALE: 3/32"= 1'-0"



DEMOLITION SECTION-1

SCALE: 3/32"= 1'-0"

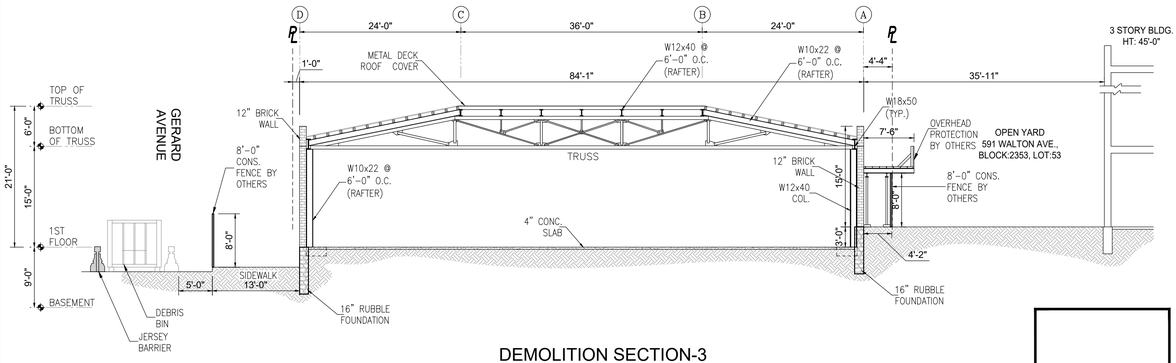
1 STORY MASONRY FRAME BUILDING
AT 586 GERARD AVENUE,
BLOCK:2353, LOT:1
HEIGHT: 21'-0"



DEMOLITION SECTION-2

SCALE: 3/32"= 1'-0"

1 STORY MASONRY FRAME BUILDING
AT 586 GERARD AVENUE,
BLOCK:2353, LOT:1
HEIGHT: 21'-0"



DEMOLITION SECTION-3

SCALE: 3/32"= 1'-0"

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE,
BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

DEMOLITION SECTIONS

NYC DOB JOB NUMBER:

DM-220680895

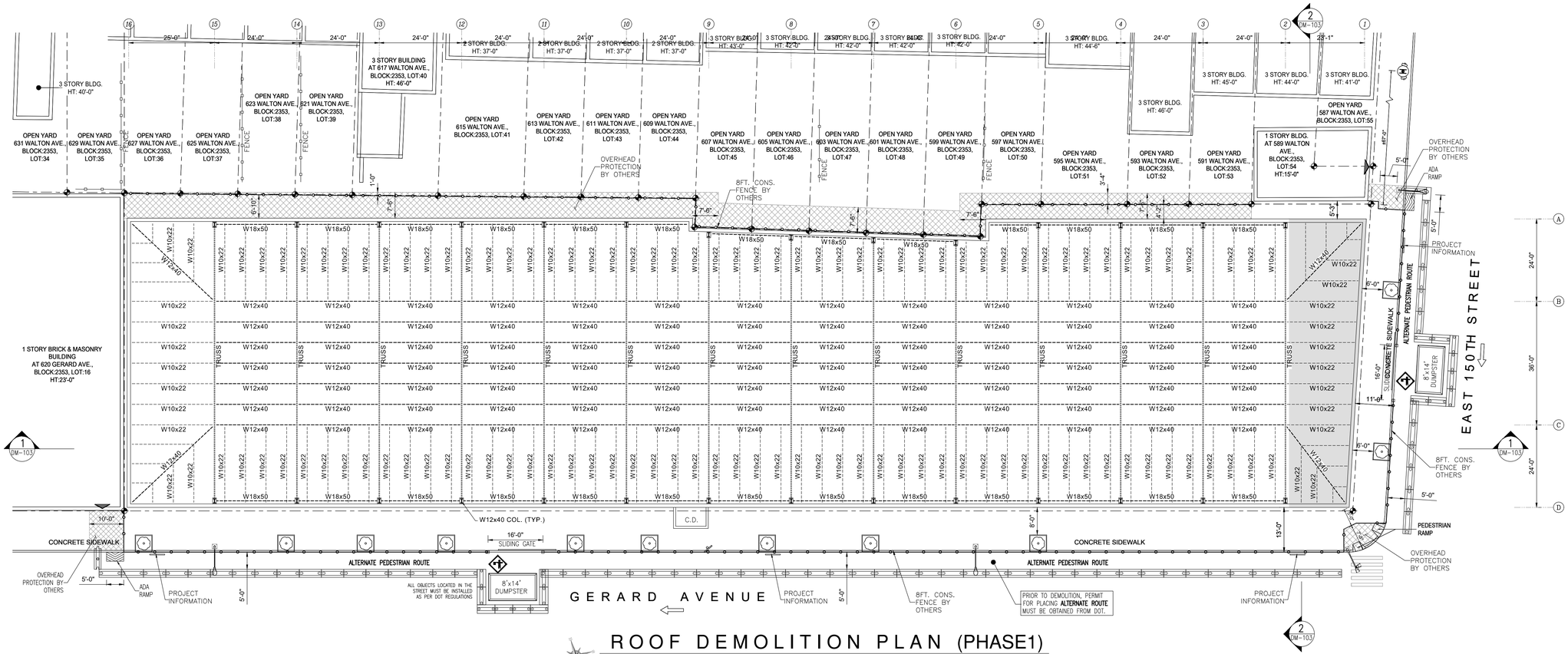
NYC DOB STICKER HERE

DOB STAMP HERE

SEAL & SIGNATURE

STATE OF NEW YORK · SANTIAGO E. HELMAN · LICENSED PROFESSIONAL ENGINEER · 087791

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-101.00



ROOF DEMOLITION PLAN (PHASE1)

SCALE: 1/16" = 1'-0"

SEQUENCE OF DEMOLITION:

PREPARATION WORK:

1. INSTALL PROTECTIONS AS SHOWN ON SAFETY ZONE PLAN ON DM-100.00
2. ACCESS AGREEMENT MUST BE OBTAINED IN ORDER TO INSTALL PROTECTIONS IN NEIGHBOR'S AREAS AS REQUIRED.
3. ALL MEANS OF EGRESS SHOULD BE CLEARED OF ANY OBSTRUCTION DEBRIS AT ALL TIMES.
4. THE DEMOLITION CONTRACTOR MUST REMOVE ALL HAZARDS SUCH AS DOORS, WINDOWS ETC PRIOR TO COMMENCEMENT OF DEMOLITION.
5. FIXTURES, CABINETS, CLOSETS, ETC MUST BE REMOVED PRIOR TO DEMOLITION WORK.
6. ALL ROOFING MATERIALS MUST BE HAND TOOL REMOVED. ALL GUTTERS LEADERS, WEATHERPROOFING AND SHEATHING MATERIAL, METAL FLASHING AND COUNTER-FLASHING MUST BE REMOVED BY HAND.
7. ASBESTOS ABATEMENT IF REQUIRED MUST BE PERFORMED PRIOR TO COMMENCEMENT OF DEMOLITION OPERATIONS.

STEP-"A": DEMOLITION OF ROOF: PHASE-1

A.0 FROM FRONT TO BACK HAND TOOL REMOVE PARAPET.
A.1 HAND TOOL REMOVE ALL ROOF METAL DECK ROOF.
A.2 HAND TOOL REMOVE BEARING WALL AT G.L. "1" BETWEEN G.L. "A" & "A1" DOWN TO GRADE LEVEL.
A.2.1 45° DIAG. SLOPE IS TO ASSURE THE STABILITY OF THE REMAINING PORTION OF WALL.
A.2.2 CONTRACTOR TO KEEP 2FT. OF BRICK WALL SUPPORTING STEEL BEAM TO AVOID SUDDEN COLLAPSE.
A.3 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL BEAM AT G.L. "A1".
A.3.1 TIE UP THE BEAM.
A.3.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 3 ON DM-200.
A.3.3 BRING DOWN THE BEAM TO GRADE LEVEL.
A.4 REPEAT STEPS A.2 & A.3 TO REMOVE BEARING WALLS & STEEL BEAMS UNTIL DEMOLITION REACHES G.L. "B".
A.5 FOLLOWING PROCEDURES IN STEP A.3, REMOVE STEEL BEAM AT G.L. B1 BETWEEN G.L. "1" & "2" DOWN TO GRADE LEVEL.
A.6 HAND TOOL REMOVE BEARING WALL AT G.L. "1" BETWEEN G.L. "B" & "B1" DOWN TO GRADE LEVEL.
A.6.1 45° DIAG. SLOPE IS TO ASSURE THE STABILITY OF THE REMAINING PORTION OF WALL.
A.6.2 CONTRACTOR TO KEEP 2FT. OF BRICK WALL SUPPORTING STEEL BEAM TO AVOID SUDDEN COLLAPSE.
A.7 REPEAT STEPS A.5 & A.6 TO REMOVE BEARING WALLS & STEEL BEAMS UNTIL DEMOLITION REACHES G.L. "C".
A.8 REPEAT STEPS A.2 TO A.4 TO REMOVE BEARING WALLS & STEEL BEAMS AT G.L. "C" & D".
A.9 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL BEAMS, ONE BEAM AT A TIME AT BETWEEN G.L. "C" & "D" AND BETWEEN G.L. "1" & "2" DOWN TO GRADE LEVEL.
A.9.1 TIE UP THE BEAM.
A.9.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 3 ON DM-200.
A.9.3 BRING DOWN THE BEAM TO GRADE LEVEL.
A.9.4 REPEAT STEPS A.9.1 TO A.9.3 TO REMOVE NEXT STEEL BEAM.
A.10 HAND TOOL REMOVE BEARING WALL AT G.L. "D" BETWEEN G.L. "1" & "2" DOWN TO GRADE LEVEL.
A.10.1 45° DIAG. SLOPE IS TO ASSURE THE STABILITY OF THE REMAINING PORTION OF WALL.
A.10.2 CONTRACTOR TO KEEP 2FT. OF BRICK WALL SUPPORTING STEEL BEAM TO AVOID SUDDEN COLLAPSE.
A.11 REPEAT STEPS A.9 & A.10 TO REMOVE REMAINING BEARING WALLS & STEEL BEAMS BETWEEN G.L. "A" & "B" AND BETWEEN G.L. "1" & "2" DOWN TO GRADE LEVEL.

NOTE:
BY CHAPTER 14, FIRE CODE SAFETY DURING CONSTRUCTION AND DEMOLITION.
SECT. 1404.5 WHEN REQUIRED BY THE FIRE CODE OFFICIAL FOR BUILDING DEMOLITION THAT IS HAZARDOUS IN NATURE, QUALIFIED PERSONNEL SHALL BE PROVIDE TO SERVE AS AN ON-SITE FIRE WATCH. FIRE WATCH PERSONNEL SHALL BE PROVIDE WITH AT LEAST ONE APPROVED MEANS FOR NOTIFICATION OF THE FIRE DEPARTMENT AND THEIR SOLE DUTY SHALL BE PERFORM CONSTANT PATROL AND WATCH FOR THE OCCURENCE OF FIRE.

LEGEND:
- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER
SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER
ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS
586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 LOT: 1
BIN #: 2001115 ZONING MAP: 16A

SHEET TITLE
ROOF DEMOLITION PLAN - PHASE 1

NYC DOB JOB NUMBER:
DM-220680895

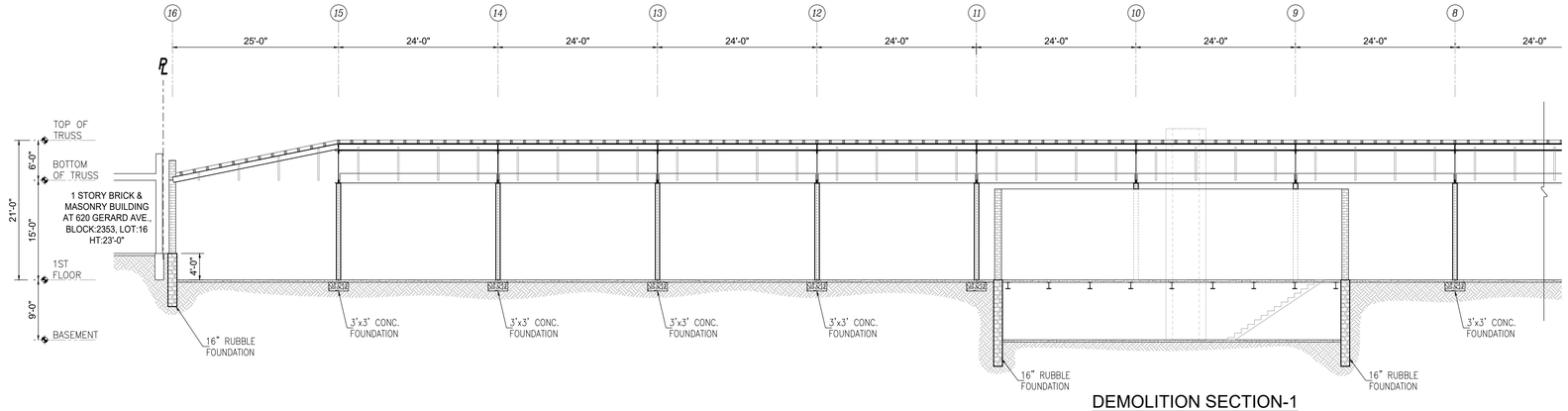
NYC DOB STICKER HERE

DOB STAMP HERE

SEAL & SIGNATURE

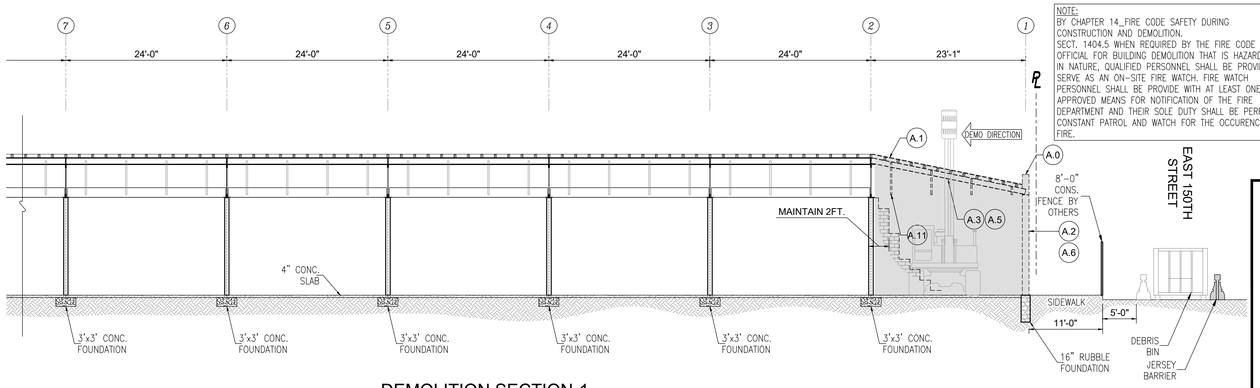
DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-102.00

1 STORY MASONRY FRAME BUILDING
AT 586 GERARD AVENUE,
BLOCK:2353, LOT:1
HEIGHT: 21'-0"



DEMOLITION SECTION-1

SCALE: 3/32"= 1'-0"

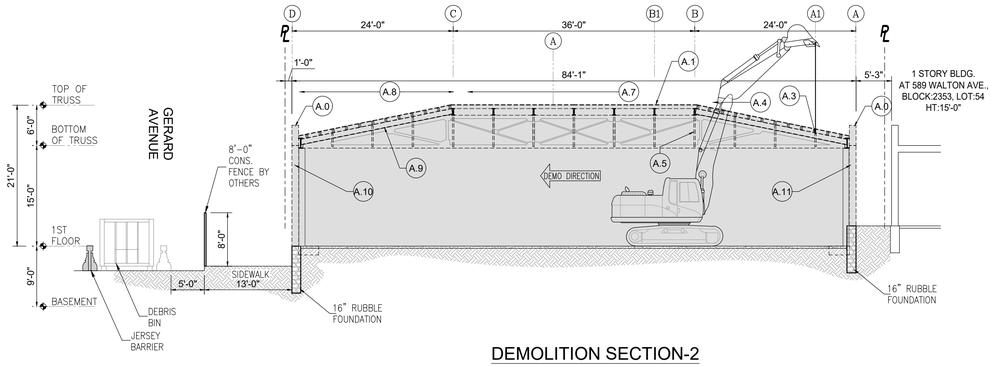


NOTE:
BY CHAPTER 14_FIRE CODE SAFETY DURING CONSTRUCTION AND DEMOLITION.
SECT. 1404.5 WHEN REQUIRED BY THE FIRE CODE OFFICIAL FOR BUILDING DEMOLITION THAT IS HAZARDOUS IN NATURE, QUALIFIED PERSONNEL SHALL BE PROVIDE TO SERVE AS AN ON-SITE FIRE WATCH. FIRE WATCH PERSONNEL SHALL BE PROVIDE WITH AT LEAST ONE APPROVED MEANS FOR NOTIFICATION OF THE FIRE DEPARTMENT AND THEIR SOLE DUTY SHALL BE PERFORM CONSTANT PATROL AND WATCH FOR THE OCCURENCE OF FIRE.

DEMOLITION SECTION-1

SCALE: 3/32"= 1'-0"

1 STORY MASONRY FRAME BUILDING
AT 586 GERARD AVENUE,
BLOCK:2353, LOT:1
HEIGHT: 21'-0"



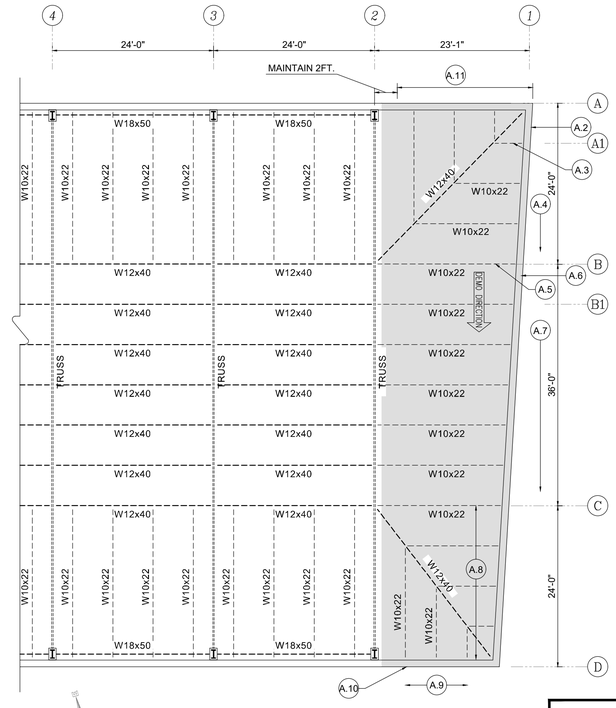
DEMOLITION SECTION-2

SCALE: 3/32"= 1'-0"

STEP-"A": DEMOLITION OF ROOF: PHASE-1

A.0 FROM FRONT TO BACK HAND TOOL REMOVE PARAPET.
A.1 HAND TOOL REMOVE ALL ROOF METAL DECK ROOF.
A.2 HAND TOOL REMOVE BEARING WALL AT G.L. "1" BETWEEN G.L. "A" & "A1" DOWN TO GRADE LEVEL.
A.2.1 45° DIAG. SLOPE IS TO ASSURE THE STABILITY OF THE REMAINING PORTION OF WALL.
A.2.2 CONTRACTOR TO KEEP 2FT. OF BRICK WALL SUPPORTING STEEL BEAM TO AVOID SUDDEN COLLAPSE.
A.3 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL BEAM AT G.L. "A1".
A.3.1 TIE UP THE BEAM.
A.3.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 3 ON DM-200.
A.3.3 BRING DOWN THE BEAM TO GRADE LEVEL.
A.4 REPEAT STEPS A.2 & A.3 TO REMOVE BEARING WALLS & STEEL BEAMS UNTIL DEMOLITION REACHES G.L. "B".
A.5 FOLLOWING PROCEDURES IN STEP A.3, REMOVE STEEL BEAM AT G.L. B1 BETWEEN G.L. "1" & "2" DOWN TO GRADE LEVEL.
A.6 HAND TOOL REMOVE BEARING WALL AT G.L. "1" BETWEEN G.L. "B" & "B1" DOWN TO GRADE LEVEL.
A.6.1 45° DIAG. SLOPE IS TO ASSURE THE STABILITY OF THE REMAINING PORTION OF WALL.
A.6.2 CONTRACTOR TO KEEP 2FT. OF BRICK WALL SUPPORTING STEEL BEAM TO AVOID SUDDEN COLLAPSE.
A.7 REPEAT STEPS A.5 & A.6 TO REMOVE BEARING WALLS & STEEL BEAMS UNTIL DEMOLITION REACHES G.L. "C".
A.8 REPEAT STEPS A.2 TO A.4 TO REMOVE BEARING WALLS & STEEL BEAMS AT G.L. "C" & D".
A.9 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL BEAMS, ONE BEAM AT A TIME AT BETWEEN G.L. "C" & "D" AND BETWEEN G.L. "1" & "2" DOWN TO GRADE LEVEL.
A.9.1 TIE UP THE BEAM.
A.9.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 3 ON DM-200.
A.9.3 BRING DOWN THE BEAM TO GRADE LEVEL.
A.9.4 REPEAT STEPS A.9.1 TO A.9.3 TO REMOVE NEXT STEEL BEAM.
A.10 HAND TOOL REMOVE BEARING WALL AT G.L. "D" BETWEEN G.L. "1" & "2" DOWN TO GRADE LEVEL.
A.10.1 45° DIAG. SLOPE IS TO ASSURE THE STABILITY OF THE REMAINING PORTION OF WALL.
A.10.2 CONTRACTOR TO KEEP 2FT. OF BRICK WALL SUPPORTING STEEL BEAM TO AVOID SUDDEN COLLAPSE.
A.11 REPEAT STEPS A.9 & A.10 TO REMOVE REMAINING BEARING WALLS & STEEL BEAMS BETWEEN G.L. "A" & "B" AND BETWEEN G.L. "1" & "2" DOWN TO GRADE LEVEL.

NOTE:
BY CHAPTER 14_FIRE CODE SAFETY DURING CONSTRUCTION AND DEMOLITION.
SECT. 1404.5 WHEN REQUIRED BY THE FIRE CODE OFFICIAL FOR BUILDING DEMOLITION THAT IS HAZARDOUS IN NATURE, QUALIFIED PERSONNEL SHALL BE PROVIDE TO SERVE AS AN ON-SITE FIRE WATCH. FIRE WATCH PERSONNEL SHALL BE PROVIDE WITH AT LEAST ONE APPROVED MEANS FOR NOTIFICATION OF THE FIRE DEPARTMENT AND THEIR SOLE DUTY SHALL BE PERFORM CONSTANT PATROL AND WATCH FOR THE OCCURENCE OF FIRE.



ROOF DEMOLITION SEQUENCE PLAN

SCALE: 3/32" = 1'-0"

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE,
BRONX, NY 10451

BLOCK: 2353 LOT: 1

BIN #: 2001115 ZONING MAP: 16A

SHEET TITLE

DEMOLITION SECTIONS

NYC DOB JOB NUMBER:

DM-220680895

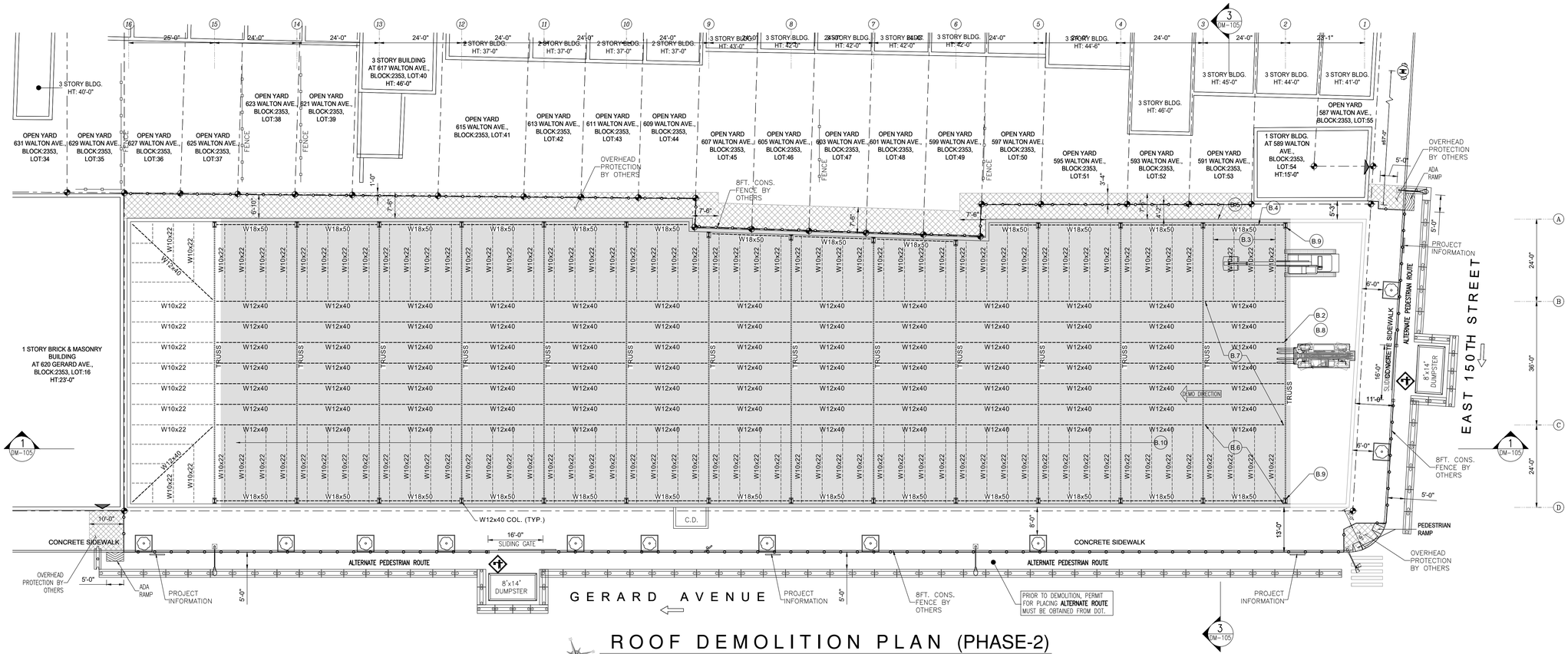
NYC DOB STICKER HERE

DOB STAMP HERE

SEAL & SIGNATURE

STATE OF NEW YORK · SANTIAGO E. HELMAN · 087701 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-103.00



ROOF DEMOLITION PLAN (PHASE-2)

SCALE: 1/16" = 1'-0"

STEP-"B": DEMOLITION OF ROOF: PHASE-2

B.0 FROM FRONT TO BACK HAND TOOL REMOVE PARAPET & LOWER THE CHIMNEY DOWN TO GRADE LEVEL.
B.1 HAND TOOL REMOVE ALL ROOF METAL DECK ROOF.
B.2 ASSISTED WITH FORK LIFT, TIE THE 1ST TRUSS AT G.L. "2".
B.3 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL BEAMS, ONE BEAM AT A TIME AT BETWEEN G.L. "A" & "B" AND BETWEEN G.L. "2" & "3" DOWN TO GRADE LEVEL.
- B.3.1 TIE UP THE BEAM.
- B.3.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 3 ON DM-200.
- B.3.3 BRING DOWN THE BEAM TO GRADE LEVEL.
- B.3.4 REPEAT STEPS B.3.1 TO B.3.3 TO REMOVE NEXT STEEL BEAM.

B.4 FOLLOWING PROCEDURE AT STEP B.2, ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL BEAM AT G.L. "A" BETWEEN G.L. "2" & "3".
B.5 HAND TOOL REMOVE BEARING WALL AT G.L. "A" BETWEEN G.L. "2" & "3" DOWN TO GRADE LEVEL.
- B.5.1 45° DIAG. SLOPE IS TO ASSURE THE STABILITY OF THE REMAINING PORTION OF WALL.
- B.5.2 CONTRACTOR TO KEEP 2FT. OF BRICK WALL SUPPORTING STEEL BEAM TO AVOID SUDDEN COLLAPSE.

B.6 REPEAT STEPS B.3 TO B.5 TO REMOVE STEEL BEAMS & REMOVE BEARING WALLS & STEEL BEAMS BETWEEN G.L. "C" & "D" AND BETWEEN G.L. "2" & "3" DOWN TO GRADE LEVEL.
B.7 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL BEAMS, ONE BEAM AT A TIME AT BETWEEN G.L. "B" & "C" AND BETWEEN G.L. "2" & "3" DOWN TO GRADE LEVEL.
- B.7.1 TIE UP THE BEAM.
- B.7.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 3 ON DM-200.
- B.7.3 BRING DOWN THE BEAM TO GRADE LEVEL.
- B.7.4 REPEAT STEPS B.7.1 TO B.7.3 TO REMOVE NEXT STEEL BEAM.

B.8 ASSISTED WITH FORK LIFT, LOWER THE 1ST TRUSS AT G.L. "2" DOWN TO GRADE LEVEL.
- B.8.1 TIE UP THE TRUSS.
- B.8.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 4 ON DM-200.
- B.8.3 BRING DOWN THE BEAM TO GRADE LEVEL.

B.9 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL COLUMNS, ONE COLUMN AT A TIME AT G.L. "2" DOWN TO GRADE LEVEL.
- B.9.1 TIE UP THE COLUMN.
- B.9.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 5 ON DM-200.
- B.9.3 BRING DOWN THE COLUMN TO GRADE LEVEL.
- B.9.4 REPEAT STEPS B.9.1 TO B.9.3 TO REMOVE NEXT STEEL COLUMN.

B.10 STEPS B.2 TO B.9 TO REMOVE STEEL BEAMS, WALLS & TRUSSES UNTIL DEMOLITION REACHES G.L. "15".

NOTE:
BY CHAPTER 14_FIRE CODE SAFETY DURING CONSTRUCTION AND DEMOLITION:
SECT. 1404.5 WHEN REQUIRED BY THE FIRE CODE OFFICIAL FOR BUILDING DEMOLITION THAT IS HAZARDOUS IN NATURE, QUALIFIED PERSONNEL SHALL BE PROVIDE TO SERVE AS AN ON-SITE FIRE WATCH. FIRE WATCH PERSONNEL SHALL BE PROVIDE WITH AT LEAST ONE APPROVED MEANS FOR NOTIFICATION OF THE FIRE DEPARTMENT AND THEIR SOLE DUTY SHALL BE PERFORM CONSTANT PATROL AND WATCH FOR THE OCCURENCE OF FIRE.

LEGEND:
- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER
SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER
H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS
586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 LOT: 1
BIN #: 2001115 ZONING MAP: 16A

SHEET TITLE
ROOF DEMOLITION PLAN - PHASE 2

NYC DOB JOB NUMBER:
DM-220680895

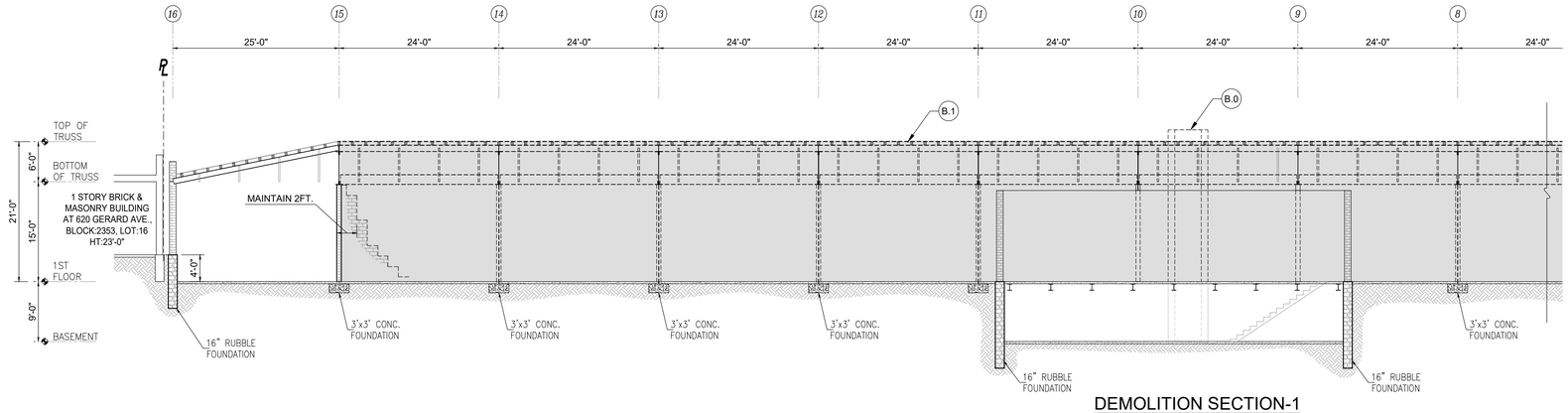
NYC DOB STICKER HERE

DOB STAMP HERE

SEAL & SIGNATURE
STATE OF NEW YORK — DOMINGO E. NEIRA — 085708 — LICENSED PROFESSIONAL ENGINEER

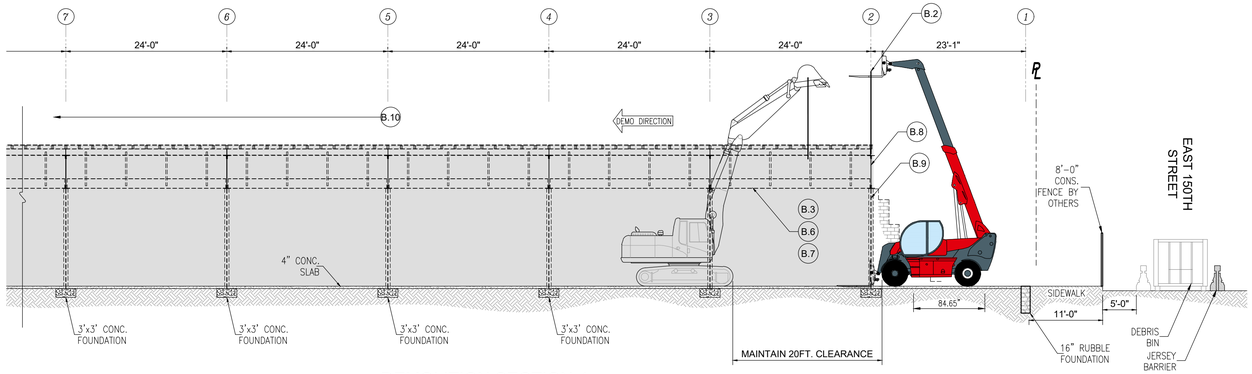
DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-104.00

1 STORY MASONRY FRAME BUILDING
AT 586 GERARD AVENUE,
BLOCK:2353, LOT:1
HEIGHT: 21'-0"



DEMOLITION SECTION-1

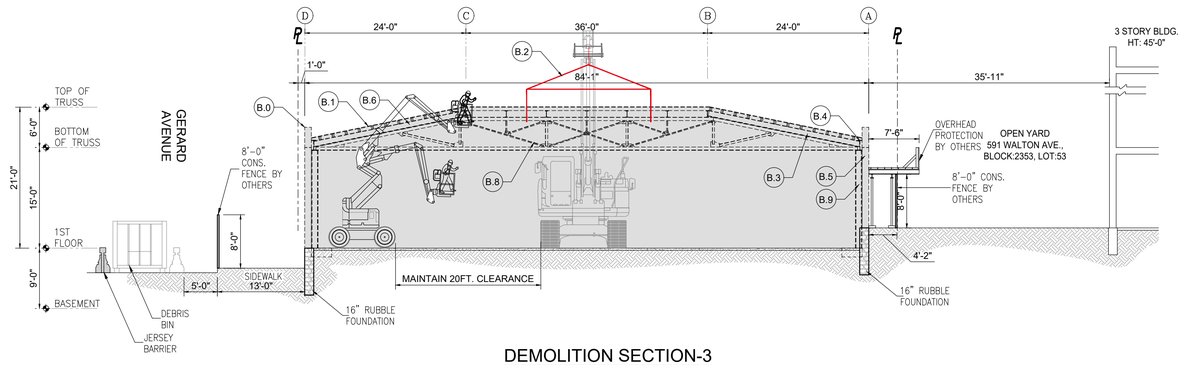
SCALE: 3/32"= 1'-0"



DEMOLITION SECTION-1

SCALE: 3/32"= 1'-0"

1 STORY MASONRY FRAME BUILDING
AT 586 GERARD AVENUE,
BLOCK:2353, LOT:1
HEIGHT: 21'-0"



DEMOLITION SECTION-3

SCALE: 3/32"= 1'-0"

STEP-"B": DEMOLITION OF ROOF: PHASE-2

B.0 FROM FRONT TO BACK HAND TOOL REMOVE PARAPET & LOWER THE CHIMNEY DOWN TO GRADE LEVEL.
B.1 HAND TOOL REMOVE ALL ROOF METAL DECK ROOF.
B.2 ASSISTED WITH FORK LIFT, TIE THE 1ST TRUSS AT G.L. "2".
B.3 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL BEAMS, ONE BEAM AT A TIME AT BETWEEN G.L. "A" & "B" AND BETWEEN G.L. "2" & "3" DOWN TO GRADE LEVEL.
B.3.1 TIE UP THE BEAM.
B.3.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 3 ON DM-200.
B.3.3 BRING DOWN THE BEAM TO GRADE LEVEL.
B.3.4 REPEAT STEPS B.3.1 TO B.3.3 TO REMOVE NEXT STEEL BEAM.
B.4 FOLLOWING PROCEDURE AT STEP B.2, ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL BEAM AT G.L. "A" BETWEEN G.L. "2" & "3".
B.5 HAND TOOL REMOVE BEARING WALL AT G.L. "A" BETWEEN G.L. "2" & "3" DOWN TO GRADE LEVEL.
B.5.1 45° DIAG. SLOPE IS TO ASSURE THE STABILITY OF THE REMAINING PORTION OF WALL.
B.5.2 CONTRACTOR TO KEEP 2FT. OF BRICK WALL SUPPORTING STEEL BEAM TO AVOID SUDDEN COLLAPSE.
B.6 REPEAT STEPS B.3 TO B.5 TO REMOVE STEEL BEAMS & REMOVE BEARING WALLS & STEEL BEAMS BETWEEN G.L. "C" & "D" AND BETWEEN G.L. "2" & "3" DOWN TO GRADE LEVEL.
B.7 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL BEAMS, ONE BEAM AT A TIME AT BETWEEN G.L. "B" & "C" AND BETWEEN G.L. "2" & "3" DOWN TO GRADE LEVEL.
B.7.1 TIE UP THE BEAM.
B.7.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 3 ON DM-200.
B.7.3 BRING DOWN THE BEAM TO GRADE LEVEL.
B.7.4 REPEAT STEPS B.7.1 TO B.7.3 TO REMOVE NEXT STEEL BEAM.
B.8 ASSISTED WITH FORK LIFT, LOWER THE 1ST TRUSS AT G.L. "2" DOWN TO GRADE LEVEL.
B.8.1 TIE UP THE TRUSS.
B.8.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 4 ON DM-200.
B.8.3 BRING DOWN THE BEAM TO GRADE LEVEL.
B.9 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL COLUMNS, ONE COLUMN AT A TIME AT G.L. "2" DOWN TO GRADE LEVEL.
B.9.1 TIE UP THE COLUMN.
B.9.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 5 ON DM-200.
B.9.3 BRING DOWN THE COLUMN TO GRADE LEVEL.
B.9.4 REPEAT STEPS B.9.1 TO B.9.3 TO REMOVE NEXT STEEL COLUMN.
B.10 STEPS B.2 TO B.9 TO REMOVE STEEL BEAMS, WALLS & TRUSSES UNTIL DEMOLITION REACHES G.L. "15".

NOTE:
BY CHAPTER 14, FIRE CODE SAFETY DURING CONSTRUCTION AND DEMOLITION.
SECT. 1404.5 WHEN REQUIRED BY THE FIRE CODE OFFICIAL FOR BUILDING DEMOLITION THAT IS HAZARDOUS IN NATURE, QUALIFIED PERSONNEL SHALL BE PROVIDE TO SERVE AS AN ON-SITE FIRE WATCH. FIRE WATCH PERSONNEL SHALL BE PROVIDE WITH AT LEAST ONE APPROVED MEANS FOR NOTIFICATION OF THE FIRE DEPARTMENT AND THEIR SOLE DUTY SHALL BE PERFORM CONSTANT PATROL AND WATCH FOR THE OCCURENCE OF FIRE.

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE,
BRONX, NY 10451

BLOCK: 2353 LOT: 1

BIN #: 2001115 ZONING MAP: 16A

SHEET TITLE

DEMOLITION SECTIONS

NYC DOB JOB NUMBER:

DM-220680895

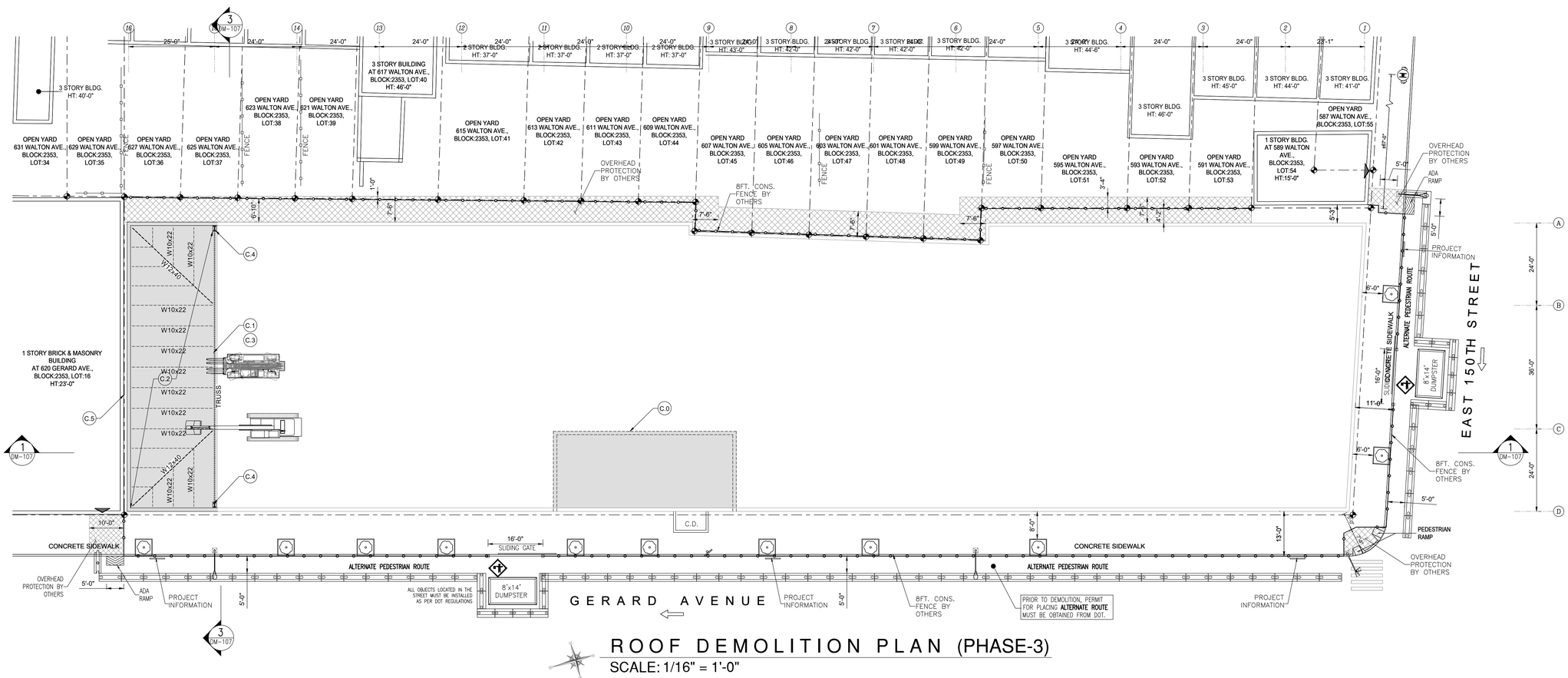
NYC DOB STICKER HERE

DOB STAMP HERE

SEAL & SIGNATURE

STATE OF NEW YORK · DOMINGO E. HUMAN · 087796 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-105.00



ROOF DEMOLITION PLAN (PHASE-3)

SCALE: 1/16" = 1'-0"

STEP-"C": DEMOLITION OF ROOF: PHASE-3

C.0 HAND TOOL REMOVE ALL NON-BEARING WALL DOWN TO GRADE LEVEL.
C.1 ASSISTED WITH FORK LIFT, TIE THE LAST TRUSS AT G.L. "15".
C.2 FOLLOWING PROCEDURES IN STEP "A" AT PHASE-1, REMOVE ALL REMAINING STEEL BEAMS & WALLS BETWEEN G.L. "A" TO "D" AND BETWEEN G.L. "15" & "16" DOWN TO GRADE LEVEL.
C.3 ASSISTED WITH FORK LIFT, LOWER THE 1ST TRUSS AT G.L. "2" DOWN TO GRADE LEVEL.
  C.3.1 TIE UP THE TRUSS.
  C.3.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 4 ON DM-200.
  C.3.3 BRING DOWN THE BEAM TO GRADE LEVEL.
C.4 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL COLUMNS, ONE COLUMN AT A TIME AT G.L. "15" DOWN TO GRADE LEVEL.
  C.4.1 TIE UP THE COLUMN.
  C.4.2 TORCH CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 5 ON DM-200.
  C.4.3 BRING DOWN THE COLUMN TO GRADE LEVEL.
  C.4.4 REPEAT STEPS C.4.1 TO C.4.3 TO REMOVE NEXT STEEL COLUMN.
C.5 PARGE & WEATHER PROOF EXPOSED NEIGHBOR'S NORTH WALL AS PER DETAIL 6 ON DM-201.

NOTE:
BY CHAPTER 14_FIRE CODE SAFETY DURING CONSTRUCTION AND DEMOLITION.
SECT. 1404.5 WHEN REQUIRED BY THE FIRE CODE OFFICIAL FOR BUILDING DEMOLITION THAT IS HAZARDOUS IN NATURE, QUALIFIED PERSONNEL SHALL BE PROVIDE TO SERVE AS AN ON-SITE FIRE WATCH. FIRE WATCH PERSONNEL SHALL BE PROVIDE WITH AT LEAST ONE APPROVED MEANS FOR NOTIFICATION OF THE FIRE DEPARTMENT AND THEIR SOLE DUTY SHALL BE PERFORM CONSTANT PATROL AND WATCH FOR THE OCCURENCE OF FIRE.

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

ROOF DEMOLITION PLAN - PHASE 3

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

DOB STAMP HERE

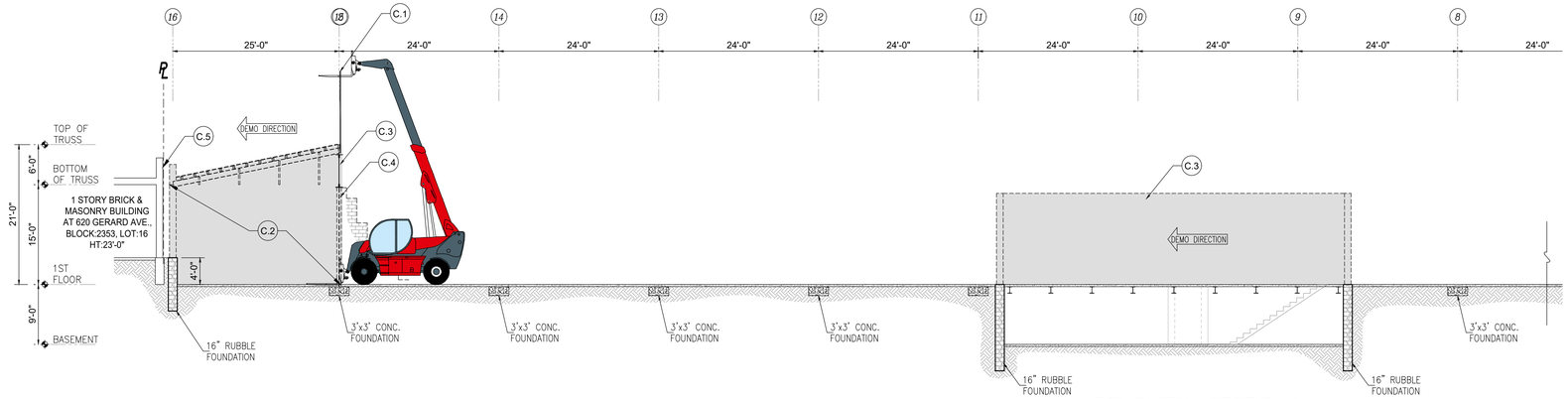
SEAL & SIGNATURE

STATE OF NEW YORK · SANTIAGO E. HELMAN · 085791 · LICENSED PROFESSIONAL ENGINEER

DATE: 9-03-2021
PROJECT No: 20-1918
DRAWN BY: MT
CHK BY: DH
DWG No: DM-106.00

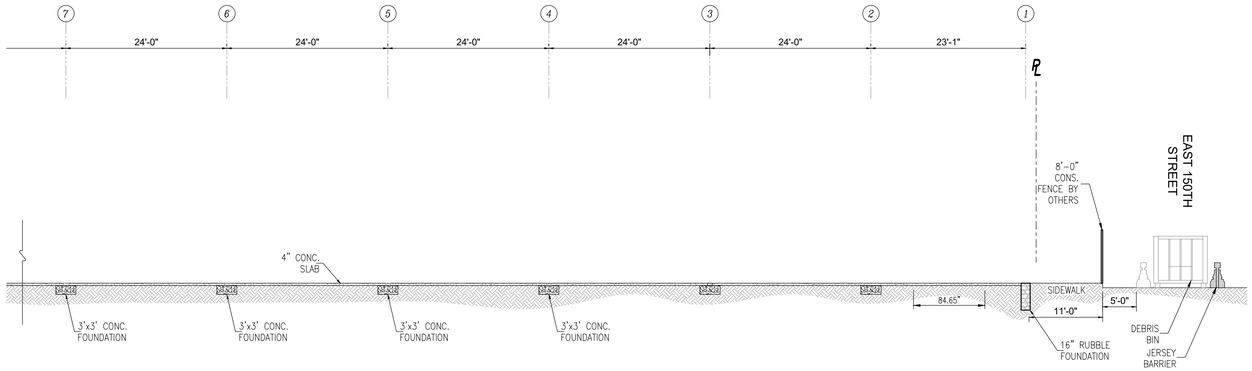
Sheet 9 | 20

1 STORY MASONRY FRAME BUILDING
AT 586 GERARD AVENUE,
BLOCK:2353, LOT:1
HEIGHT: 21'-0"



DEMOLITION SECTION-1

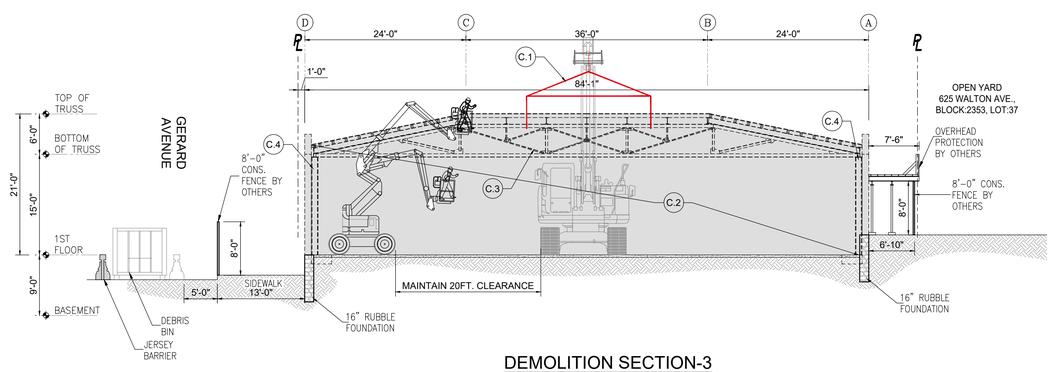
SCALE: 3/32"= 1'-0"



DEMOLITION SECTION-1

SCALE: 3/32"= 1'-0"

1 STORY MASONRY FRAME BUILDING
AT 586 GERARD AVENUE,
BLOCK:2353, LOT:1
HEIGHT: 21'-0"



DEMOLITION SECTION-3

SCALE: 3/32"= 1'-0"

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

STEP-"C": DEMOLITION OF ROOF: PHASE-3

C.0 HAND TOOL REMOVE ALL NON-BEARING WALL DOWN TO GRADE LEVEL.
C.1 ASSISTED WITH FORK LIFT, TIE THE LAST TRUSS AT G.L. "15".
C.2 FOLLOWING PROCEDURES IN STEP "A" AT PHASE-1, REMOVE ALL REMAINING STEEL BEAMS & WALLS BETWEEN G.L. "A" TO "D" AND BETWEEN G.L. "15" & "16" DOWN TO GRADE LEVEL.
C.3 ASSISTED WITH FORK LIFT, LOWER THE 1ST TRUSS AT G.L. "2" DOWN TO GRADE LEVEL.
 C.3.1 TIE UP THE TRUSS.
 C.3.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 4 ON DM-200.
 C.3.3 BRING DOWN THE BEAM TO GRADE LEVEL.
C.4 ASSISTED WITH EXCAVATOR, HAND TOOL REMOVE STEEL COLUMNS, ONE COLUMN AT A TIME AT G.L. "15" DOWN TO GRADE LEVEL.
 C.4.1 TIE UP THE COLUMN.
 C.4.2 TORCH CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 5 ON DM-200.
 C.4.3 BRING DOWN THE COLUMN TO GRADE LEVEL.
 C.4.4 REPEAT STEPS C.4.1 TO C.4.3 TO REMOVE NEXT STEEL COLUMN.
C.5 PARGE & WEATHER PROOF EXPOSED NEIGHBOR'S NORTH WALL AS PER DETAIL 6 ON DM-201.

NOTE:
BY CHAPTER 14, FIRE CODE SAFETY DURING CONSTRUCTION AND DEMOLITION.
SECT. 1404.5 WHEN REQUIRED BY THE FIRE CODE OFFICIAL FOR BUILDING DEMOLITION THAT IS HAZARDOUS IN NATURE, QUALIFIED PERSONNEL SHALL BE PROVIDE TO SERVE AS AN ON-SITE FIRE WATCH. FIRE WATCH PERSONNEL SHALL BE PROVIDE WITH AT LEAST ONE APPROVED MEANS FOR NOTIFICATION OF THE FIRE DEPARTMENT AND THEIR SOLE DUTY SHALL BE PERFORM CONSTANT PATROL AND WATCH FOR THE OCCURENCE OF FIRE.

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE,
BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

DEMOLITION SECTIONS

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

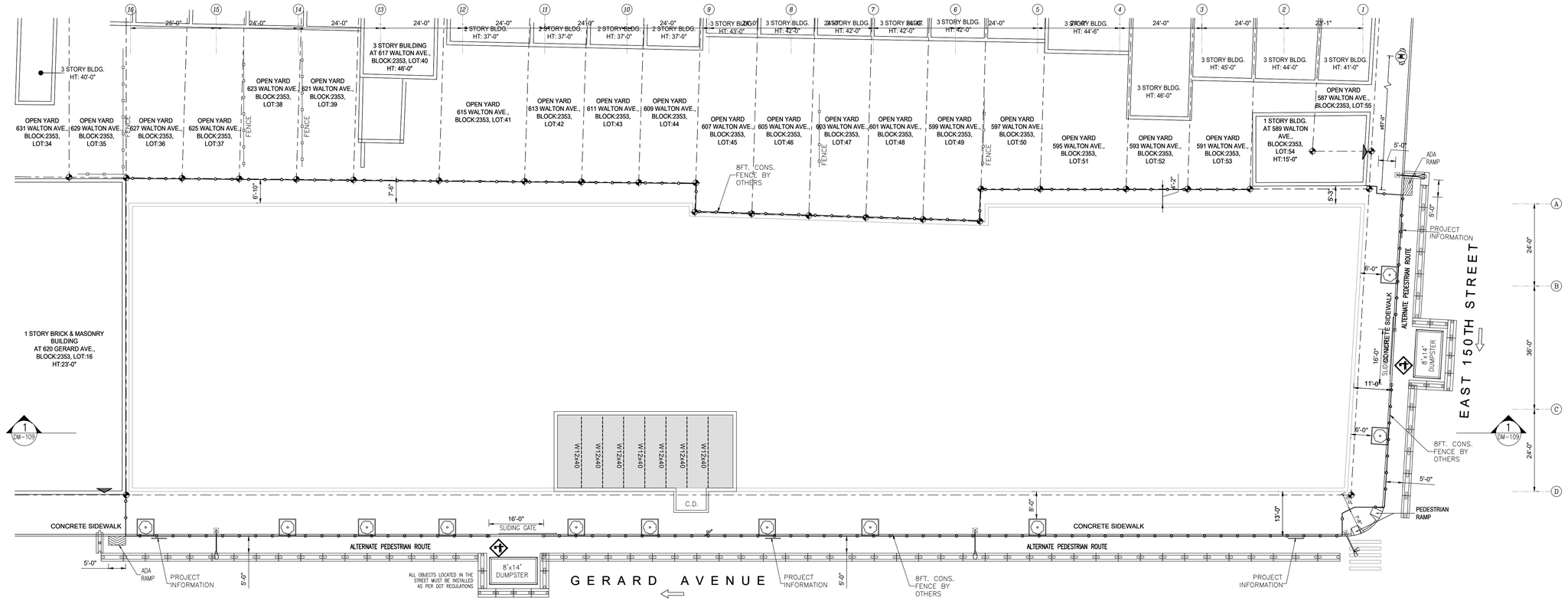
DOB STAMP HERE

SEAL & SIGNATURE

STATE OF NEW YORK · DOMINGO E. NEIRA · 057797 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-107.00

Sheet 10 | 20



1ST FLOOR DEMOLITION PLAN

SCALE: 1/16" = 1'-0"

STEP-"D": DEMOLITION OF 1ST FLOOR:

D.1 HAND TOOL REMOVE STAIR DOWN TO CELLAR LEVEL.
D.2 HAND TOO REMOVE ALL CONCRETE SLAB.
D.3 CONTRACTOR TO PROVIDE 1:1 SLOPE BERM AT CELLAR WALL.
D.3.1 PROVIDE PROVISIONAL LADDER AS MEANS OF EGRESS.
D.4 ASSISTED WITH ROUST-A-BOUT, HAND TOOL REMOVE ALL STEEL BEAMS DOWN TO CELLAR LEVEL.
D.4.1 TIE UP THE TRUSS.
D.4.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 8 ON DM-201.
D.4.3 BRING DOWN THE BEAM TO CELLAR LEVEL.

NOTE:
BY CHAPTER 14, FIRE CODE SAFETY DURING CONSTRUCTION AND DEMOLITION.
SECT. 1404.5 WHEN REQUIRED BY THE FIRE CODE OFFICIAL FOR BUILDING DEMOLITION THAT IS HAZARDOUS IN NATURE, QUALIFIED PERSONNEL SHALL BE PROVIDE TO SERVE AS AN ON-SITE FIRE WATCH. FIRE WATCH PERSONNEL SHALL BE PROVIDE WITH AT LEAST ONE APPROVED MEANS FOR NOTIFICATION OF THE FIRE DEPARTMENT AND THEIR SOLE DUTY SHALL BE PERFORM CONSTANT PATROL AND WATCH FOR THE OCCURENCE OF FIRE.

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

ROOF DEMOLITION PLAN - PHASE 3

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

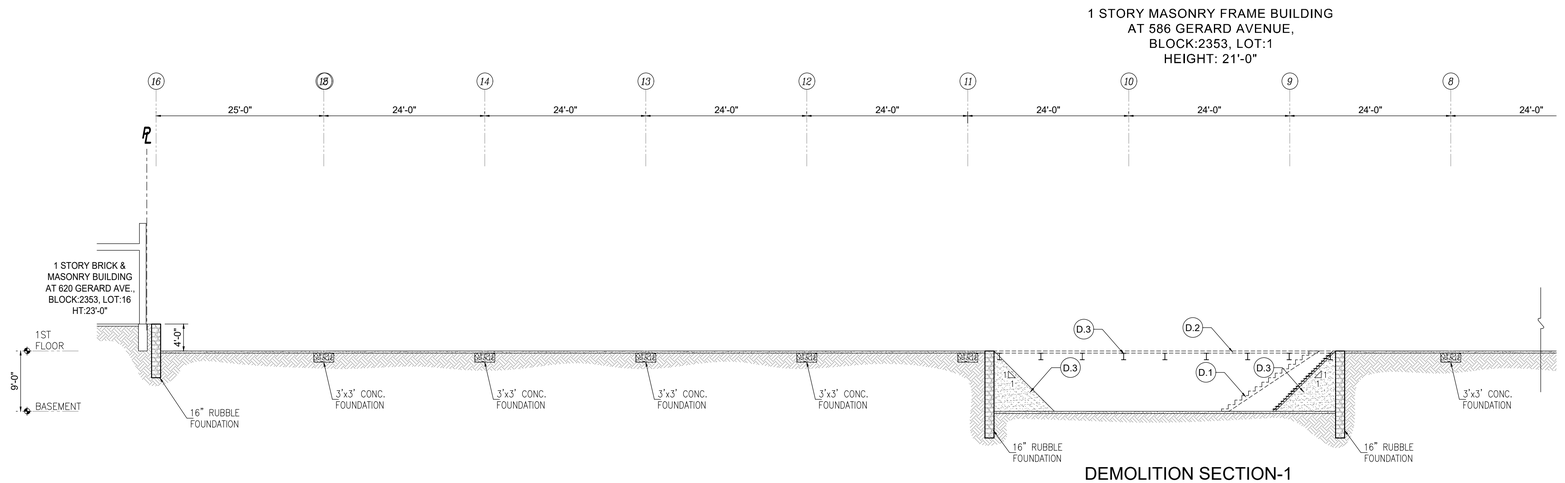
DOB STAMP HERE

SEAL & SIGNATURE

STATE OF NEW YORK — DAWIDAS E. NEJAM — 087791 — LICENSED PROFESSIONAL ENGINEER

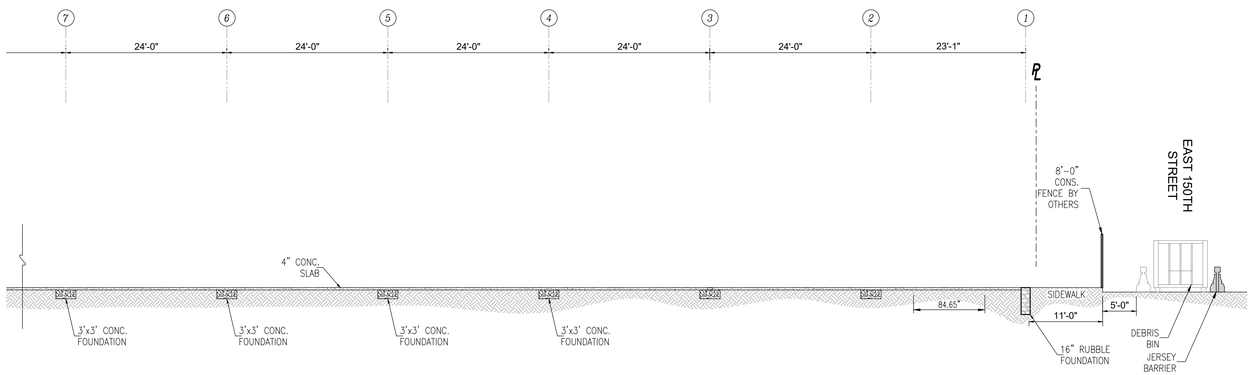
DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-108.00

Sheet 11 | 20



DEMOLITION SECTION-1

SCALE: 3/32"= 1'-0"



DEMOLITION SECTION-1

SCALE: 3/32"= 1'-0"

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

STEP-"D": DEMOLITION OF 1ST FLOOR:

D.1 HAND TOOL REMOVE STAIR DOWN TO CELLAR LEVEL.
D.2 HAND TOO REMOVE ALL CONCRETE SLAB.
D.3 CONTRACTOR TO PROVIDE 1:1 SLOPE BERM AT CELLAR WALL.
D.3.1 PROVIDE PROVISIONAL LADDER AS MEANS OF EGRESS.
D.4 ASSISTED WITH ROUST-A-BOUT, HAND TOOL REMOVE ALL STEEL BEAMS DOWN TO CELLAR LEVEL.
D.4.1 TIE UP THE TRUSS.
D.4.2 BURN CUT AT THE EDGES ONE FOOT AWAY USING MOVABLE SCAFFOLD AS PER DETAIL 8 ON DM-201.
D.4.3 BRING DOWN THE BEAM TO CELLAR LEVEL.

NOTE:
BY CHAPTER 14_FIRE CODE SAFETY DURING CONSTRUCTION AND DEMOLITION.
SECT. 1404.5 WHEN REQUIRED BY THE FIRE CODE OFFICIAL FOR BUILDING DEMOLITION THAT IS HAZARDOUS IN NATURE, QUALIFIED PERSONNEL SHALL BE PROVIDE TO SERVE AS AN ON-SITE FIRE WATCH. FIRE WATCH PERSONNEL SHALL BE PROVIDE WITH AT LEAST ONE APPROVED MEANS FOR NOTIFICATION OF THE FIRE DEPARTMENT AND THEIR SOLE DUTY SHALL BE PERFORM CONSTANT PATROL AND WATCH FOR THE OCCURENCE OF FIRE.

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O
ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE,
BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

DEMOLITION
SECTIONS

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

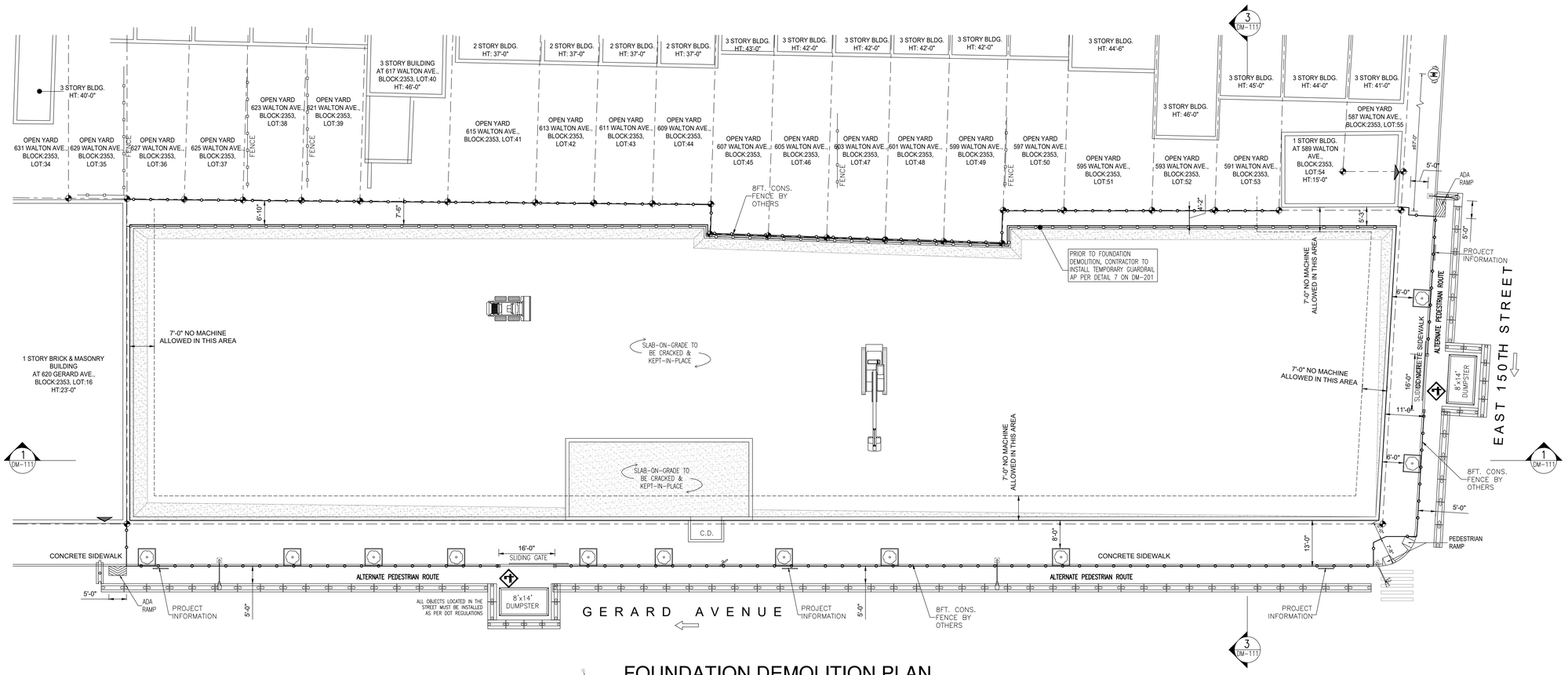
DOB STAMP HERE

SEAL & SIGNATURE

STATE OF NEW YORK · DOMENICO E. NUNZI · 082797 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-109.00

Sheet 12 | 20



FOUNDATION DEMOLITION PLAN

SCALE: 1/16" = 1'-0"

REQUEST TO WAIVE FOUNDATION/SLAB REMOVAL ONLY.

1) REQUEST TO WAIVE CODE SECTION 3306.10 REMOVAL OF FOUNDATIONS AND SLABS: WHERE A BUILDING, OR ANY PORTION, HAS BEEN DEMOLISHED TO GRADE, THE FLOOR SLAB OR FOUNDATION OF SUCH BUILDING, OR PORTION, SHALL BE REMOVED AND THE SITE BACKFILLED TO GRADE.

2) REMAINING EXISTING FOUNDATION WALLS MUST BE REMAIN TO PROVIDE STABILITY OF THE SITE AND TO THE ADJACENT BUILDING'S FOUNDATION.

3) REMAINING EXISTING SLAB-ON-GRADE WILL BE CRACKED FOR DRAINAGE. PERIODIC INSPECTIONS ARE NOT REQUIRED.

4) THE CELLAR WILL BE BACKFILLED UP TO GRADE.

5) APPROVED DEMOLITION DRAWINGS SHOWING REMAINING FOUNDATIONS MUST BE PROVIDED TO THE OWNER. REMAINING FOUNDATION ELEMENTS MUST BE DEPICTED ON ANY FUTURE SOE DOCUMENTS.

6) THIS FOUNDATION WAIVER REQUEST SATISFIES THE REQUIREMENTS OUTLINED ON NYC DOB "DEMOLITION OF BACKFILL AND/OR FOUNDATION REMOVAL NOTICE" ISSUED ON JULY 2014.

SEQUENCE OF DEMOLITION:

STEP "E": DEMOLITION OF FOUNDATION :

E.1 REMAINING FOUNDATION WALLS WILL REMAIN IN PLACE TO PRESERVE THE STRUCTURAL STABILITY OF ADJACENT BUILDINGS AND SIDEWALK.

E.2 REMAINING SLAB ON GRADE MUST BE CRACKED FOR DRAINAGE THEN LEFT IN PLACE.
E.2.1 MECHANICAL EQUIPMENT CANNOT OPERATE WITHIN 7'-0" OF ADJACENT BUILDING AS SHOWN ON PLAN.

E.3 CONTRACTOR TO FULL BACKFILL CELLAR TO GRADE LEVEL WITH CLEAN FILL MATERIAL.

E.4 INSTALL GUARDRAIL AS PER DETAIL 7 ON DM-201.

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

FOUNDATION PLAN

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

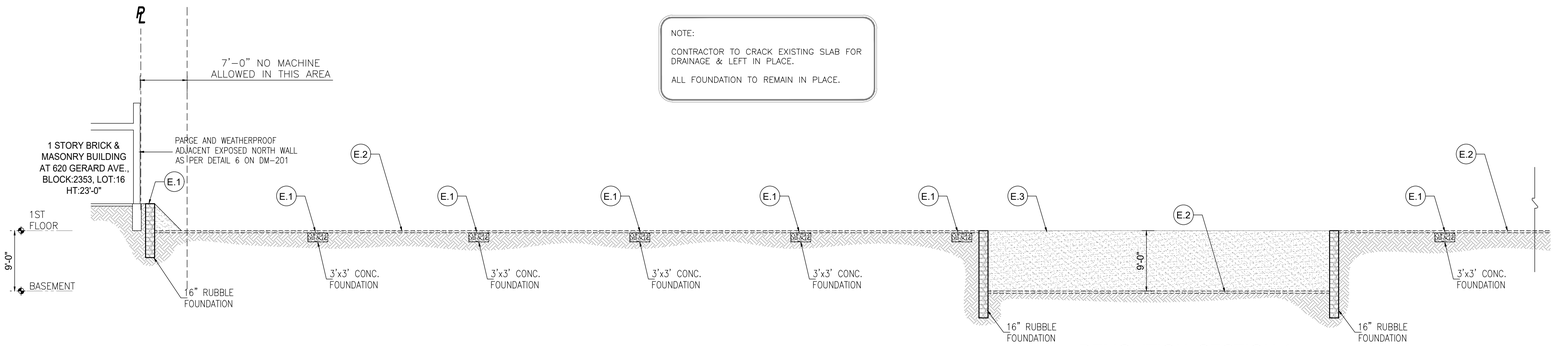
DOB STAMP HERE

SEAL & SIGNATURE

STATE OF NEW YORK · SANTIAGO E. HOLMAN · LICENSED PROFESSIONAL ENGINEER · 087797

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-110.00

Sheet 13 | 20



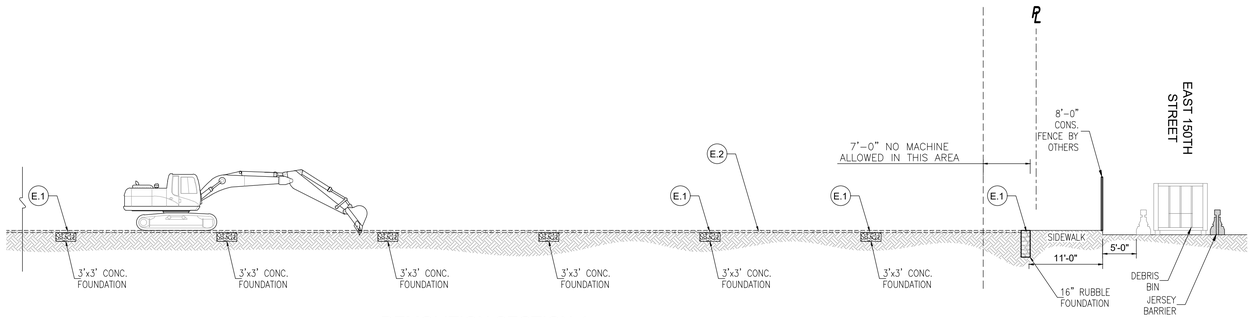
NOTE:

CONTRACTOR TO CRACK EXISTING SLAB FOR DRAINAGE & LEFT IN PLACE.

ALL FOUNDATION TO REMAIN IN PLACE.

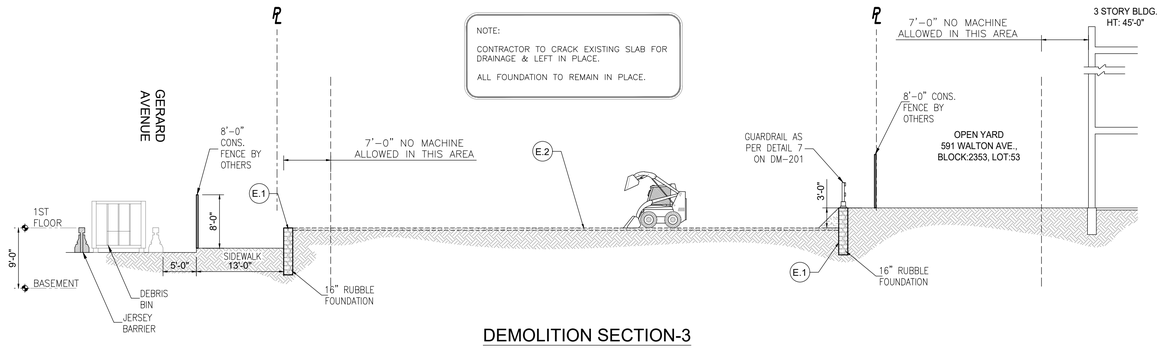
DEMOLITION SECTION-1

SCALE: 3/32"= 1'-0"



DEMOLITION SECTION-1

SCALE: 3/32"= 1'-0"



DEMOLITION SECTION-3

SCALE: 3/32"= 1'-0"

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

REQUEST TO WAIVE FOUNDATION/SLAB REMOVAL ONLY.

1) REQUEST TO WAIVE CODE SECTION 3306.10 REMOVAL OF FOUNDATIONS AND SLABS: WHERE A BUILDING, OR ANY PORTION, HAS BEEN DEMOLISHED TO GRADE, THE FLOOR SLAB OR FOUNDATION OF SUCH BUILDING, OR PORTION, SHALL BE REMOVED AND THE SITE BACKFILLED TO GRADE.

2) REMAINING EXISTING FOUNDATION WALLS MUST BE REMAIN TO PROVIDE STABILITY OF THE SITE AND TO THE ADJACENT BUILDING'S FOUNDATION.

3) REMAINING EXISTING SLAB-ON-GRADE WILL BE CRACKED FOR DRAINAGE. PERIODIC INSPECTIONS ARE NOT REQUIRED.

4) THE CELLAR WILL BE BACKFILLED UP TO GRADE.

5) APPROVED DEMOLITION DRAWINGS SHOWING REMAINING FOUNDATIONS MUST BE PROVIDED TO THE OWNER. REMAINING FOUNDATION ELEMENTS MUST BE DEPICTED ON ANY FUTURE SOE DOCUMENTS.

6) THIS FOUNDATION WAIVER REQUEST SATISFIES THE REQUIREMENTS OUTLINED ON NYC DOB "DEMOLITION OF BACKFILL AND/OR FOUNDATION REMOVAL NOTICE" ISSUED ON JULY 2014.

SEQUENCE OF DEMOLITION:

STEP "E": DEMOLITION OF FOUNDATION .

E.1 REMAINING FOUNDATION WALLS WILL REMAIN IN PLACE TO PRESERVE THE STRUCTURAL STABILITY OF ADJACENT BUILDINGS AND SIDEWALK.

E.2 REMAINING SLAB ON GRADE MUST BE CRACKED FOR DRAINAGE THEN LEFT IN PLACE.
E.2.1 MECHANICAL EQUIPMENT CANNOT OPERATE WITHIN 7'-0" OF ADJACENT BUILDING AS SHOWN ON PLAN.

E.3 CONTRACTOR TO FULL BACKFILL CELLAR TO GRADE LEVEL WITH CLEAN FILL MATERIAL.

E.4 INSTALL GUARDRAIL AS PER DETAIL 7 ON DM-201.

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

DEMOLITION SECTIONS

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

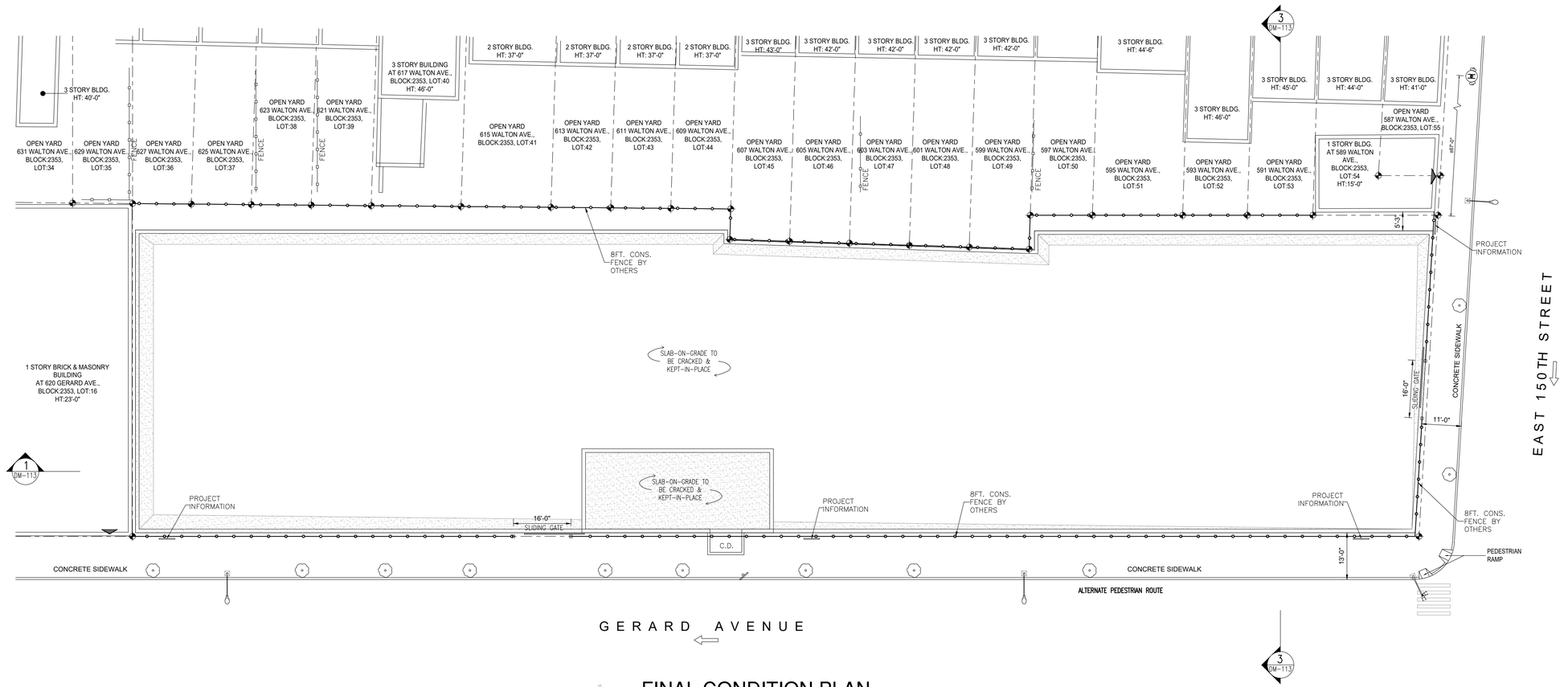
DOB STAMP HERE

SEAL & SIGNATURE

STATE OF NEW YORK · DANIELLE E. HELMS · 082791 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-111.00

Sheet 14 | 20



FINAL CONDITION PLAN

SCALE: 1/16" = 1'-0"

REQUEST TO WAIVE FOUNDATION/SLAB REMOVAL ONLY.

1) REQUEST TO WAIVE CODE SECTION 3306.10 REMOVAL OF FOUNDATIONS AND SLABS: WHERE A BUILDING, OR ANY PORTION, HAS BEEN DEMOLISHED TO GRADE, THE FLOOR SLAB OR FOUNDATION OF SUCH BUILDING, OR PORTION, SHALL BE REMOVED AND THE SITE BACKFILLED TO GRADE.

2) REMAINING EXISTING FOUNDATION WALLS MUST BE REMAIN TO PROVIDE STABILITY OF THE SITE AND TO THE ADJACENT BUILDING'S FOUNDATION.

3) REMAINING EXISTING SLAB-ON-GRADE WILL BE CRACKED FOR DRAINAGE. PERIODIC INSPECTIONS ARE NOT REQUIRED.

4) THE CELLAR WILL BE BACKFILLED UP TO GRADE.

5) APPROVED DEMOLITION DRAWINGS SHOWING REMAINING FOUNDATIONS MUST BE PROVIDED TO THE OWNER. REMAINING FOUNDATION ELEMENTS MUST BE DEPICTED ON ANY FUTURE SOE DOCUMENTS.

6) THIS FOUNDATION WAIVER REQUEST SATISFIES THE REQUIREMENTS OUTLINED ON NYC DOB "DEMOLITION OF BACKFILL AND/OR FOUNDATION REMOVAL NOTICE" ISSUED ON JULY 2014.

SEQUENCE:

STEP "F": FINAL CONDITION .

F.1 RELOCATE FENCE INTO PROPERTY LINE.

F.2 CONTRACTOR MUST REPAIR CONCRETE SIDEWALK AS PER DOT REQUIREMENT IF DAMAGED DURING DEMOLITION OPERATION.

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

FINAL CONDITION PLAN

NYC DOB JOB NUMBER:

DM-220680895

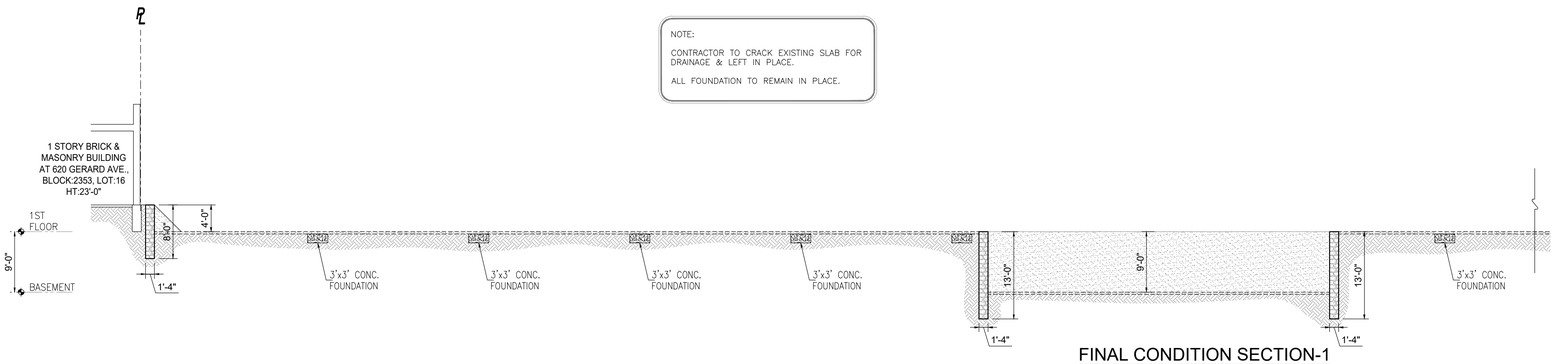
NYC DOB STICKER HERE

DOB STAMP HERE

SEAL & SIGNATURE

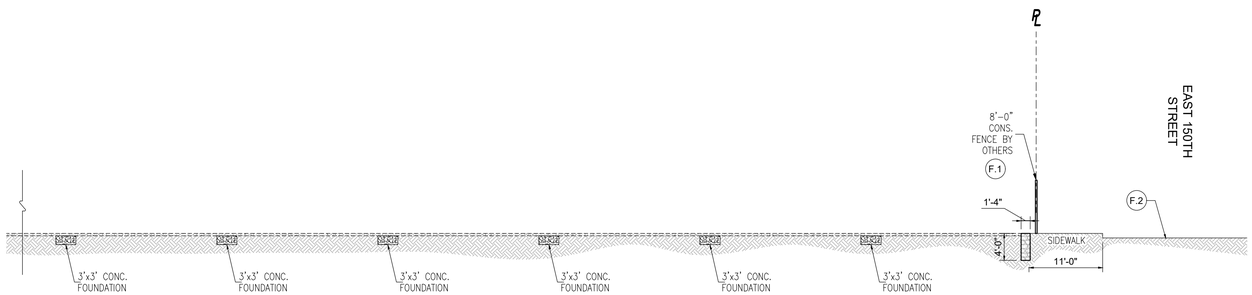
STATE OF NEW YORK · ORLANDO E. NEJAM · 087791 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-112.00



FINAL CONDITION SECTION-1

SCALE: 3/32"= 1'-0"



FINAL CONDITION SECTION-1

SCALE: 3/32"= 1'-0"

FINAL CONDTION SECTION-3

SCALE: 3/32"= 1'-0"

REQUEST TO WAIVE FOUNDATION/SLAB REMOVAL ONLY.

1) REQUEST TO WAIVE CODE SECTION 3306.10 REMOVAL OF FOUNDATIONS AND SLABS: WHERE A BUILDING, OR ANY PORTION, HAS BEEN DEMOLISHED TO GRADE, THE FLOOR SLAB OR FOUNDATION OF SUCH BUILDING, OR PORTION, SHALL BE REMOVED AND THE SITE BACKFILLED TO GRADE.

2) REMAINING EXISTING FOUNDATION WALLS MUST BE REMAIN TO PROVIDE STABILITY OF THE SITE AND TO THE ADJACENT BUILDING'S FOUNDATION.

3) REMAINING EXISTING SLAB-ON-GRADE WILL BE CRACKED FOR DRAINAGE. PERIODIC INSPECTIONS ARE NOT REQUIRED.

4) THE CELLAR WILL BE BACKFILLED UP TO GRADE.

5) APPROVED DEMOLITION DRAWINGS SHOWING REMAINING FOUNDATIONS MUST BE PROVIDED TO THE OWNER. REMAINING FOUNDATION ELEMENTS MUST BE DEPICTED ON ANY FUTURE SOE DOCUMENTS.

6) THIS FOUNDATION WAIVER REQUEST SATISFIES THE REQUIREMENTS OUTLINED ON NYC DOB "DEMOLITION OF BACKFILL AND/OR FOUNDATION REMOVAL NOTICE" ISSUED ON JULY 2014.

SEQUENCE:

STEP "F": *FINAL CONDITION .*

F.1 RELOCATE FENCE INTO PROPERTY LINE.

F.2 CONTRACTOR MUST REPAIR CONCRETE SIDEWALK AS PER DOT REQUIREMENT IF DAMAGED DURING DEMOLITION OPERATION.

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

FINAL CONDITION SECTIONS

NYC DOB JOB NUMBER:

DM-220680895

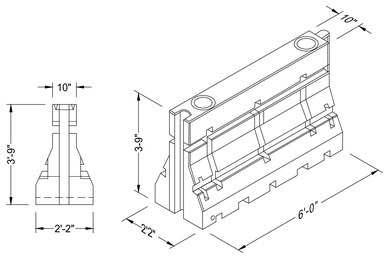
NYC DOB STICKER HERE

DOB STAMP HERE

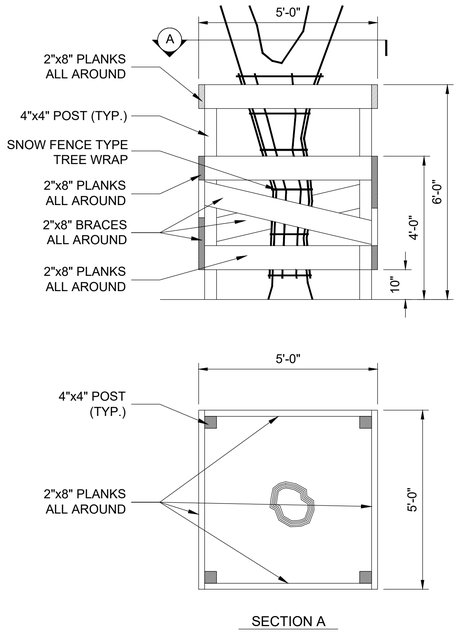
SEAL & SIGNATURE

STATE OF NEW YORK · EDWARDO E. NUNEZ · 087796 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-113.00

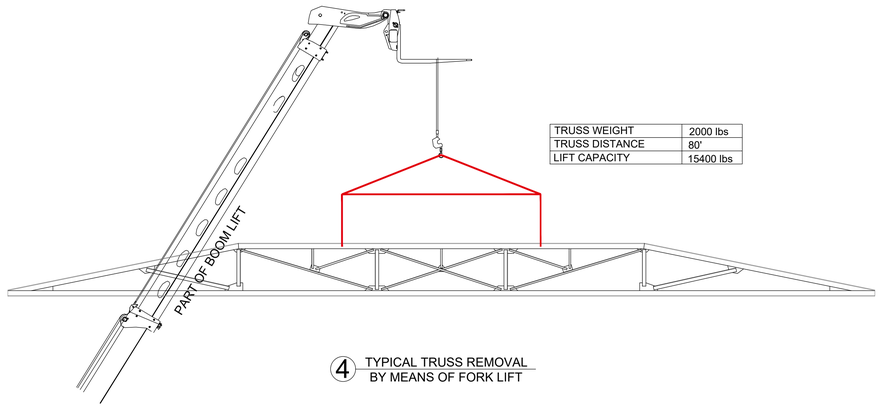


1 WATER FILLED PLASTIC BARRIERS DETAIL



SECTION A

2 PROTECTIVE TREE BARRIER



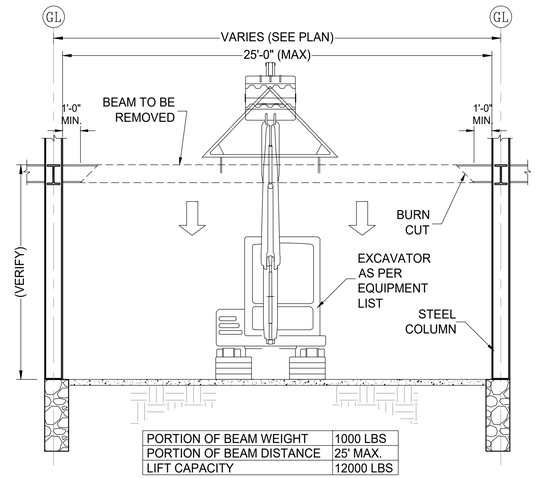
TRUSS WEIGHT	2000 lbs
TRUSS DISTANCE	80'
LIFT CAPACITY	15400 lbs

4 TYPICAL TRUSS REMOVAL BY MEANS OF FORK LIFT

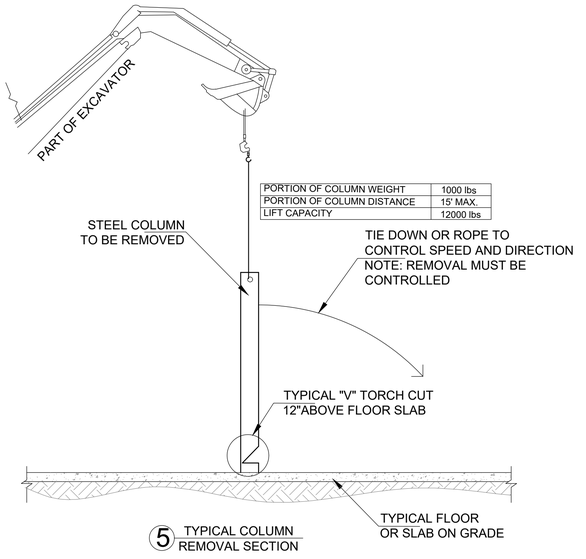
LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021



3 TYPICAL STEEL BEAM REMOVAL DETAIL WITH AID OF EXCAVATOR



5 TYPICAL COLUMN REMOVAL SECTION

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

PROTECTION DETAILS

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

DOB STAMP HERE

SEAL & SIGNATURE

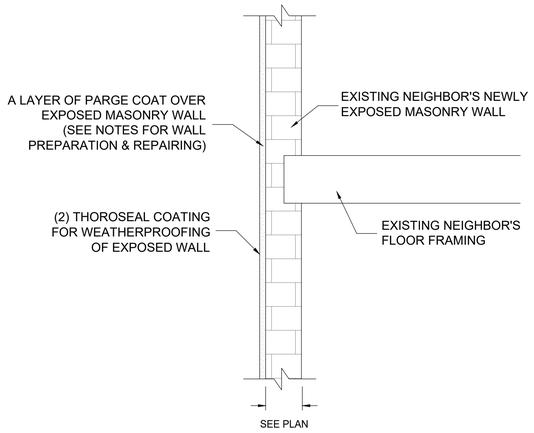
STATE OF NEW YORK · DOMENICO E. NEMA · 087797 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-200.00

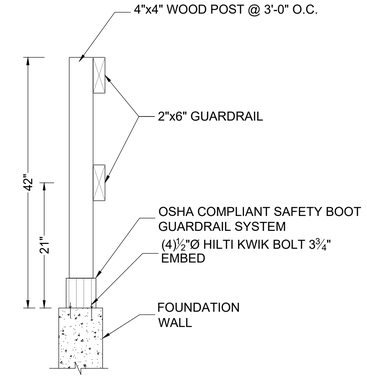
Sheet 17 | 20

WEATHERPROOF OF ADJOINING BUILDINGS NOTES:

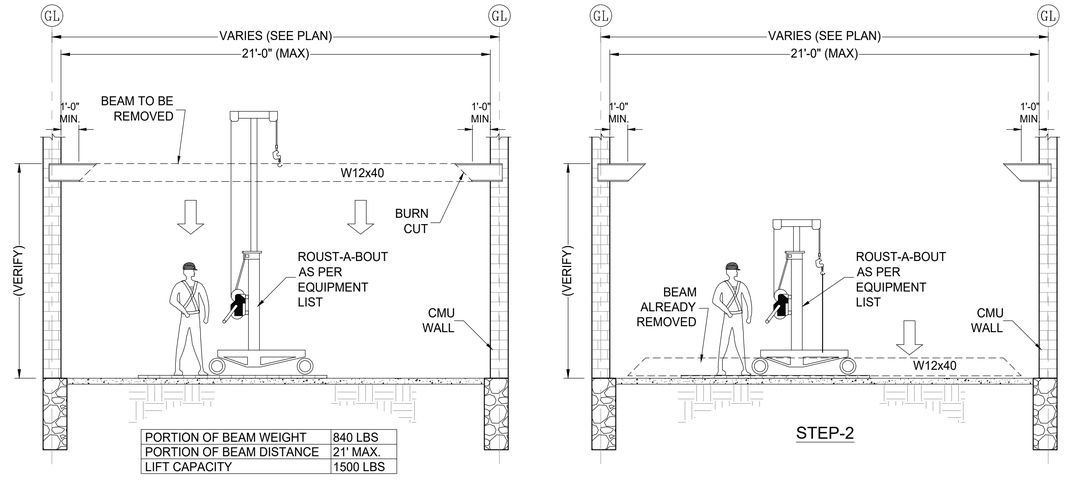
1. PRIOR TO THE APPLICATION OF THE WEATHERPROOFING, ALL EXISTING FLASHING IS TO BE BENT OVER, ALL CORNICES MUST BE SEALED PROPERLY, AND ANY LOOSE WALL MATERIAL MUST BE REMOVED.
2. INSPECTED NEWLY EXPOSED NEIGHBOR'S MASONRY WALL FOR ANY DEFECTS PRIOR TO THE APPLICATION OF THE WEATHERPROOF COATING.
3. ANY LARGE POCKETS AND VOIDS MUST BE REPAIRED AND REBUILT TO A FLUSH SOUND CONDITION WITH LIKE MATERIAL AND FIRMLY ANCHORING TO EXISTING WALL WITH CORRUGATED MASONRY TIES.
4. APPLY A LAYER OF PARGE COAT OVER NEWLY EXPOSED MASONRY WALL.
5. APPLY (2) COATS OF THOROSEAL CEMENT-BASED COATING TO EXPOSED WALL (REFER TO MANUFACTURERS RECOMMENDATIONS AND SPECIFICATIONS FOR MORE DETAILS ON HOW TO APPLY THE WATERPROOFING).



6 WEATHERPROOFING DETAIL



7 GUARDRAIL DETAIL



PORTION OF BEAM WEIGHT	840 LBS
PORTION OF BEAM DISTANCE	21' MAX.
LIFT CAPACITY	1500 LBS

8 TYPICAL STEEL BEAM REMOVAL DETAIL WITH AID OF ROUST-A-BOUT

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE, BRONX, NY 10451

BLOCK: 2353 LOT: 1

BIN #: 2001115 ZONING MAP: 16A

SHEET TITLE

PROTECTION DETAILS

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

DOB STAMP HERE

SEAL & SIGNATURE

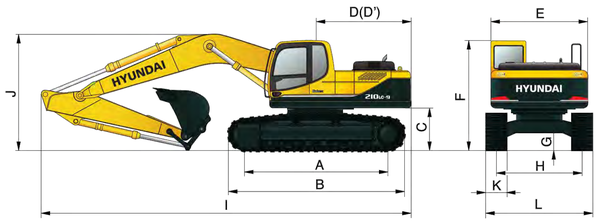
STATE OF NEW YORK · SANTIAGO E. HELMAN · LICENSED PROFESSIONAL ENGINEER · 085791

DATE: 9-03-2021
PROJECT No: 20-1918
DRAWN BY: MT
CHK BY: DH
DWG No:

DM-201.00

Dimensions & Working Range

R210LC-9 DIMENSIONS



Unit : mm (ft · in)

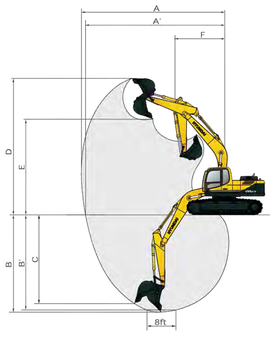
A	Tumbler distance	3,650 (12′ 0″)
B	Overall length of crawler	4,440 (14′ 7″)
C	Ground clearance of counterweight	1,060 (3′ 6″)
D	Tail swing radius	2,830 (9′ 3″)
D'	Rear-end length	2,770 (9′ 1″)
E	Overall width of upperstructure	2,740 (9′ 0″)
F	Overall height of cab	2,920 (9′ 7″)
G	Min. ground clearance	480 (1′ 7″)
H	Track gauge	2,390 (7′ 10″)

	Boom length	5,680 (18′ 8″)				8,200 (26′ 11″)
	Arm length	2,000 (6′ 7″)	2,400 (7′ 10″)	2,920 (9′ 7″)	3,900 (12′ 10″)	6,300 (20′ 8″)
I	Overall length	9,650 (31′ 8″)	9,570 (31′ 5″)	9,530 (31′ 3″)	9,520 (31′ 3″)	12,030 (39′ 6″)
J	Overall height of boom	3,200 (10′ 6″)	3,110 (10′ 2″)	3,030 (9′ 11″)	3,480 (11′ 5″)	3,280 (10′ 9″)

K	Track shoe width	600 (24″)	700 (28″)	800 (32″)	900 (36″)
L	Overall width	2,990 (9′ 10″)	3,090 (10′ 2″)	3,190 (10′ 6″)	3,290 (10′ 10″)

R210LC-9 WORKING RANGE

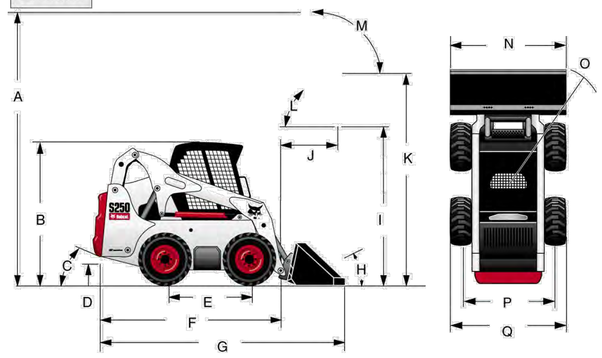
Unit : mm (ft · in)



	Boom length	5,680 (18′ 8″)			8,200 (26′ 11″)
	Arm length	2,000 (6′ 7″)	2,400 (7′ 10″)	2,920 (9′ 7″)	3,900 (12′ 10″)	6,300 (20′ 8″)
A	Max. digging reach	9,140 (30′ 0″)	9,500 (31′ 2″)	9,980 (32′ 9″)	10,910 (35′10″)	15,220 (50′ 0″)
A'	Max. digging reach on ground	8,960 (29′ 5″)	9,330 (30′ 7″)	9,820 (32′ 3″)	10,770 (35′ 4″)	15,120 (49′ 7″)
B	Max. digging depth	5,820 (19′ 1″)	6,220 (20′ 5″)	6,730 (22′ 1″)	7,720 (25′ 4″)	11,760 (38′ 7″)
B'	Max. digging depth (8′ level)	5,580 (18′ 4″)	6,010 (19′ 9″)	6,560 (21′ 6″)	7,580 (24′ 10″)	11,650 (38′ 3″)
C	Max. vertical wall digging depth	5,280 (17′ 4″)	5,720 (18′ 9″)	6,280 (20′ 7″)	7,240 (23′ 9″)	9,610 (31′ 6″)
D	Max. digging height	9,140 (30′ 0″)	9,340 (30′ 8″)	9,600 (31′ 6″)	10,110 (33′ 2″)	12,550 (41′ 2″)
E	Max. dumping height	6,330 (20′ 9″)	6,520 (21′ 5″)	6,780 (22′ 3″)	7,290 (23′ 11″)	10,280 (33′ 8″)
F	Min. swing radius	3,750 (12′ 4″)	3,740 (12′ 3″)	3,740 (12′ 3″)	3,650 (11′ 12″)	4,870 (16′ 0″)

S250 Skid-Steer Loader Specifications

Dimensions



A) Operating Height ..... 160.6" (4079 mm)
B) Height with Operator Cab ..... 80.9" (2055 mm)
C) Angle of Departure ..... 25°
D) Ground Clearance ..... 8.5" (216 mm)
E) Wheelbase ..... 48.3" (1227 mm)
F) Length without Attachment ..... 114.5" (2908 mm)
G) Length with Standard Bucket ..... 142.9" (3630 mm)
H) Rollback @ Carry Position ..... 32°
I) Dump Height with Standard Bucket . 99.1" (2517 mm)
J) Dump Reach @ Maximum Height ... 33.8" (859 mm)
K) Height to Bucket Hinge Pin ..... 128.8" (3272 mm)
L) Dump Angle @ Maximum Height ..... 42°
M) Rollback Fully Raised @ Maximum Height ..... 96°

Carry Position ..... 9.7" (246 mm)

N) Width (over bucket)
68" Bucket ..... 68.0" (1727 mm)
74" Bucket ..... 74.0" (1880 mm)
80" Bucket ..... 80.0" (2032 mm)
O) Turning Radius with Standard Bucket ..... 84.2" (2139 mm)
Rear Clearance of Machine ..... 62.2" (1579 mm)
P) Wheel Tread
12-16.5 ..... 59.2" (1503 mm)
33 X 15.5-16.5 ..... 59.2" (1503 mm)
Q) Width (over tires)
12-16.5 ..... 72.0" (1829 mm)
33 X 15.5-16.5 ..... 74.0" (1880 mm)

Performance

Rated Operating Capacity (SAE J732)	2500 lbs. (1134 kg)
Rated Operating Capacity with Counterweight option	2600 lbs. (1179 kg)
Tipping Load (SAE)	5661 lbs. (2564 kg)
Operating Weight (SAE)	7825 lbs. (3549 kg)
Travel Speed - standard	6.9 mph (11,1 km/hr)
Travel Speed - Two-Speed option	6.9/12.0 mph (11,1/19,3 km/hr)
Lift Breakout Force (SAE)	5000 lbs. (2268 kg)
Tilt Breakout Force (SAE)	5000 lbs. (2268 kg)
Push Force	5500 lbs. (2495 kg)

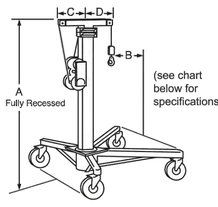
Roust-A-Bout

SUMNER
Sumner Manufacturing Co, Inc.

The Versatile Lift That Makes One Man A Crew!

- **Lifts 1,500 lb (680 kg)**
- **15, 18 and 25 foot heights (4.6, 5.5 and 7.6 m)**
- **Moves vertically and horizontally**
- **2 Winches: operate load and mast elevation separately**
- **4-Speed Load winches**
- **Infinite load height adjustment**
- **Ideal for job or shop**

- **Enables one man to perform as a crew – pays for itself in days!**
- **Lift and place loads in tight locations impossible for other lifts**
- **8" casters (200 mm) permit full load to be positioned with ease**
- **Tee Head Extension available for wider loads up to 1,000 lbs (455 kg)**
- **Eliminates the need for come alongs, scaffolds, monorails and swing booms**



(see chart below for specifications)

Mast and base sections separate quickly for ease of transportation and storage.

Part No.	Description	Weight lb	Weight kg	A inch	A cm	B inch	B cm	C/D inch	C/D cm	Base inch	Base cm	Max Height	
780300	R-100 Roust-A-Bout 15' Top Height	330	150	79	200	20	50	12	30	32 x 40	80 x 100	15' 2-1/2"	4.6
780301	R-150 Roust-A-Bout 15' Top Height	336	152	79	200	20	50	12	30	40 x 40	100 x 100	15' 2-1/2"	4.6
780302	R-180 Roust-A-Bout 18' Top Height	403	183	126	320	25	63	14.5	36	50 x 50	125 x 125	17' 11-5/8"	5.5
780303	R-250 Roust-A-Bout 25' Top Height	493	224	119	302	30	75	17.5	44	60 x 60	150 x 150	25' 3/8"	7.6

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE,
BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

EQUIPMENT SPECIFICATIONS

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

DOB STAMP HERE

SEAL & SIGNATURE

STATE OF NEW YORK · SANTIAGO E. HELMA · LICENSED PROFESSIONAL ENGINEER · 087791

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-300.00

KEY CHARACTERISTICS

BEST LIFTING PERFORMANCE

LIFT CAPACITY FROM **22,046 lbs** TO **99,200 lbs** BEST LOAD CHARTS AVAILABLE

MAX. LIFTING HEIGHT **31-46 feet**

CAPACITY IN LBS AT MAX. REACH

HTH 10.10	**5,730**	lbs	**16.5**	feet
HTH 16.10	**9,260**	lbs	**16.5**	feet
HTH 20.10	**12,100**	lbs	**17.0**	feet
HTH 24.11	**16,000**	lbs	**18.5**	feet
HTH 27.11	**16,530**	lbs	**21.3**	feet
HTH 30.12	**17,630**	lbs	**22.5**	feet
HTH 35.12	**19,850**	lbs	**22.5**	feet
HTH 50.14	**26,450**	lbs	**26.0**	feet

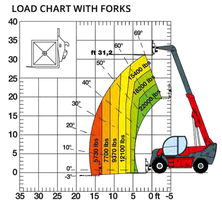
GROUND CLEARANCE

HTH 10.10	14.7 in	HTH 27.11	20.8 in
HTH 16.10	17.3 in	HTH 30.12	21.5 in
HTH 20.10	15.74 in	HTH 35.12	21.5 in
HTH 24.11	17.0 in	HTH 50.14	27.2 in

MAGNI TELESCOPIC HANDLERS

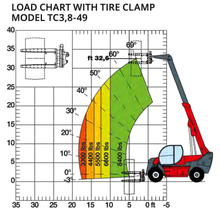
HTH 10.10

LOAD CHART WITH FORKS



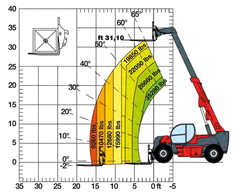
HTH 10.10

LOAD CHART WITH TIRE CLAMP MODEL TC3,8-49



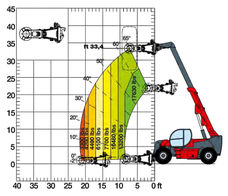
HTH 16.10

LOAD CHART WITH FORKS



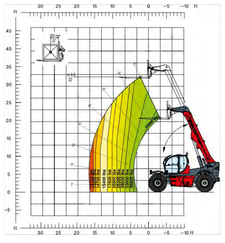
HTH 16.10

LOAD CHART WITH TIRE CLAMP MODEL TC 08.63



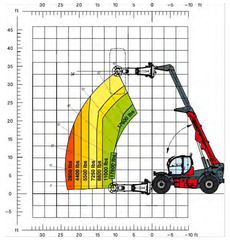
HTH 20.10

LOAD CHART WITH FORKS



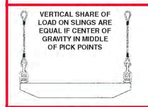
HTH 20.10

LOAD CHART WITH TIRE CLAMP MODEL TC 08.63

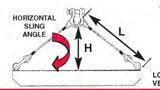


Rigging Information

SLING ANGLE INFORMATION

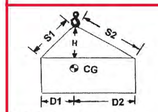


VERTICAL SHARE OF LOAD ON SLINGS ARE EQUAL IF CENTER OF GRAVITY IN MIDDLE OF PICK POINTS

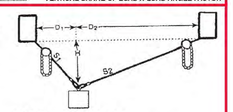


HORIZONTAL SLING ANGLE (A) DEGREE	LOAD ANGLE FACTOR = L/H
90	1.000
60	1.155
50	1.305
45	1.414
30	2.000

LOAD ON EACH LEG OF SLING = VERTICAL SHARE OF LOAD X LOAD ANGLE FACTOR



HORIZONTAL SLING ANGLES OF LESS THAN 30 DEGREES ARE NOT RECOMMENDED REFER TO ANSI B30.9 FOR FULL INFORMATION



LOAD ON SLING CALCULATED
TENSION 1 = LOAD X D2 X S1/(H(D1+D2))
TENSION 2 = LOAD X D1 X S2/(H(D1+D2))

LOAD ON SLING CALCULATED
TENSION 1 = LOAD X D2 X S1/(H(D1+D2))
TENSION 2 = LOAD X D1 X S2/(H(D1+D2))

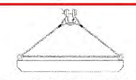
ASME B30.9 OPERATING PRACTICES AND LOAD CONTROL

WHENEVER ANY SLING IS USED, THE FOLLOWING PRACTICES SHALL BE OBSERVED.

1. SLINGS THAT ARE DAMAGED OR DEFECTIVE SHALL NOT BE USED.
2. SLINGS SHALL NOT BE SHORTENED WITH KNOTS OR BOLTS OR OTHER MAKESHIFT DEVICES.
3. SLING LEGS SHALL NOT BE KINKED.
4. SLINGS SHALL NOT BE LOADED IN EXCESS OF THEIR RATED CAPACITIES.
5. SLINGS USED IN A BASKET HITCH SHALL HAVE THE LOADS BALANCED TO PREVENT SLIPPAGE.
6. SLINGS SHALL BE SECURELY ATTACHED TO THEIR LOAD.
7. SLINGS SHALL BE PADDED OR PROTECTED FROM THE SHARP EDGES OF THEIR LOADS.
8. SUSPENDED LOADS SHALL BE KEPT CLEAR OF ALL OBSTRUCTION.
9. ALL EMPLOYEES SHALL BE KEPT CLEAR OF LOADS ABOUT TO BE LIFTED AND OF SUSPENDED LOADS.
10. HANDS OR FINGERS SHALL NOT BE PLACED BETWEEN THE SLING AND ITS LOAD WHILE THE SLING IS BEING TIGHTENED AROUND THE LOAD.
11. SHOCK LOADING IS PROHIBITED!
12. A SLING SHALL NOT BE PULLED FROM UNDER A LOAD WHEN THE LOAD IS RESTING ON THE SLING.

INSPECTION: EACH DAY BEFORE BEING USED, THE SLING AND ALL FASTENINGS AND ATTACHMENTS SHALL BE INSPECTED FOR DAMAGE OR DEFECTS BY A COMPETENT PERSON DESIGNATED BY THE EMPLOYER. ADDITIONAL INSPECTIONS SHALL BE PERFORMED DURING SLING USE WHERE SERVICE CONDITIONS WARRANT. DAMAGED OR DEFECTIVE SLINGS SHALL BE IMMEDIATELY REMOVED FROM SERVICE.

POSITIVE LOAD CONTROL



REEVING THROUGH CONNECTIONS TO LOAD INCREASES LOAD ON CONNECTION FITTINGS BY AS MUCH AS TWICE.
DO NOT REEVE!

LEGEND:

- 8' HIGH CONSTRUCTION FENCE
- PROPERTY LINE
- DEBRIS REMOVAL ROUTE
- EXISTING CHAINLINK FENCE
- BUILDING TO BE DEMOLISHED
- OVERHEAD PROTECTION
- SLIDING GATE
- DEBRIS CONTAINER
- BUILDING EGRESS
- FLAGMAN
- TRAFFIC DIRECTION
- STREET SIGN
- FIRE HYDRANT
- TREE PROTECTION
- LIGHT POST
- TRAFFIC POST

No.	ISSUED	DATE
F01	INITIAL DOB SUBMISSION	9-03-2021

OWNER

SB GERARD AVENUE, LLC
330 EAST 75TH STREET, APT 2F N.Y. 10021
(917) 596-0821
SHARONEKARTEN@GMAIL.COM

ENGINEER

H+O ENGINEERING, DPC
44-02 11TH STREET, OFFICE 406
LONG ISLAND CITY, NY 11101
T: (347) 639-0669

PROJECT ADDRESS

586 GERARD AVENUE,
BRONX, NY 10451

BLOCK: 2353 *LOT:* 1

BIN #: 2001115 *ZONING MAP:* 16A

SHEET TITLE

EQUIPMENT SPECIFICATIONS

NYC DOB JOB NUMBER:

DM-220680895

NYC DOB STICKER HERE

DOB STAMP HERE

SEAL & SIGNATURE

STATE OF NEW YORK · SANTIAGO E. HILMAN · 087790 · LICENSED PROFESSIONAL ENGINEER

DATE:	9-03-2021
PROJECT No:	20-1918
DRAWN BY:	MT
CHK BY:	DH
DWG No:	DM-301.00
Sheet 20	20

APPENDIX L

Proposed Support of Excavation Plans

DRAFT FOR DISCUSSION

SUPPORT OF EXCAVATION (SOE)
580 GERARD AVENUE
BRONX, NY 10451

GENERAL NOTES:

1. ALL ELEVATIONS ARE REFERENCED TO THE NAVD88 DATUM.
2. PROJECT DATUM OF 0'-0" EQUALS APPROXIMATELY EL. +24.13' IN NAVD88 DATUM.
3. BASE PLAN AND SECTIONS ARE DEVELOPED FROM:
   - 3.1. NYC DEPARTMENT OF FINANCE TAX MAP FOR BLOCK 2353, DATED FEBRUARY 07, 2018.
   - 3.2. ARCHITECTURAL SURVEY PERFORMED BY BORO LAND SURVEYING, P.C. DATED DECEMBER 17, 2020.
   - 3.3. FOUNDATION PLAN PERFORMED BY McNAMARA SALVIA STRUCTURAL ENGINEERS DATED SEPTEMBER 01, 2021.
4. GEOTECHNICAL DATA OBTAINED FROM:
   - 4.1. "DRAFT GEOTECHNICAL REPORT" PERFORMED BY GEOTECHNICAL ENGINEERING SERVICES, P.C. (GES, P.C.), DATED JANUARY 21, 2020.
5. SHOULD MORE RECENT STRUCTURAL DRAWINGS BE MADE AVAILABLE, THIS DRAWING SET MUST BE REVISED IN ORDER TO REFLECT ANY CHANGES.
6. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE SECTIONS OF THE RESIDENTIAL CODE OF NEW YORK (RCNY) AND THE BUILDING CODE OF THE CITY OF NEW YORK (2014).
7. LOCATION OF EXISTING AND PROPOSED CONDITIONS, INCLUDING BUT NOT LIMITED TO, FOUNDATION WALLS, FOOTINGS AND SLAB LOCATIONS AND ELEVATIONS, WERE TAKEN FROM DRAWINGS AND INFORMATION REFERENCED ABOVE.
8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES THAT MAY EXIST.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITIES AND BELOW GROUND STRUCTURES IN THE AREA PRIOR TO COMMENCEMENT OF WORK. ANY CONFLICTS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER.
10. THESE DRAWINGS DO NOT ADDRESS SAFETY ISSUES RELATED TO THE EXCAVATION AND SHORING WORK. OTHERS SHALL BE RESPONSIBLE FOR SITE SAFETY AND PROVIDE A SAFETY PLAN CONFORMING TO OSHA REGULATIONS AND ALL APPLICABLE LAWS. THE SITE SAFETY PLAN MUST ALSO BE SUBMITTED TO AND APPROVED BY THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION (DOT).
11. BARRIERS AND FENCING AROUND THE SITE MUST BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE 2014 NEW YORK CITY BUILDING CODE AND ALL OTHER APPLICABLE LAWS AND CODES.
12. PLEASE REFER TO THE LATEST EDITION OF THE MONITORING PLAN FOR THIS PROJECT WITH REGARD TO MONITORING LIMITS, LOCATIONS OF MONITORING DEVICES, AND PROTOCOL FOR EXCEEDANCES. AS STATED IN GES' GEOTECHNICAL REPORT, A MONITORING PLAN MUST BE ASSEMBLED BY AN EXPERIENCED GEOTECHNICAL ENGINEER AND IMPLEMENTED PRIOR TO DEMOLITION OF THE EXISTING BUILDING.
13. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND PRECAUTIONS NECESSARY TO PREVENT DAMAGE AND SETTLEMENT OF EXISTING AND NEW CONSTRUCTION, INSIDE AND/OR OUTSIDE THE PROJECT LIMITS, AS SHOWN IN THE MONITORING PLAN.
14. AT NO POINT SHALL THE WORK DISCUSSED HEREIN NEITHER UNDERMINE, NOR DISTURB ANY EXISTING ADJACENT BUILDINGS AND PROPERTIES. A 1H:1V SLOPE OR FLATTER BELOW ALL ADJACENT FOUNDATIONS MUST BE PRESERVED AT ALL TIMES.
15. EXCAVATION REQUIRED FOR ENVIRONMENTAL REMEDIATION OF THE SITE MAY BE OVER AND ABOVE WHAT IS SHOWN ON THESE PLANS. GES MUST BE INFORMED AND GIVEN THE OPPORTUNITY TO MODIFY THESE DRAWINGS, SHOULD THIS EXCAVATION WORK BE OVER AND ABOVE WHAT IS SHOWN ON THESE DRAWINGS.
16. THE GENERAL EXCAVATION SHALL CONSIST OF EXCAVATING AND REMOVING THE EXISTING SOIL TO REACH THE DESIRED SUBGRADE LEVEL. THIS WOULD ALSO INCLUDE REMOVAL OF EXISTING REMNANT FOUNDATIONS.
17. CONTRACTOR SHALL PROVIDE PROTECTION OF ALL EXCAVATION SLOPES FROM INSTABILITY AND DETERIORATION DUE TO RAIN, WIND, AND/OR SNOW/ICE.
18. NYC DOB SHALL BE NOTIFIED AT LEAST 24 HOURS BUT NO MORE THAN 48 HOURS PRIOR TO COMMENCEMENT OF EARTHWORK.
19. ADJACENT BUILDING OWNERS SHALL BE NOTIFIED 10 DAYS PRIOR TO COMMENCEMENT OF WORK.

SPECIAL INSPECTIONS:

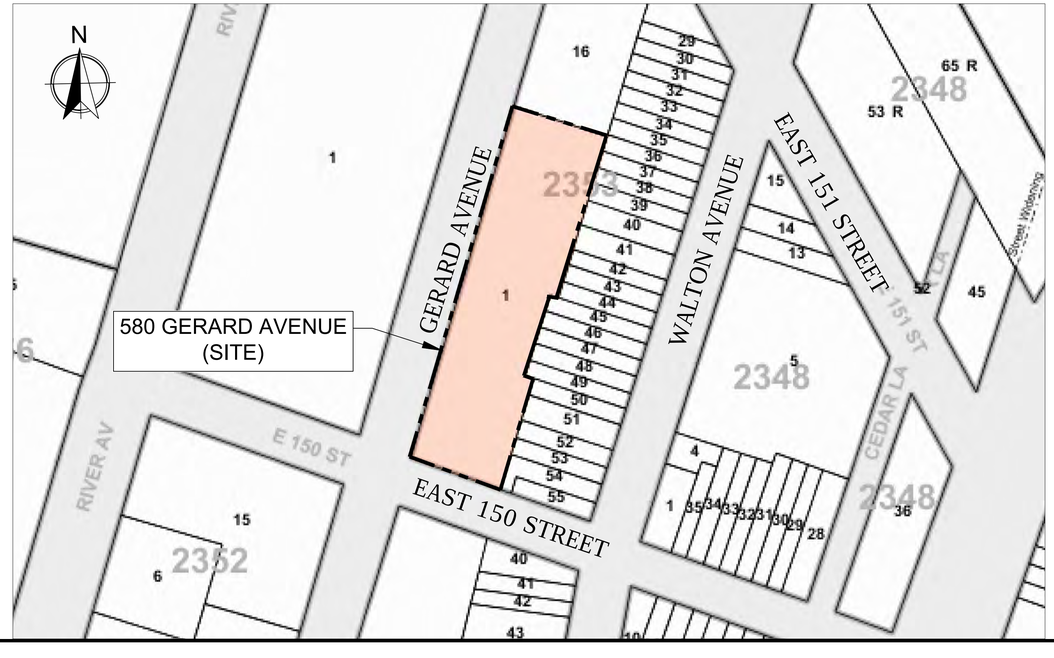
1. ALL WORK CONTAINED HEREIN SHALL BE SUBJECT TO SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE NEW YORK CITY BUILDING CODE. REQUIRED SPECIAL INSPECTIONS MUST INCLUDE:
   - 1.1. UNDERPINNING - (BC 1704.20.3)
   - 1.2. EXCAVATIONS - SHEETING, SHORING AND BRACING - (BC 1704.20.2 & BC 3304.4.1)
   - 1.3. STRUCTURAL STABILITY - EXISTING BUILDINGS - (BC 1704.20.1)
   - 1.4. CONCRETE SAMPLING AND TESTING - (BC 1905.6 & BC 1913.10)
   - 1.5. SUBSURFACE CONDITIONS - FILL PLACEMENT AND IN-PLACE DENSITY - (BC 1704.7.2 & BC 1704.7.3)
   - 1.6. CONCRETE DESIGN MIX - (BC 1905.3 & BC 1913.5)
2. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER 72 HOURS PRIOR TO START OF WORK AND SHALL PROVIDE THE DESIGN ENGINEER WITH REGULAR PROGRESS NOTIFICATIONS UNTIL STRUCTURAL WORK IS COMPLETED.
3. SPECIAL INSPECTION AGENCY REPORTING RESPONSIBILITIES: HAZARDOUS CONDITIONS AND DISCREPANCIES:
4. SPECIAL INSPECTION AGENCIES ARE OBLIGATED TO REPORT INSPECTION DISCREPANCIES AND HAZARDOUS CONDITIONS IN ACCORDANCE WITH 1 RCNY 101-06 SECTION (B)(9).
   - 4.1. REPORTING DISCREPANCIES:
     - 4.2.1 NOTED DISCREPANCIES MUST BE REPORTED TO THE CONTRACTOR AND WHEN APPLICABLE TO THE SUPERINTENDENT OF CONSTRUCTION, SITE SAFETY COORDINATOR AND/OR SITE SAFETY MANAGER FOR CORRECTION.
     - 4.2.2 UNCORRECTED DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION OF THE OWNER AND REGISTERED DESIGN PROFESSIONAL OF RECORD PRIOR TO COMPLETION OF THAT PHASE OF WORK.
   - 4.2. REPORTING HAZARDOUS CONDITIONS:
     - 4.3.1 HAZARDOUS CONDITIONS AND DISCREPANCIES WITH INHERENT DANGEROUS CONDITIONS MUST BE RESOLVED IMMEDIATELY BY ENGAGING THE CONTRACTOR AND OTHER APPLICABLE SITE PERSONNEL.
     - 4.3.2 UNCORRECTED HAZARDOUS CONDITIONS MUST BE IMMEDIATELY REPORTED BY CALLING THE DEPARTMENT OF BUILDINGS.
   - 4.3. MONITORING - THE 2014 BUILDING CODE INTRODUCED REQUIREMENTS FOR DOCUMENTING AND MONITORING THE STRUCTURAL STABILITY OF STRUCTURES UNDER CONSTRUCTION AND/OR ADJACENT STRUCTURES (1704.20.7.1).
   - 4.4. REPORT ALL IMMEDIATE EMERGENCIES TO 911.
   - 4.5. REPORT OTHER HAZARDOUS CONDITIONS TO 212-393-2127 OR 311 AS NECESSARY (24 HOURS A DAY, 7 DAYS A WEEK).

DRAWING LIST:

KEY PLAN:

LEGEND:

PROPERTY LINE
2353 BLOCK NUMBER
1 LOT NUMBER



PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	UPDATED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	UPDATED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	UPDATED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 6A

KEY PLAN AND GENERAL NOTES

PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-100.03
SHEET NO:	1 OF 14

DRAFT FOR DISCUSSION

STRUCTURAL STEEL:

1. STRUCTURAL STEEL DESIGN CONFORMS TO "SPECIFICATION FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" (AISC, LATEST EDITION).
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES, AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:

   ASTM A-36 PLATES, ANGLES, AND BARS UNLESS NOTED OTHERWISE

   ASTM A-500, GRADE B STEEL HSS ROUND

   ASTM A-325, TYPE X ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS

   ASTM F-1554, GRADE 50, ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE.
3. SUBMIT SHOP DRAWINGS, INCLUDING ALL CONNECTIONS, FOR APPROVAL PRIOR TO FABRICATION.
4. WELDING SHALL CONFORM TO "STRUCTURAL WELDING CODE - STEEL" (AWS D1.1) LATEST EDITION.
5. ALL SHOP AND FIELD WELDS SHALL BE MADE BY CERTIFIED WELDERS, AND SHALL CONFORM TO AWS D1.1 UNLESS NOTED OTHERWISE. ALL WELDS SHALL DEVELOP THE FULL STRENGTH OF THE MEMBERS OR COMPONENTS BEING CONNECTED UNLESS NOTED OTHERWISE.
6. ELECTRODES FOR ALL FIELD AND SHOP WELDING SHALL CONFORM TO AWS E70-XX SERIES.
7. ALL WELDING SHALL BE INSPECTED IN THE FIELD BY QUALIFIED WELDING INSPECTORS.
8. DETAILING, FABRICATION OF STRUCTURAL STEEL SHALL BE PERFORMED TO CONFORM TO THE OSHA REQUIREMENTS FOR THE ERECTION OF STRUCTURAL STEEL.

UNDERPINNING NOTES:

1. THE UNDERPINNING DETAILS SHOWN HEREWITH ARE A GENERAL GUIDELINE FOR THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE EXISTING ADJACENT BUILDING'S CONDITION AND BOTTOM FOOTING ELEVATION IN FIELD. NOTIFY ENGINEER OF RECORD PRIOR TO WORK COMMENCING.
2. THE CONTRACTOR SHALL COMPLY WITH ALL THE RELEVANT PROVISIONS OF THE NEW YORK CITY BUILDING CODE.
3. ALL FOUNDATION AND EARTHWORK OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE AND ALL LOTS, BUILDINGS AND SERVICE FACILITIES ADJOINING THE FOUNDATION AND EARTHWORK AREAS SHALL BE PROTECTED AND SUPPORTED.
4. ALL UNDERPINNING OPERATIONS ARE SUBJECT TO SPECIAL INSPECTION.
5. THE CONTRACTOR SHALL RETAIN A LICENSED SURVEYOR TO SURVEY ALL LOAD BEARING WALLS, PIERS AND COLUMNS TO BE UNDERPINNED. THE SURVEYOR SHALL CHECK THE ELEVATION OF SUCH STRUCTURAL ELEMENTS DAILY FOR THE DURATION OF THE WORK. AS A MINIMUM, THE EXTERIOR WALL SHALL BE MONITORED IN ACCORDANCE WITH THE MONITORING PLAN FOR THIS PROJECT.
6. THE CONTRACTOR AND/OR SUB-CONTRACTOR(S) SHALL HAVE COMPLETED NO LESS THAN FIVE (5) UNDERPINNING PROJECTS OF A COMPARABLE SIZE AND TYPE TO THIS PROJECT, AND MUST HAVE AT LEAST FIVE (5) YEARS OF EXPERIENCE IN THE WORK AND/OR APPLICABLE TRACE. SUBMIT EVIDENCE OF SUCH EXPERIENCE FOR REVIEW.
7. ADJACENT PROPERTY TO BE UNDERPINNED WHERE NOTED ON SOE-103, SOE-104 AND SOE-105. PRIOR TO UNDERPINNING WORK, PRE-CONSTRUCTION SURVEY MUST BE PERFORMED ON ALL INTERIOR AND EXTERIOR BUILDING AREAS WITHIN AT LEAST 25 FEET OF THE SITE. COPIES OF THE SURVEY, INCLUDING PHOTOGRAPHS, VIDEOS, ETC. SHALL BE PROVIDED TO DESIGN ENGINEER AND APPLICABLE NEIGHBORING OWNERS (IF IN LICENSE AGREEMENT) PRIOR TO WORK COMMENCING.
8. THERE SHALL BE A PRE-CONSTRUCTION MEETING WITH THE OWNER, ARCHITECT, DESIGN ENGINEER, GENERAL CONTRACTOR AND ANY SUB-CONTRACTOR(S) PRIOR TO WORK COMMENCING.
9. THE CONTRACTOR SHALL REQUEST PERMISSION TO ENTER ANY BUILDING BEING UNDERPINNED. THE CONTRACTOR SHALL NOT TRESPASS ONTO ANY ADJACENT /NEIGHBORING BUILDING PROPERTY WITHOUT EXPRESSED WRITTEN CONSENT BY APPLICABLE ADJACENT/NEIGHBORING BUILDING'S OWNER AND ACCESS AGREEMENT IN PLACE.
10. NO FOUNDATION OR EARTHWORK PERMIT SHALL BE ISSUED UNTIL AT LEAST FIVE DAYS AFTER A WRITTEN NOTICE OF THE PERMIT APPLICATION HAS BEEN PROVIDED BY THE APPLICANT TO THE OWNERS OF ALL ADJOINING LOTS, BUILDINGS AND SERVICE FACILITIES WHO MAY BE AFFECTED BY THE PROPOSED UNDERPINNING WORK.
11. THE UNDERPINNING FOUNDATIONS SHALL BEAR ON SUBGRADE HAVING ALLOWABLE BEARING CAPACITY EQUAL TO OR GREATER THAN THE SUBGRADE OF THE EXISTING FOUNDATION. THE SUBGRADE AT THE LEVEL OF THE EXISTING FOUNDATION SHALL BE INSPECTED BY A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER FROM GES, P.C. TO VERIFY THE BEARING PRESSURE, MEETS OR EXCEEDS THE PRE-EXISTING ALLOWABLE BEARING PRESSURE.
12. DO NOT TRANSFER THE BUILDING LOAD ONTO NEW UNDERPINNING WALLS UNTIL THE CONCRETE HAS ATTAINED 50% OF THE DESIGN STRENGTH, AS CONFIRMED BY THE CYLINDER TESTS, OR 72 HOURS, WHICHEVER OCCURS FIRST. DRYPACKING/SHIMMING WORK MAY COMMENCE ON NEXT WORK DAY MORNING UNLESS OTHERWISE DIRECTED BY GES, P.C.
13. DO NOT PLACE BACKFILL AGAINST NEW UNDERPINNING WALLS UNTIL WALLS HAVE ATTAINED 50% OF THE CONCRETE DESIGN STRENGTH, AS CONFIRMED BY THE CYLINDER TESTS, OR 72 HOURS, WHICHEVER OCCURS FIRST.
14. ALL TIMBER LAGGING FOR UNDERPINNING TO REMAIN SHALL BE PRESSURE-TREATED LUMBER AND/OR OTHER APPROVED MATERIAL.
15. PLEASE REFER TO DEWATERING NOTES ON SOE-102.
16. ALL SIDES OF SLOPES OF EXCAVATIONS, EMBANKMENTS, AND BOTTOM OF COMPLETED UNDERPINNING PIERS, SHALL BE INSPECTED AFTER RAINSTORMS.
17. EXCAVATED MATERIAL AND SUPERIMPOSED LOADS SUCH AS EQUIPMENT AND TRUCKS SHALL NOT BE PLACED CLOSER TO THE EDGE OF THE EXCAVATION THAN A DISTANCE EQUAL TO ONE AND ONE-HALF TIMES THE DEPTH OF SUCH EXCAVATION.
18. THE UNDERPINNING SHALL BE INSTALLED IN A MANNER SUCH THAT THE EXPOSED FACE OF THE CONCRETE IS VERTICAL (OR AS OTHERWISE SPECIFIED), CLEAN AND NEAT.
19. THE HEIGHT OF THE UNDERPINNING PIERS SHALL NOT EXCEED THE HEIGHTS SHOWN ON SOE-106, SOE-107, AND SOE-108. THE LIFTS SHALL BE WITHOUT INTERMEDIATE HORIZONTAL CONSTRUCTION JOINTS (COLD JOINTS).
20. PLEASE REFER TO SOE-113 FOR DRY-PACK AND SHIMMING NOTES.

GENERAL SOE INSTALLATION SEQUENCE:

1. AT A MINIMUM, CONTRACTOR MUST PROVIDE SUBMITTALS FOR INSTALLATION MEANS AND METHODS, GROUT INFILL AND CONCRETE MIX, SOLDIER PILE IDENTIFICATION PLAN, AND EQUIPMENT TO BE USED, FOR REVIEW AND APPROVAL BY GES, P.C., PRIOR TO MOBILIZATION ON-SITE.
2. INSTALL TEMPORARY CONSTRUCTION FENCE, AND ENSURE SUFFICIENT SPACE FOR PEDESTRIANS AND CARS, OR OTHERWISE PERMITTED BY NYC DEPARTMENT OF TRANSPORATION. PROTECT SIDEWALK FROM DAMAGE.
3. THE CONTRACTOR SHALL RETAIN A NYS LICENSED SURVEYOR TO LAY OUT ALL SOLDIER PILE LOCATIONS, PRIOR TO COMMENCEMENT OF DRILLING.
4. LOCALLY DEMOLISH SIDEWALK OR ASPHALT SLABS AS NEEDED AND DRILL SOLDIER PILES TO THE MINIMUM TIP ELEVATION AS SPECIFIED ON SOE-106 THROUGH SOE-109, AND IN LOCATIONS AS SHOWN ON SOE-103 THROUGH SOE-105.
5. PERFORM GENERAL EXCAVATION SUCH THAT NO BUILDING OR SIDEWALK, EXCEPT AS REQUIRED TO INSTALL SOLDIER PILES AND AS APPROVED BY THE NYC DOT, IS UNDERMINED OR DAMAGED, AND A MINIMUM OF 1:1 SLOPE IS MAINTAINED AGAINST ALL SIDES OF THE SITE, LEAVING ROOM TO INSTALL AND TEST TIEBACKS, UNDERPINNING, AND INSTALL WALERS, RAKERS, AND HEEL BLOCKS.
6. CONFIRM BUILDING MOVEMENT IN ADJACENT BUILDINGS IS LESS THAN STOP WORK LIMITS THROUGHOUT GENERAL SOE INSTALLATION PROCEDURE.
7. EXCAVATE ALONG SOUTH AND WEST WALLS TO NO DEEPER THAN EL. ±19.0. EXCAVATION LATERALLY SHALL ONLY BE LARGE ENOUGH TO INSTALL LAGGING BOARDS AND MUST BE INSTALLED AS SOON AS POSSIBLE, AS SOIL IS REMOVED. ANY AREAS OF SOIL LOSS BEHIND LAGGING BOARDS MUST BE IMMEDIATELY REPLACED SUCH THAT THE LAGGING BOARDS ARE TIGHT AGAINST THE SOIL, AND INSTALLED AS SHOWN ON SOE-110 AND SOE-111. MAINTAIN 1H:1V SLOPE OR FLATTER ALONG FOUNDATION FOR 620 GERARD AVENUE.
8. INSTALL FIRST ROW OF WALER BEAMS ON WEST AND SOUTH SIDES OF SITE, AT EL. ±20.5' AS SHOWN ON SOE-106 AND SOE-107.
9. LOCALLY EXCAVATE AND CONSTRUCT HEEL BLOCKS AND CONNECT WITH RAKERS FOR WEST AND SOUTH WALLS AS SHOWN ON SOE-106 AND SOE-107. A BERM WITH A SLOPE OF 1H:1V OR FLATTER MUST BE LEFT IN PLACE AGAINST THE WEST AND SOUTH WALLS, UNTIL CONTINUOUS WALER, RAKER, AND HEEL BLOCK ARE COMPLETED.
10. CONTINUE EXCAVATION ALONG NORTHWEST CORNER TO NO DEEPER THAN EL. ±23.5', OR ABOUT ONE (1) FOOT ABOVE BOTTOM OF NORTH ADJACENT FOUNDATION, WHICHEVER IS SHALLOWER. MARK OUT ENTIRE UNDERPINNING SEQUENCE ON BUILDING WALL, AS SHOWN ON SOE-107.
11. CONSTRUCT FIRST LEVEL OF UNDERPINNING ALONG NORTH WALL AS SHOWN ON SOE-107. CONFIRM BUILDING MOVEMENT HAS NOT EXCEEDED STOP WORK LIMITS AS SPECIFIED IN THE MONITORING PLAN.
12. EXCAVATE ALONG EAST WALL TO NO DEEPER THAN EL. ±23.5, INSTALLING TIMBER LAGGING AS SHOWN ON SOE-108.
13. INSTALL UPPER W14X90 WALER AS SHOWN ON SOE-108.
14. EXCAVATE FOR ELEVATOR PIT HEEL BLOCKS ALONG EAST WALL. CONSTRUCT HEEL BLOCKS AND INSTALL UPPER W12X72 RAKERS AS SHOWN ON SOE-108. LEAVE A BERM WITH A SLOPE OF 1H:1V ALONG ENTIRE EAST WALL EXCEPT LOCALLY ALONG LENGTHS OF UPPER W12X72 RAKERS.
15. EXCAVATE ALONG EAST WALL TO NO DEEPER THAN EL. ±19.5', INSTALLING TIMBER LAGGING AS SOON AS POSSIBLE, AND INSTALL W14X120 WALER BEAMS SOUTH OF THE ELEVATOR PIT, AS SHOWN ON SOE-108. BERM WITH A SLOPE OF 1H:1V OR FLATTER MUST BE KEPT IN PLACE ALONG 129 EAST 150TH STREET BUILDING, AS SHOWN ON SOE-108, IF ENCOUNTERED.
16. LOCALLY EXCAVATE AND CONSTRUCT HEEL BLOCKS FOR ALL EAST WALL, HEEL BLOCKS SOUTH OF THE ELEVATOR PIT. LEAVE A BERM OF 1H:1V OR FLATTER ALONG ENTIRE EAST WALL, EXCEPT LOCALLY ALONG LENGTHS OF W12X72 RAKERS.
17. DRILL, INSTALL, TEST, AND LOCK OFF ALL FIRST LEVEL OF UNDERPINNING TIEBACKS ALONG NORTH WALL. CONFIRM BUILDING MOVEMENT HAS NOT EXCEEDED STOP WORK LIMITS AS SPECIFIED IN THE MONITORING PLAN.
18. INSTALL SECOND LEVEL OF UNDERPINNING ALONG NORTH WALL AS SHOWN ON SOE-105 THROUGH SOE-108. CONFIRM BUILDING MOVEMENT HAS NOT EXCEEDED STOP WORK LIMITS AS SPECIFIED IN THE MONITORING PLAN.
19. DRILL, INSTALL, TEST, AND LOCK OFF ALL SECOND LEVEL OF UNDERPINNING TIEBACKS ALONG NORTH WALL. CONFIRM BUILDING MOVEMENT HAS NOT EXCEEDED STOP WORK LIMITS AS SPECIFIED IN THE MONITORING PLAN.
20. EXCAVATE ALONG THE EAST WALL TO NO DEEPER THAN EL. ±12.5', INSTALLING TIMBER LAGGING AS SOON AS POSSIBLE, AS SHOWN IN SOE-108, AND INSTALL LOWER W14X90 WALER AS SHOWN ON SOE-108.
21. CONNECT LOWER W14X90 WALER TO HEEL BLOCKS AT ELEVATOR PIT ALONG EAST WALL WITH W12X72 RAKERS, AS SHOWN ON SOE-108.
22. COMPLETE EXCAVATION TO DESIGN SUBGRADE ELEVATIONS ALONG ALL SIDES OF SITE. SIMULTANEOUSLY INSTALL TIMBER LAGGING AS SHOWN ON SOE-110, AS SOON AS POSSIBLE.
23. CONSTRUCT FOUNDATION CELLAR SLAB AND WALLS IN ACCORDANCE WITH FOUNDATION DRAWINGS.
24. CONSTRUCT FIRST FLOOR SLAB TO LATERALLY BRACE FOUNDATION WALLS.
25. UPON COMPLETION OF FIRST FLOOR SLAB, BACKFILL ANNULAR SPACE BETWEEN FOUNDATION WALL AND TEMPORARY SOE WALL, WHERE BLIND SIDE WATERPROOFING IS NOT USED, WITH FLOWABLE FILL HAVING A COMPRESSIVE STRENGTH NOT EXCEEDING 500 PSI IN DESIGN COMPRESSIVE STRENGTH.
26. CUT SOLDIER PILES BELOW SIDEWALK ELEVATION OR GRADE, AND REMOVE UPPERMOST LAGGING AS NEEDED TO RE-CONSTRUCT SIDEWALK AND REAR YARDS.

SOIL CLASSIFICATION:

- FILL (NYCBC CLASS 7): THE FILL GENERALLY CONSISTS OF BROWN AND BLACK MEDIUM TO FINE SAND, WITH VARYING AMOUNTS OF COARSE SAND, SILT, GRAVEL, BRICK AND CONCRETE FRAGMENTS, MICA, AND WOOD FRAGMENTS.
- NATURAL SAND AND GRAVEL (NYCBC [2A, 3B, 3A, 4B, 6]): ENCOUNTERED UNDERLYING STRATUM 1, STRATUM 2 GENERALLY IS COMPRISED OF RED-BROWN AND BROWN MEDIUM TO FINE SAND, WITH VARYING AMOUNTS OF SILT, GRAVEL, AND BOULDERS. STRATUM 2 APPEARS TO BE NATURALLY DEPOSITED SAND WHICH TRENDS INTO POSSIBLE GLACIAL TILL AT DEEPER DEPTHS, WHICH IS EVIDENCED BY THE PRESENCE OF HIGHER GRAVEL CONTENT WITHIN THE SAMPLES RECOVERED, AND BOULDERS ENCOUNTERED.
- DECOMPOSED ROCK (NYCBC [1D, 2A, 3A]): A THIN LAYER OF DECOMPOSED ROCK WAS ENCOUNTERED DIRECTLY ABOVE MORE COMPETENT ROCK IN SEVERAL OF THE BORINGS. IN MOST CASES, THE DECOMPOSED ROCK LAYER WAS SOFT ENOUGH TO BE SAMPLED WITH AN SPT SPLIT-SPOON SAMPLER, WHICH WAS GENERALLY COMPRISED OF LIGHT BROWN, WHITE, AND GRAY COARSE TO FINE SAND AND ROCK FRAGMENTS, WITH VARYING AMOUNTS OF GRAVEL, SILT, AND CLAY.
- COMPETENT ROCK (NYCBC [1C, 1A]): COMPETENT ROCK WAS ENCOUNTERED AT DEPTHS RANGING FROM ABOUT 22 FEET IN (SOUTH END OF SITE) TO 43 FEET (NORTH END OF SITE). STRATUM 4 GENERALLY CONSISTS OF MEDIUM HARD TO HARD WHITE AND GRAY CALCITIC SCHIST, BLOCKY TO BROKEN, WITH WEATHERED VERTICAL AND HORIZONTAL JOINTS.
- PLEASE SEE GES' GEOTECHNICAL REPORT FOR MORE INFORMATION REGARDING SOIL CLASSIFICATION.

CONCRETE :

1. ALL MATERIALS, DESIGN, TESTING AND WORKMANSHIP SHALL MEET THE REQUIREMENTS OF THE NYC BUILDING CODE (2014).
2. ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM OF 5,000 psi STRENGTH AT 28 DAYS UNLESS OTHERWISE NOTED ON PLANS AND SCHEDULES. CONTRACTOR SHALL PROVIDE EIGHT (8) TEST CYLINDERS PER TRUCK OR BATCH OF CONCRETE FOR THE UNDERPINNING AND FOR HEEL BLOCK, AS TAKEN DIRECTLY FROM THE MIXER. FOR THE SOLDIER PILES GROUT INFILL, CONTRACTOR SHALL PROVIDE EIGHT (8) 2" BY 2" BY 2" TEST CUBES PER TRUCK OR BATCH OF GROUT, AS TAKEN DIRECTLY FROM THE MIXER. CONCRETE CYLINDERS AND GROUT CUBES SHALL BE TESTED: TWO (2) AT 3 DAYS, TWO (2) AT 7 DAYS, TWO (2) AT 28 DAYS AND HOLDING TWO (2) IN RESERVE. CONCRETE SHALL BE SAMPLED FROM EACH UNDERPINNING PIER, UNLESS OTHERWISE ADVISED BY GES, PC.
3. CONCRETE SHALL BE AIR-ENTRAINED @ 6% (± 1%).
4. CONCRETE SHALL HAVE A SLUMP OF 4" (± 1").
5. DRY PACKING SHOULD BE A MIXTURE 1 PART NON SHRINK CEMENT TO 2 PARTS DAMP SAND WITH ZERO SLUMP OR A HIGH PERFORMANCE NON-SHRINK GROUT, 6,000 psi MIN.
6. CONCRETE SHALL BE PROTECTED AGAINST FROST.

TIMBER LAGGING NOTES:

1. PLEASE REFER TO SOE-110 AND SOE-111 FOR LAGGING DETAILS.
2. INSTALL SOLDIER PILES IN THE LOCATIONS AND TO THE MINIMUM TIP ELEVATIONS SHOWN. ADJUST LOCATIONS FOR SOLDIER PILES AS REQUIRED TO AVOID EXISTING UTILITIES AND AS APPROVED BY THE DESIGN ENGINEER.
3. EXCAVATE AND INSTALL TIMBER LAGGING IN 2' MAXIMUM VERTICAL LIFTS TO APPROXIMATELY 1.5' BELOW THE HEIGHT OF WALER. DECREASE HEIGHT OF LAGGING LIFTS IF REQUIRED TO MAINTAIN A STABLE VERTICAL FACE. LAGGING MAY BE TUCKED BEHIND STEEL ANGLES WELDED TO SOLDIER PILES AS SHOWN IN DETAIL 4 ON SOE-110. LAGGING DIMENSIONS SHALL BE AS SHOWN ON SOE-110 AND COMPRISED OF UNTREATED MIXED HARDWOODS. EACH LIFT OF LAGGING SHALL BE BACKFILLED AS NECESSARY SO THAT THE SOIL IS TIGHT AND COMPACTED AGAINST THE LAGGING.
4. INSTALL 1 1/2" LOUVER BLOCKS BETWEEN TIMBER LAGGING BOARDS. IF REQUIRED, PACK LOUVER SPACE WITH STRAW OR POROUS GEOTEXTILE FABRIC TO CONTROL GROUNDWATER LEAKAGE AND PREVENT SOIL LOSS FROM BEHIND THE LAGGING.
5. CONTINUE EXCAVATING AND LAGGING TO SUBGRADE AND CONSTRUCT THE PROPOSED FOUNDATION.
6. STRUCTURAL MEMBERS OF EQUIVALENT OR GREATER STRENGTH MAY BE SUBMITTED FOR THOSE SHOWN. DESIGN ENGINEER SHALL BE NOTIFIED AND APPROVE OF PROPOSED MEMBER SUBSTITUTING PRIOR TO THEIR INSTALLATION.
7. TIMBER LAGGING MUST BE INSPECTED BY GES, P.C. AS PART OF SOE INSPECTION.

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	UPDATED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	UPDATED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	UPDATED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 6A

SUPPORT OF EXCAVATION NOTES

PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-101.03
SHEET NO:	2 OF 14

DRAFT FOR DISCUSSION

ANCHORS:

A. SUBMITTALS:

THE CONTRACTOR SHALL SUBMIT:

1. THE MATERIALS AND PROCEDURES THE CONTRACTOR INTENDS TO USE FOR GROUTING OF THE ANCHOR, THE COMPLETE LAYOUT OF THE ANCHOR ASSEMBLIES FROM HEAD TO TIP WITH ALL APPURTENANT DIMENSIONS AND DETAILS, INCLUDING BUT NOT LIMITED TO, LOWER ANCHORAGE, CENTERING DEVICES, ANCHOR HEAD DETAILS, ETC.

2. PROCEDURES FOR ANCHOR PLACEMENT, GROUTING AND TENSIONING INCLUDING TENSIONING SEQUENCE, INCLUDING THE METHOD OF MEASURING LOADS AND ELONGATIONS, AND CERTIFICATES OF GAUGE CALIBRATION AND JACK RAM AREA.

3. EXPERIENCE AND QUALIFICATIONS FOR PERSONS PERFORMING THE WORK AS SPECIFIED HEREIN.

4. GROUT MIX DESIGN.

5. DRILLER LOGS INCLUDING LENGTHS OF DRILL HOLES.

6. PROOF AND PERFORMANCE TESTING RESULTS INCLUDING ELONGATION RECORDS.

B. MATERIALS

1. ANCHOR ROD OPTIONS TO BE FULL THREADED RODS WITH YIELD STRENGTH OF 150 KSI.

2. BEARING PLATES, WASHERS AND NUTS SHALL CONFORM TO ANSI/ASTM F432 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153. ANCHORING DEVICES SHALL BE CAPABLE OF DEVELOPING 95% OF THE STEEL ULTIMATE STRENGTH OF THE STEEL ANCHOR RODS.

3. CEMENT GROUT TO BE USED FOR GROUTING THE ANCHORS INTO THE DRILL HOLE SHALL BE PROPORTIONED TO SATISFY THE REQUIREMENTS OF ACI STANDARD 318 FOR A SPECIFIED MINIMUM STRENGTH OF 5,000 psi AT 28 DAYS. WHEN TESTED BY U.S. ARMY CORPS OF ENGINEERS GUIDELINE CRD-C81-64, METHOD OF TEST FOR EXPANSION OF GROUT MIXTURES, THE MIX SHALL HAVE AN EXPANSION OF 2 TO 3 PERCENT AND NO BLEEDING SHALL BE EVIDENT.

C. INSTALLATION:

1. THE CONTRACTOR SHALL DRILL 6"Ø (MIN.) HOLES FOR ANCHORS THROUGH THE 6" Ø PVC SLOTS THROUGH UNDERPINNING AND BETWEEN SOLDIER PILES AT THE LOCATIONS SPECIFIED IN THE DRAWINGS. THE HOLES SHALL BE DRILLED WITHIN A 2 DEGREE TOLERANCE FROM THE ANGLES SHOWN ON THE DRAWINGS. ANCHOR HOLES SHALL BE LOCATED WITHIN MAXIMUM 6" OF THE INTENDED LOCATION. THE BOND LENGTH OF EACH ANCHOR SHALL EQUAL OR EXCEED THE MINIMUM LENGTH SPECIFIED INDICATED. EACH HOLE SHALL BE CHECKED FOR ALIGNMENT BEFORE COMMENCEMENT OF OTHER WORK. HOLES SHALL BE KEPT CLEAN UNTIL THE ANCHORS ARE INSTALLED.

2. HOLES IN SOIL MAY BE DRILLED BY ROTARY DRILLING WITH WATER OR CEMENT SLURRY AS FLUSHING MEDIUM ONLY. AIR OR PERCUSSION DRILLING METHODS SHALL NOT BE USED. CASINGS SHALL BE UTILIZED FOR DRILLING THROUGH UNSTABLE SOIL.

3. HOLES REJECTED BECAUSE OF OBSTRUCTIONS, NON-CONFORMANCE TO ALIGNMENT TOLERANCES, OR BECAUSE THEY INTERCEPT OTHER HOLES SHALL BE FILLED WITH GROUT AND ANOTHER HOLE SHALL BE DRILLED. THE DESIGN ENGINEER WILL SELECT THE LOCATION OF THE REPLACEMENT HOLE.

4. EACH ANCHOR HOLE SHALL BE CLEANED OF ALL DRILL CUTTINGS, SLUDGE, AND DEBRIS BEFORE THE ANCHOR IS INSERTED AND GROUTED.

5. CENTRALIZERS, SPACERS OR OTHER SUITABLE CENTERING DEVICES SHALL BE PLACED AT MAXIMUM 5'-0" INTERVALS FOR THE ANGLED ANCHORS OR IN A SUFFICIENT NUMBER TO ENSURE ADEQUATE GROUT COVER OVER THE ANCHOR ASSEMBLY THROUGHOUT THE ENTIRE ANCHOR LENGTH.

6. A SMOOTH PLASTIC SHEATHING, SHALL BE PROVIDED IN THE FREE STRESSING LENGTH AND SHALL GUARANTEE UNOBSTRUCTED ELONGATION DURING STRESSING.

7. ANCHOR CENTERLINES SHALL BE NORMAL TO THE BEARING PLATES.

8. FIRST, SECOND, THIRD AND EVERY OTHER FIFTH ANCHORS TO BE PERFORMANCE TESTED TO 133% OF TRANSFER LOAD AND THE REST TO BE PROOF TESTED TO 133% OF TRANSFER LOAD.

DEWATERING:

1. GES, P.C.'S "DRAFT GEOTECHNICAL REPORT" SHOWS THE DESIGN AND THE OBSERVED GROUNDWATER LEVELS TO BE AT ELEVATION +9.5 FEET AND +7.5 FEET, RESPECTIVELY (NAVD88 DATUM).
2. CONTROL ANY STORM OR SURFACE WATER USING SUMP PUMPS.
3. SHOULD GROUNDWATER CONDITIONS VARY FROM WHAT IS NOTED HEREIN, PLEASE ALERT GES, P.C. AS SOON AS POSSIBLE.

SURVEY AND MONITORING NOTES:

1. AN ADJACENT BUILDING MONITORING PLAN MUST BE BE PREPARED BY OTHERS AND MEET MINIMUM CRITERIA STATED IN THESE NOTES.
2. A PRE-CONSTRUCTION (PRE-CONDITION) SURVEY OF ALL ADJACENT STRUCTURES OR PORTIONS THEREOF WITHIN 25 FEET OF THE SITE SHALL BE PERFORMED PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE MONITORING PLAN. THE CONTRACTOR SHALL REVIEW AND FAMILIARIZE HIMSELF WITH THE RESULTS OF THE SURVEY. THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE ADJACENT STRUCTURES (INSIDE AND OUT) PRIOR TO STARTING THE WORK.
3. SURVEYOR TO MONITOR ALL NEIGHBORING BUILDINGS WITHIN 25 FEET OF THE SITE BY THE INSTALLATION OF OPTICAL SURVEY POINTS AT ABOUT 25 FEET INTERVALS FOR VERTICAL AND LATERAL MOVEMENT. NOTE THAT BUILDING MONITORING LOCATIONS ARE NOT SHOWN ON THE SUPPORT OF EXCAVATION PLAN FOR CLARITY. OPTICAL MONITORING POINTS SHALL BE LOCATED AT ROOF LINES, AT A MINIMUM.
4. CRACK GAUGES SHALL BE INSTALLED ON EXISTING NEIGHBORING BUILDING CRACKS AND ROUTINELY MONITORED DURING DEMOLITION, SOE EXCAVATION, AND FOUNDATION CONSTRUCTION OPERATIONS.
5. OBTAIN BASELINE READINGS OF THE MONITORING POINTS PRIOR TO DEMOLITION OF THE EXISTING ON-SITE BUILDING. HORIZONTAL AND VERTICAL SURVEY DATA TO BE OBTAINED BY A NEW YORK STATE LICENSED SURVEYOR.
6. PERFORM OPTICAL SURVEYS AT LEAST TWICE PER WEEK DURING DEMOLITION, EXCAVATION AND FOUNDATION CONSTRUCTION. IF MOVEMENTS OCCUR, INCREASE THE FREQUENCY OF THE READINGS AS RECOMMENDED BY THE ENGINEER RESPONSIBLE FOR THE MONITORING PLAN, AND DAILY DURING UNDERPINNING.
7. VIBRATION MONITORS (SEISMOGRAPHS) SHALL BE PLACED ADJACENT TO AREAS WHERE WORK IS BEING PERFORMED AS NEGOTIATED WITH THE NEIGHBORING BUILDING. NOTE THAT THE SEISMOGRAPHS ARE NOT SHOWN ON THE SUPPORT OF EXCAVATION PLAN FOR CLARITY.
8. BUILDING MOVEMENT AND VIBRATION CRITERIA:
   - 8.1. ALL MONITORING FREQUENCIES SHALL BE DETERMINED BY THE ENGINEER RESPONSIBLE FOR CREATING THE MONITORING PLAN.
   - 8.2. IF THE VERTICAL OR LATERAL BUILDING MOVEMENT REACHES 1/4 INCH, IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER, DESIGN ENGINEER AND OWNER.
   - 8.3. IF THE VERTICAL OR LATERAL BUILDING MOVEMENT REACHES 1/2 INCH, IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER, OWNER AND DESIGN ENGINEER AND STOP WORK. THE WORK SHALL RESUME UPON APPROVAL BY THE CONSTRUCTION MANAGER, OWNER, AND ENGINEER, OF APPROVED REMEDIAL MEASURES AND/OR MODIFIED CONSTRUCTION PROCEDURES.
   - 8.4. IF THE VIBRATIONS EXCEED 0.75 IPS AND/OR ANY INDIVIDUAL CRACK GAUGE READING EXCEEDS 4 mm, IMMEDIATELY INFORM THE CONSTRUCTION MANAGER, OWNER, DESIGN ENGINEER, AND STOP WORK. THE WORK SHALL RESUME UPON APPROVAL BY THE CONSTRUCTION MANAGER, OWNER, DESIGN ENGINEER OF APPROVAL REMEDIAL MEASURES AND/OR MODIFIED CONSTRUCTION PROCEDURES. OBSERVE NEIGHBORING STRUCTURE CONDITIONS, AND REVIEW AND MODIFY AS NECESSARY, MEANS AND METHODS FOR EXCAVATION, SUPPORT OF EXCAVATION, AND/OR UNDERPINNING PER CONSTRUCTION. WORK SHALL NOT COMMENCE UNTIL AGREED UPON CORRECTIVE ACTION IS IMPLEMENTED BY THE CONTRACTOR. NOTICE OF EXCEEDANCES MUST BE PROVIDED.
9. VIBRATION MONITORS SHALL TAKE REAL-TIME READINGS, AND REPORT REAL TIME EXCEEDANCES TO CONSTRUCTION MANAGER, DESIGN ENGINEER AND OWNER.
10. ALL MONITORING DATA SHALL BE PRESENTED TO THE CONSTRUCTION MANAGER, OWNER, DESIGN ENGINEER AT THE END OF EACH DAY OR AS AGREED TO THE DESIGN ENGINEER, OWNER, CONTRACTOR AND SITE SUPERINTENDENT.

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	UPDATED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	UPDATED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	UPDATED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

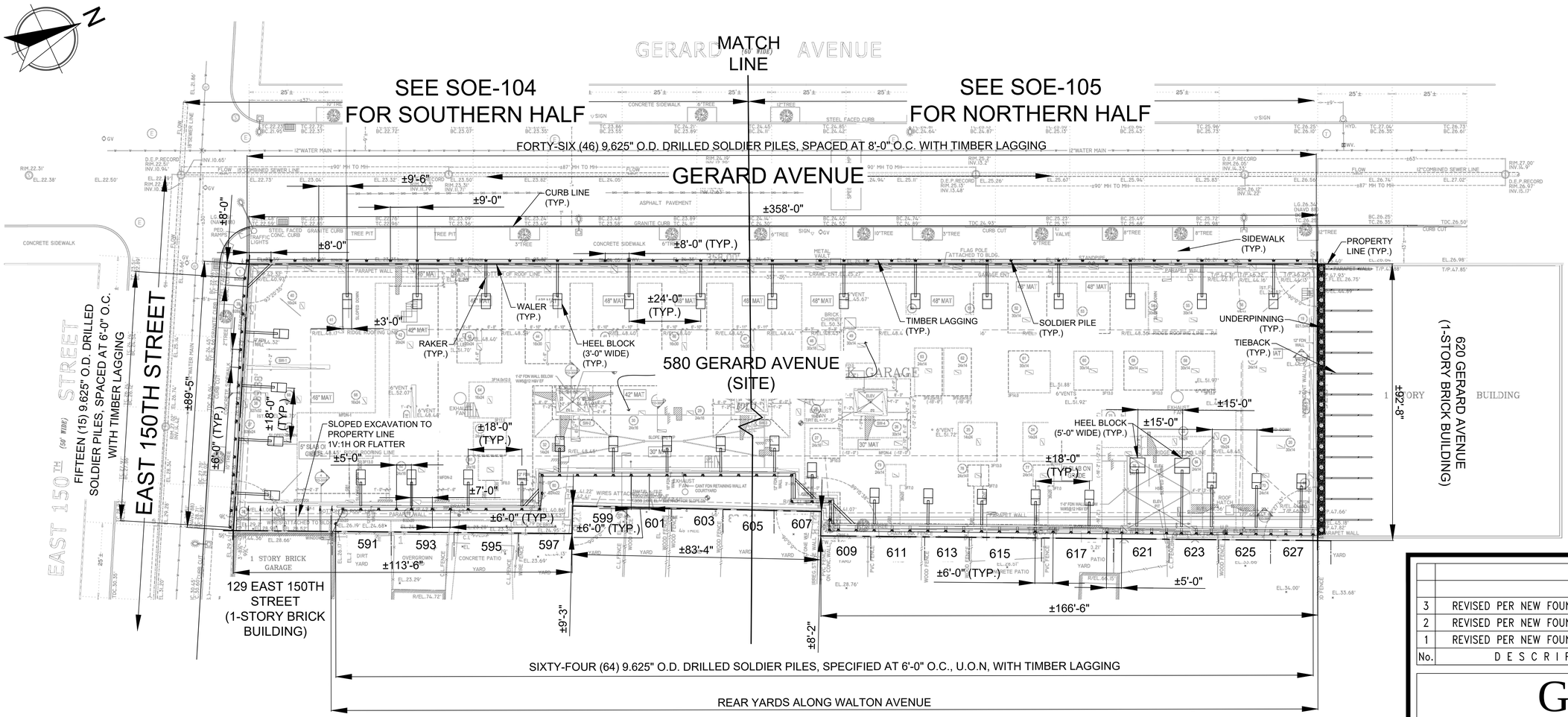
580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 6A

SUPPORT OF EXCAVATION NOTES

PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-102.03
SHEET NO:	3 OF 14

DRAFT FOR DISCUSSION



SUPPORT OF EXCAVATION PLAN

SCALE: NTS

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	REVISED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	REVISED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	REVISED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

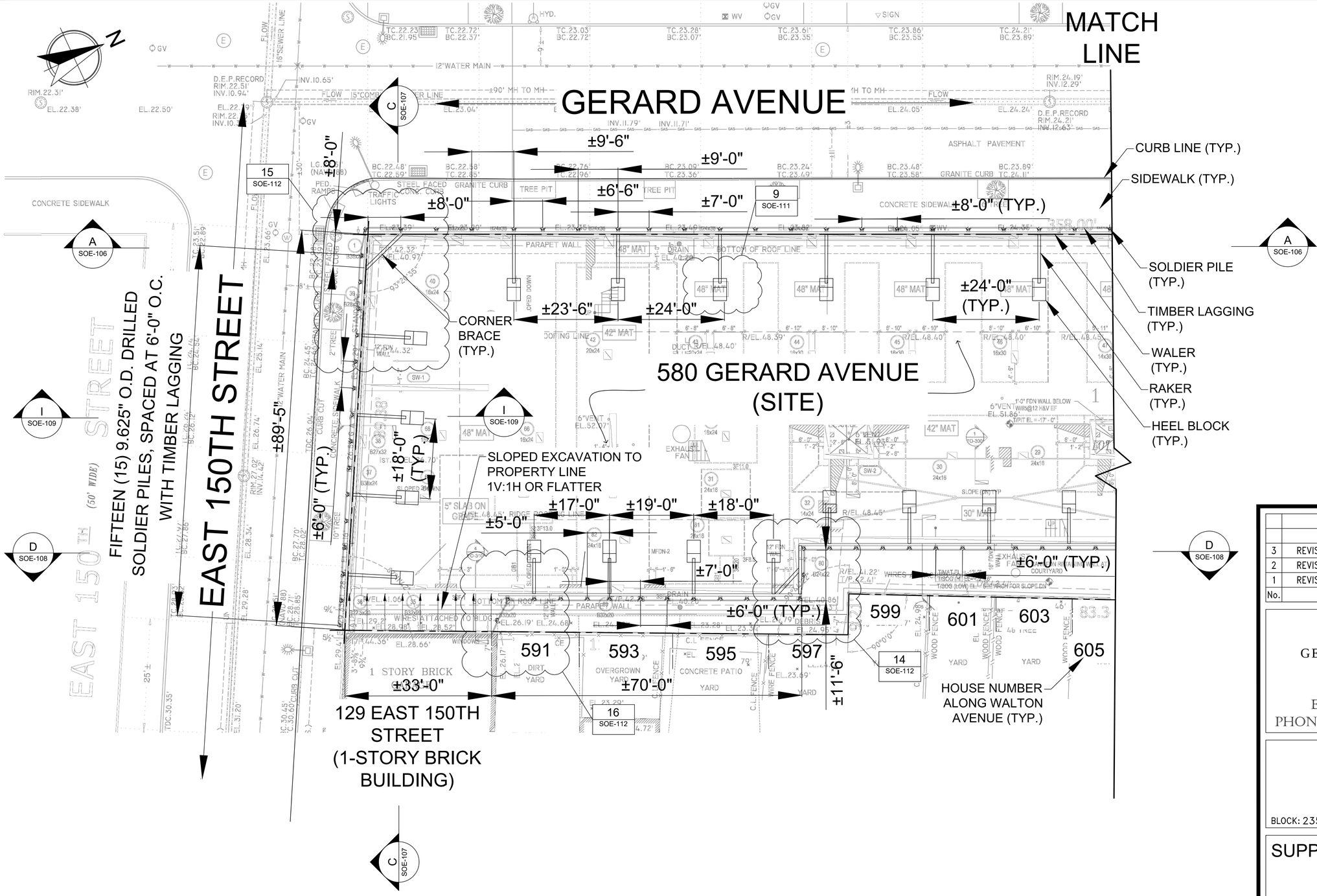
580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 6A

SUPPORT OF EXCAVATION PLAN

PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-103.03
SHEET NO:	4 OF 14

DRAFT FOR DISCUSSION



SUPPORT OF EXCAVATION PLAN - SOUTHERN HALF

SCALE: N.T.S.

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	REVISED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	REVISED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	REVISED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

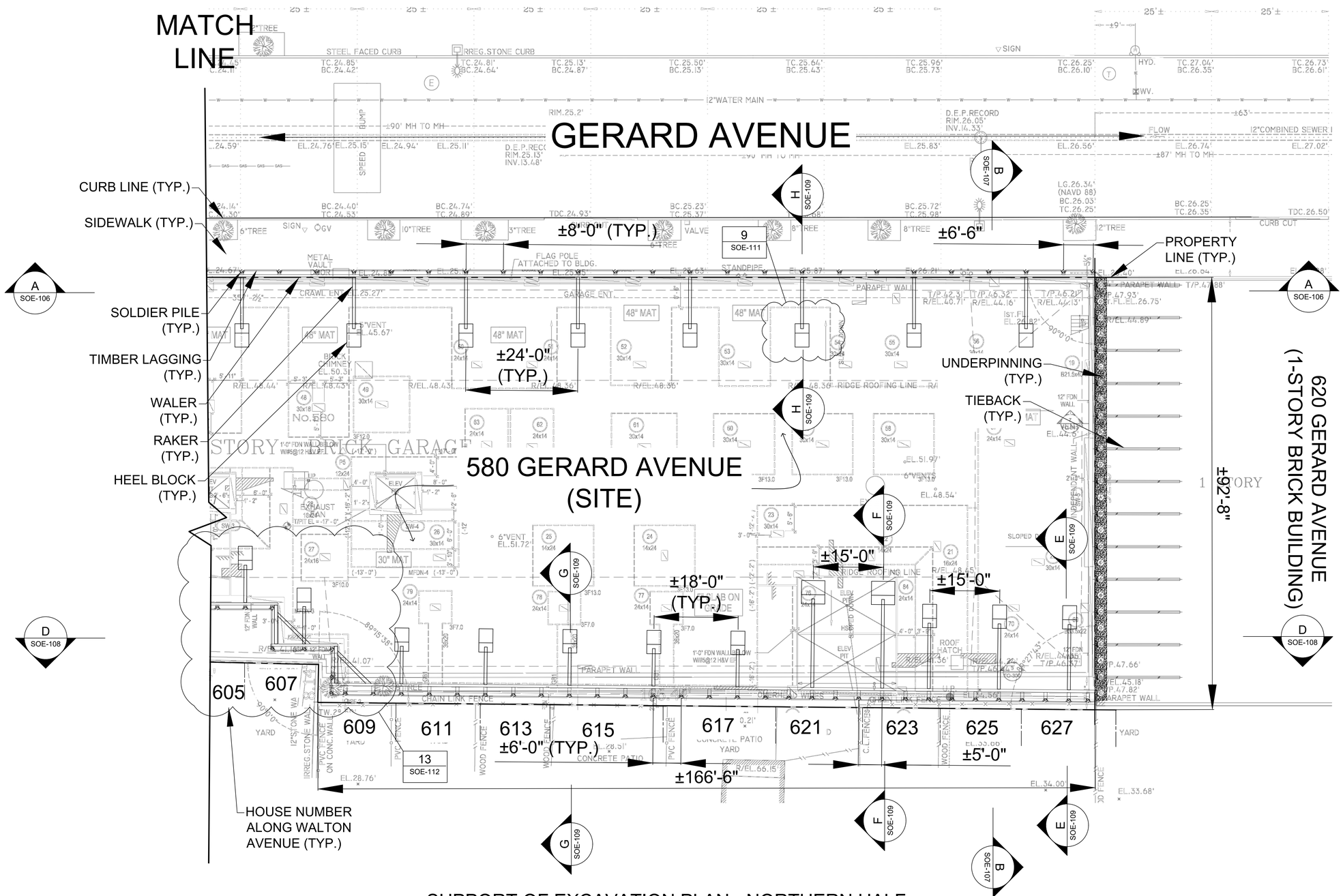
580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 6A

SUPPORT OF EXCAVATION PLAN SOUTHERN HALF

PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-104.03
SHEET NO:	5 OF 14

DRAFT FOR DISCUSSION



SUPPORT OF EXCAVATION PLAN - NORTHERN HALF

SCALE: N.T.S.

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	REVISED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	REVISED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	REVISED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

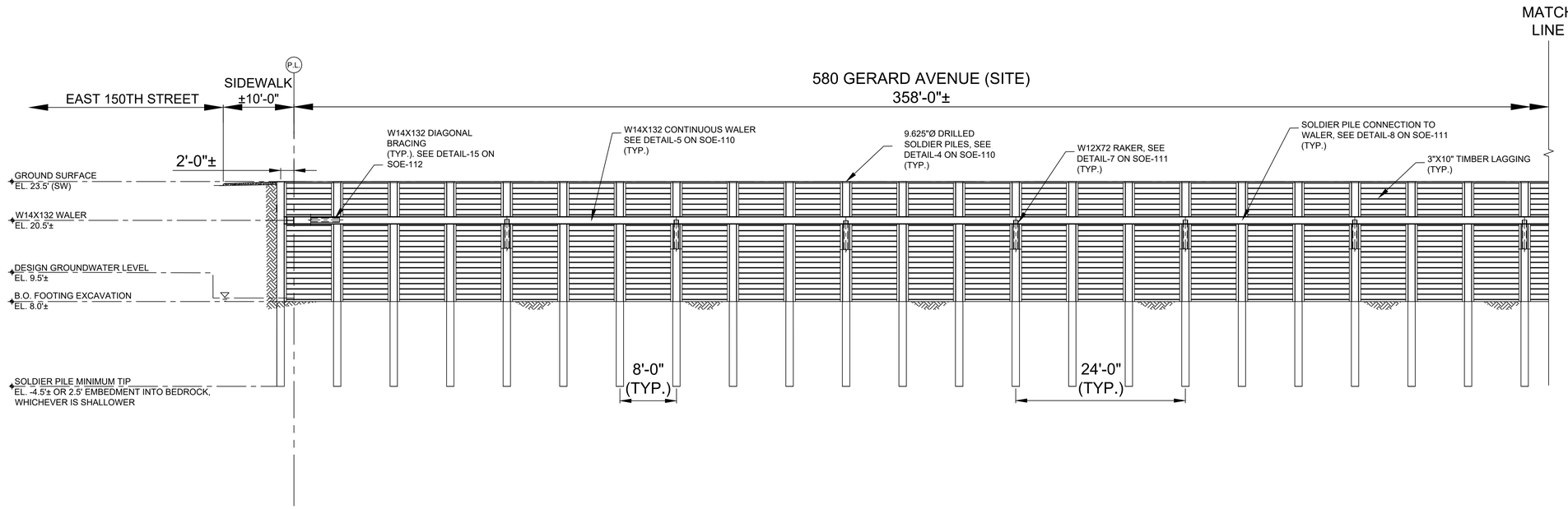
580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 6A

SUPPORT OF EXCAVATION PLAN NORTHERN HALF

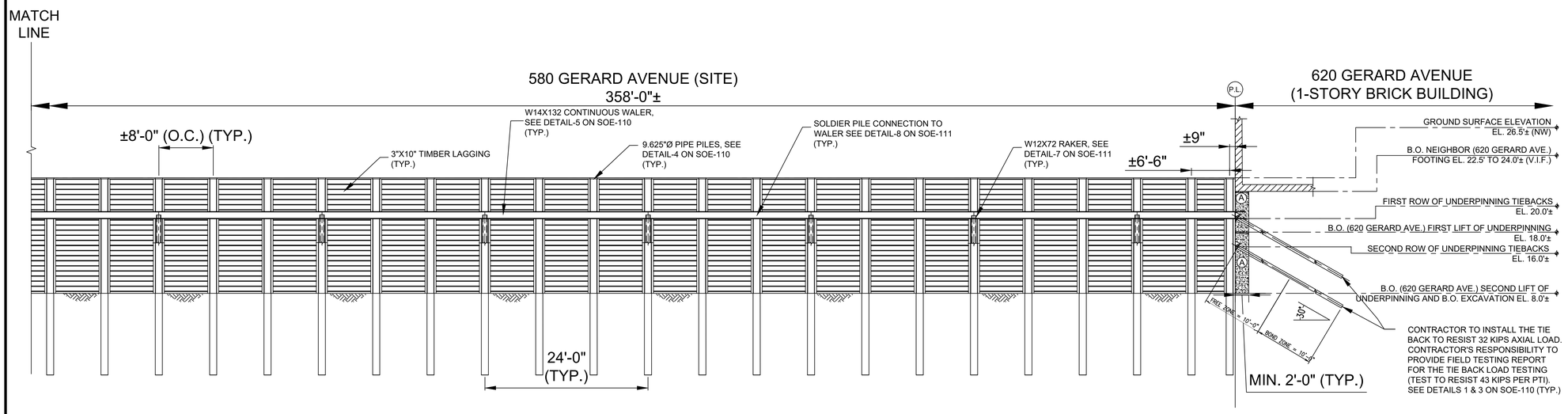
PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-105.03
SHEET NO:	6 OF 14

DRAFT FOR DISCUSSION



A SOE-106 — SECTION A (SOUTHERN HALF) (FACING WEST)

SCALE: N.T.S.



A SOE-106 — SECTION A (NORTHERN HALF) (FACING WEST)

SCALE: N.T.S.

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	UPDATED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	UPDATED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	UPDATED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

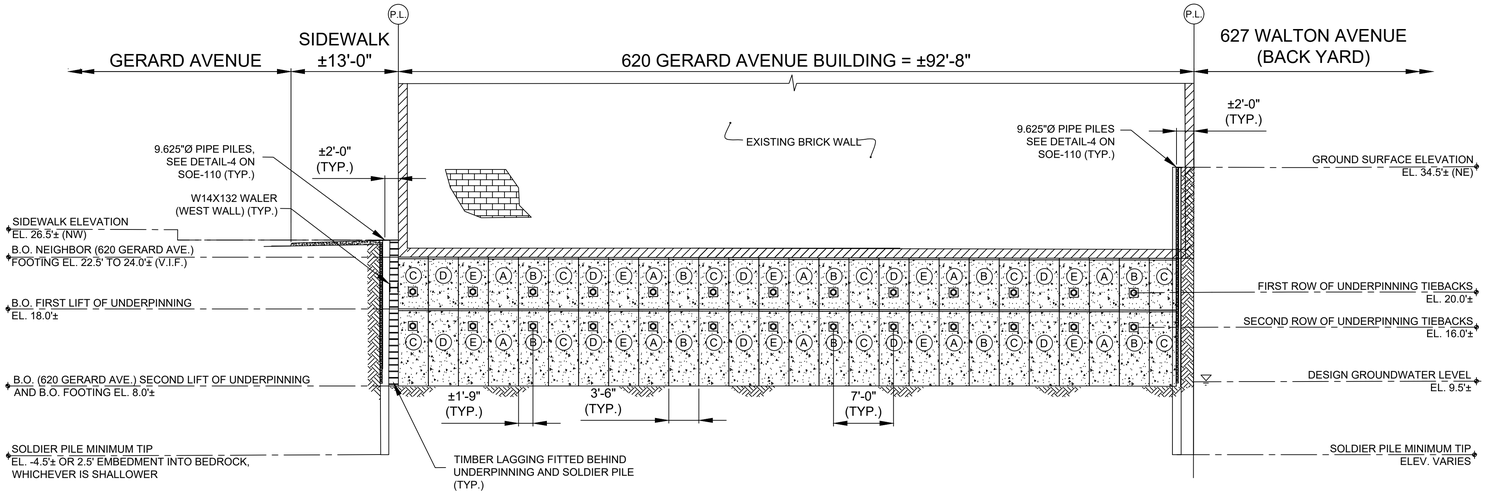
580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 1A

SHORING ELEVATIONS

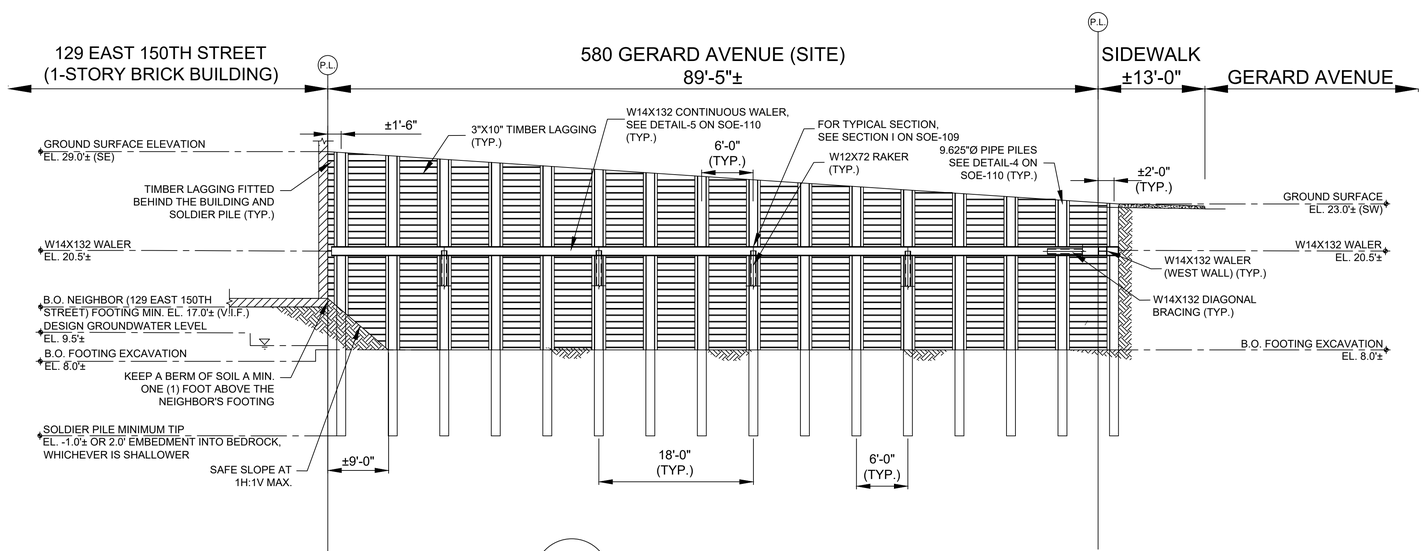
PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-106.03
SHEET NO:	7 OF 14

DRAFT FOR DISCUSSION



B SOE-107 SECTION B (FACING NORTH)

SCALE: N.T.S.



C SOE-107 SECTION C (FACING SOUTH)

SCALE: N.T.S.

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	UPDATED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	UPDATED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	UPDATED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

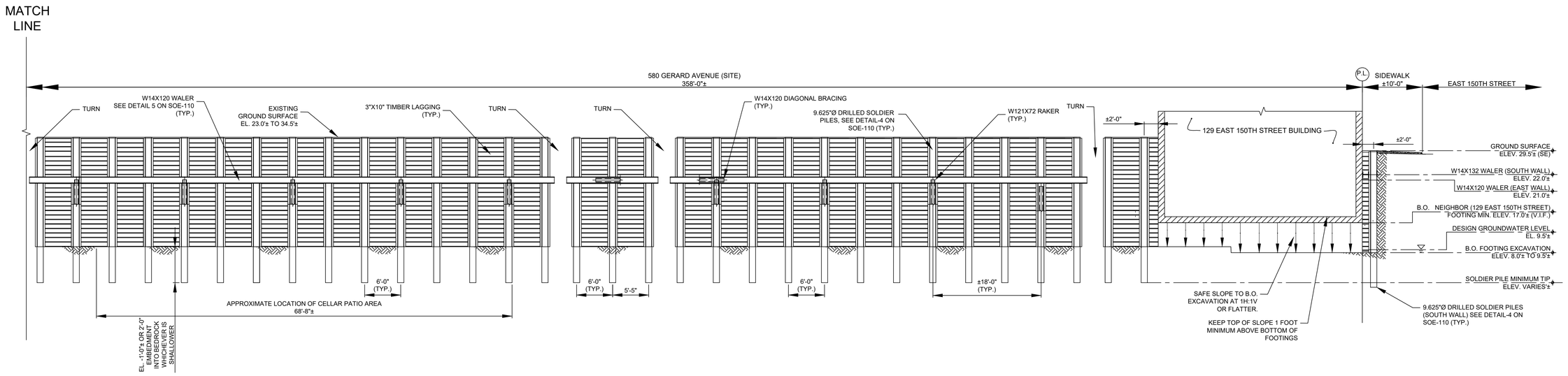
580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 6A

SHORING ELEVATIONS

PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-107.03
SHEET NO:	8 OF 14

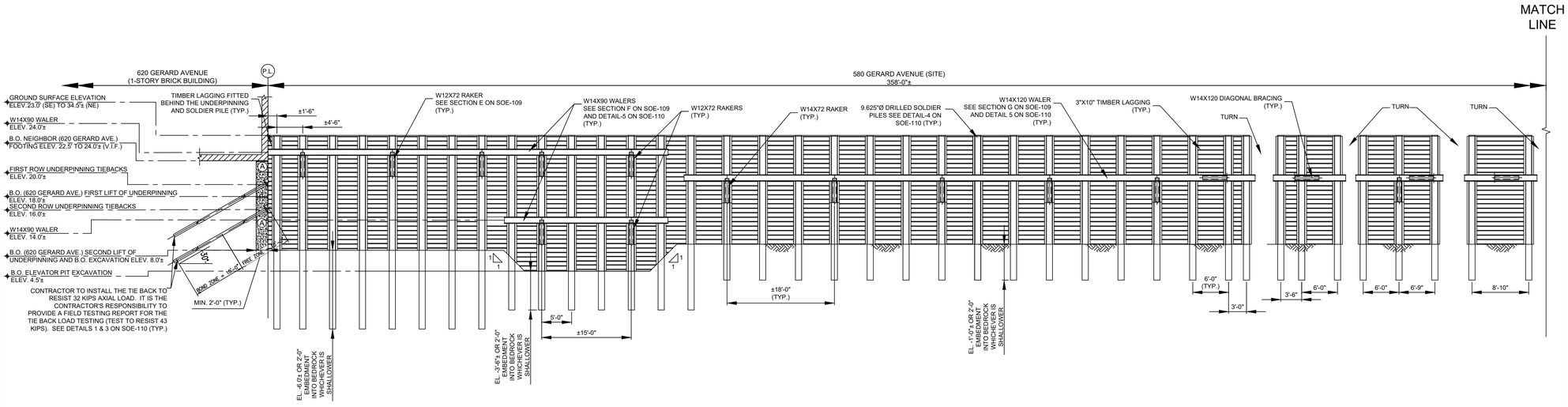
DRAFT FOR DISCUSSION



D
SOE-108

SECTION D (SOUTHERN HALF) (FACING EAST)

SCALE: N.T.S.



D
SOE-108

SECTION D (NORTHERN HALF) (FACING EAST)

SCALE: N.T.S.

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	UPDATED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	UPDATED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	UPDATED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

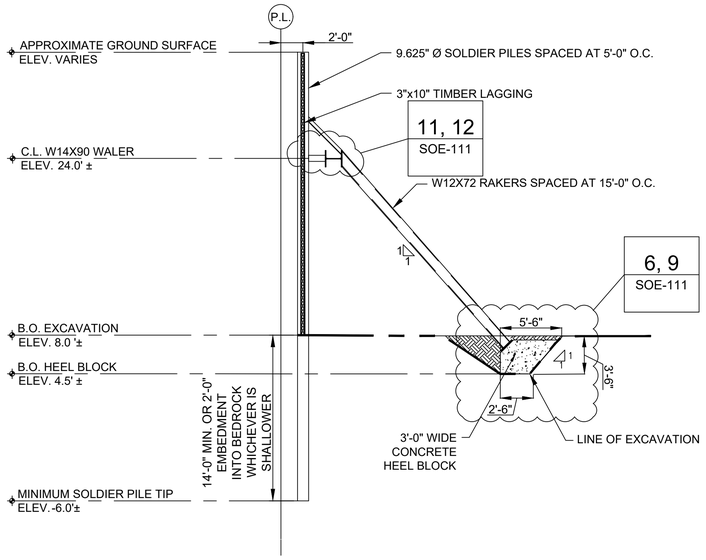
580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 1A

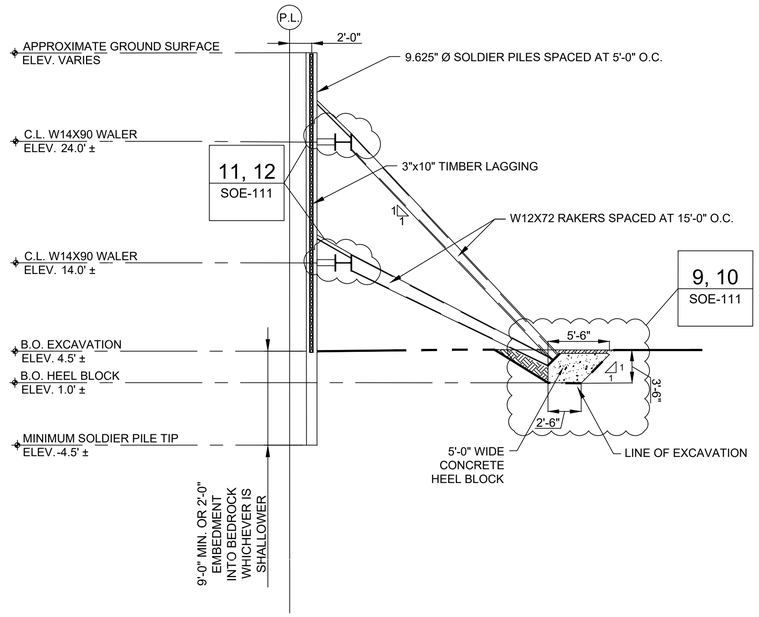
SHORING ELEVATIONS

PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-108.03
SHEET NO:	9 OF 14

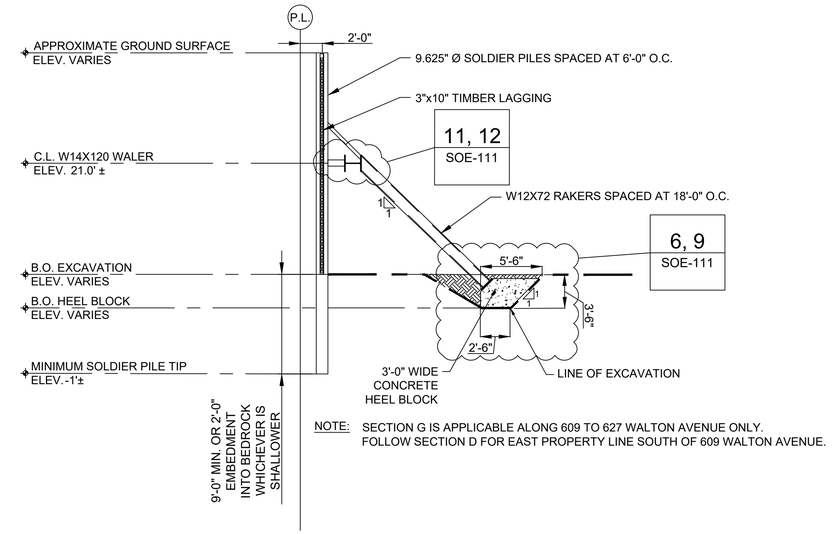
DRAFT FOR DISCUSSION



E SOE-109 — SECTION E (FACING SOUTH)
SCALE: NTS

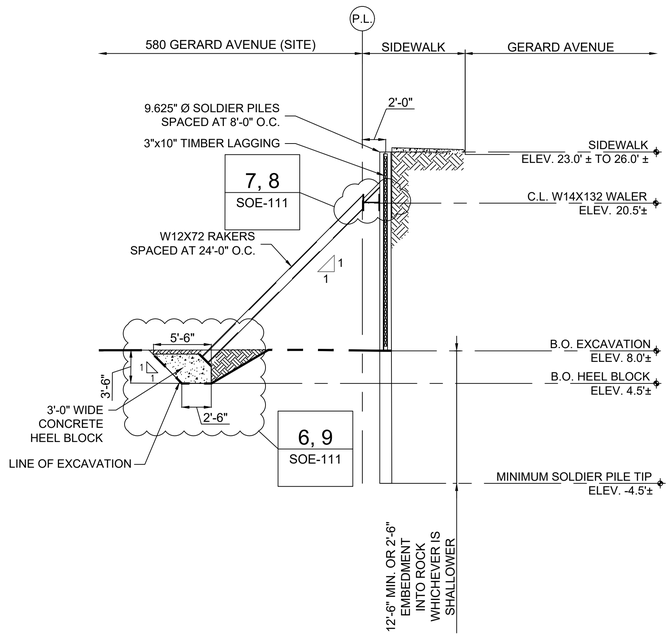


F SOE-109 — SECTION F (FACING SOUTH)
SCALE: NTS

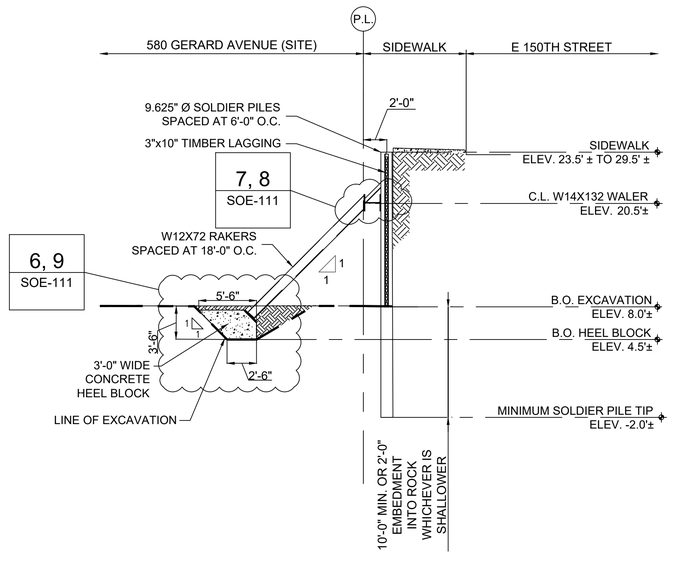


NOTE: SECTION G IS APPLICABLE ALONG 609 TO 627 WALTON AVENUE ONLY.
FOLLOW SECTION D FOR EAST PROPERTY LINE SOUTH OF 609 WALTON AVENUE.

G SOE-109 — SECTION G (FACING SOUTH)
SCALE: NTS



H SOE-109 — SECTION H (FACING SOUTH)
SCALE: NTS



I SOE-109 — SECTION I (FACING WEST)
SCALE: NTS

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	UPDATED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	UPDATED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	UPDATED PER NEW FOUNDATION DRAWINGS	08/15/21	HM

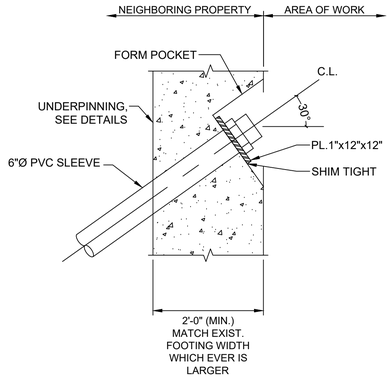
GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

580 GERARD AVENUE
BRONX, NYC, NY

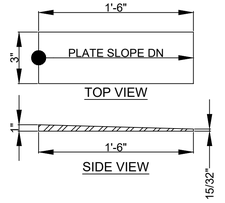
BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 6A

SHORING
SECTONS

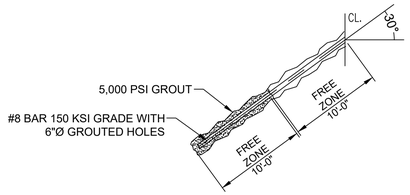
PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-109.03
SHEET NO:	10 OF 14



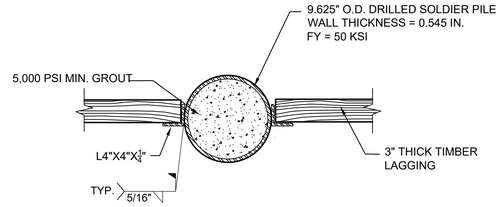
1 | SOE-110 — DETAIL 1
SCALE: NTS



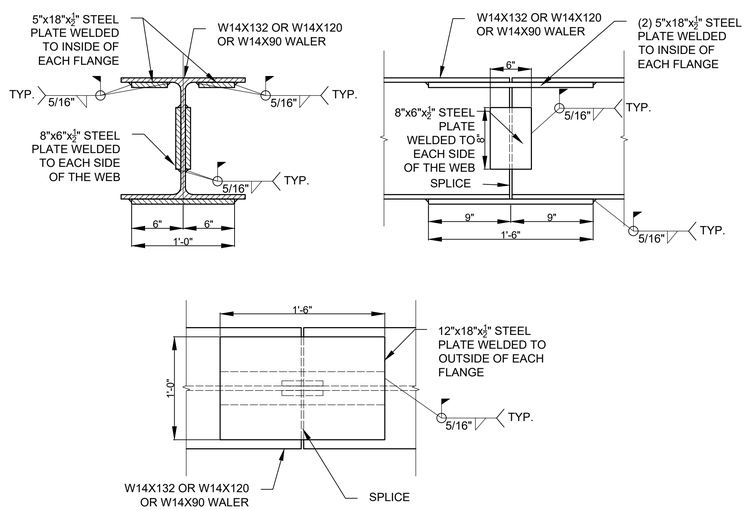
2 | SOE-110 — DETAIL 2
SCALE: NTS



3 | SOE-110 — DETAIL 3
SCALE: NTS



4 | SOE-110 — DETAIL 4
SCALE: NTS



5 | SOE-110 — DETAIL 5
SCALE: NTS

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	UPDATED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	UPDATED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	UPDATED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

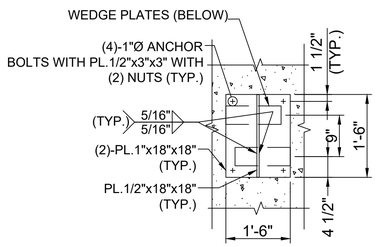
GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

580 GERARD AVENUE
BRONX, NYC, NY

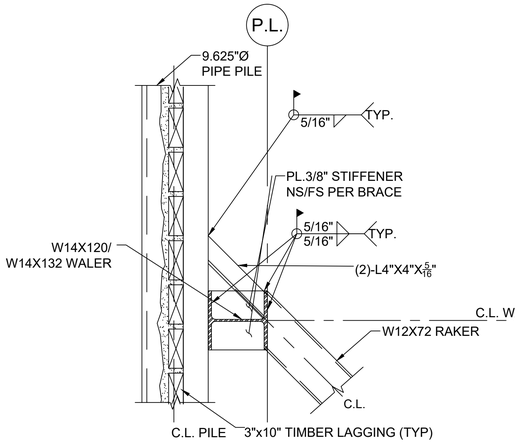
BLOCK: 2353 LOT: 1 ZONE: R7-A MAP: 6A

SHORING DETAILS

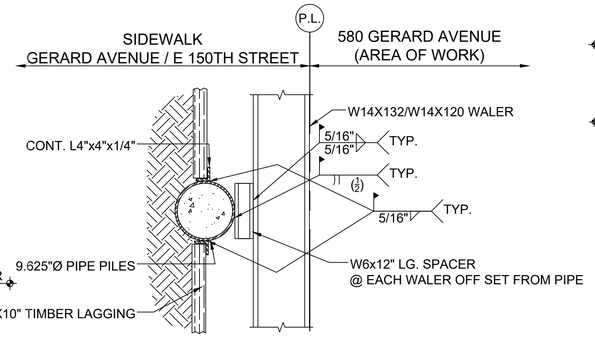
PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-110.03
SHEET NO:	11 OF 14



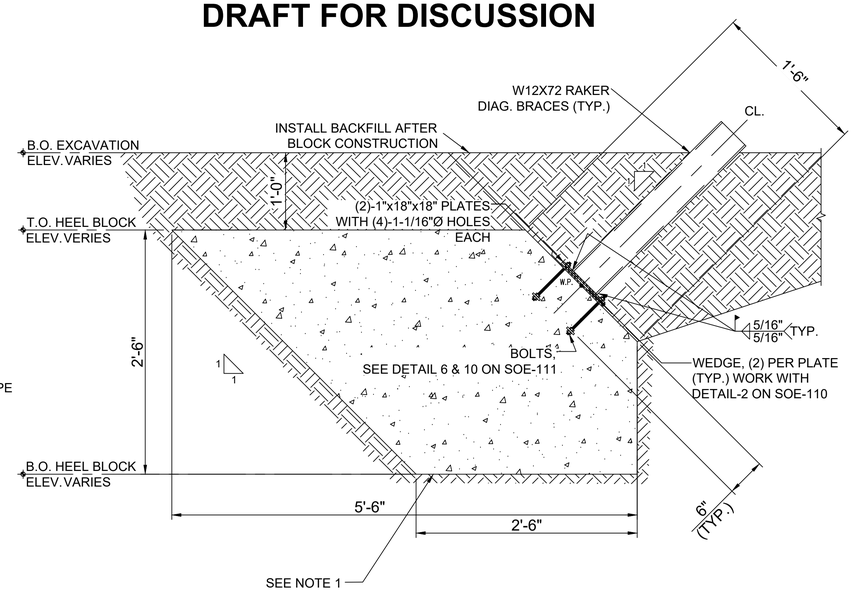
6 SOE-111 DETAIL 6
SCALE: NTS



7 SOE-111 DETAIL 7
SCALE: NTS

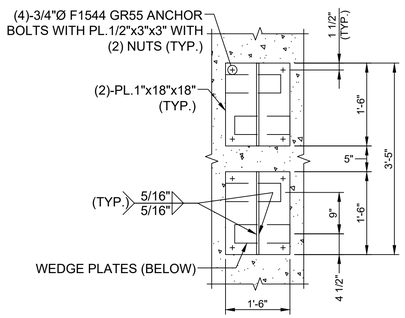


8 SOE-111 DETAIL 8
SCALE: NTS

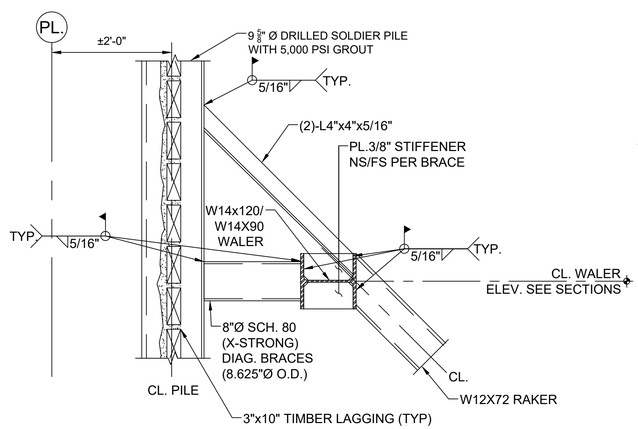


NOTES:
1. HEEL BLOCK SUBGRADE MUST BE INSPECTED AND APPROVED BY A NYC-LICENSED PROFESSIONAL ENGINEER FROM GES, P.C.
2. RAKERS AND WALERS SHOULD BE STEEL, GRADE 50.

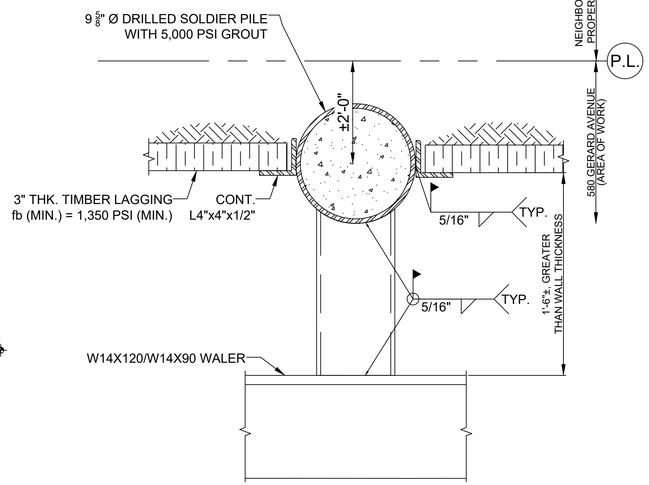
9 SOE-111 DETAIL 9
SCALE: NTS



10 SOE-111 DETAIL 10
SCALE: NTS



11 SOE-111 DETAIL 11
SCALE: NTS



12 SOE-111 DETAIL 12
SCALE: NTS

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	UPDATED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	UPDATED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	UPDATED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

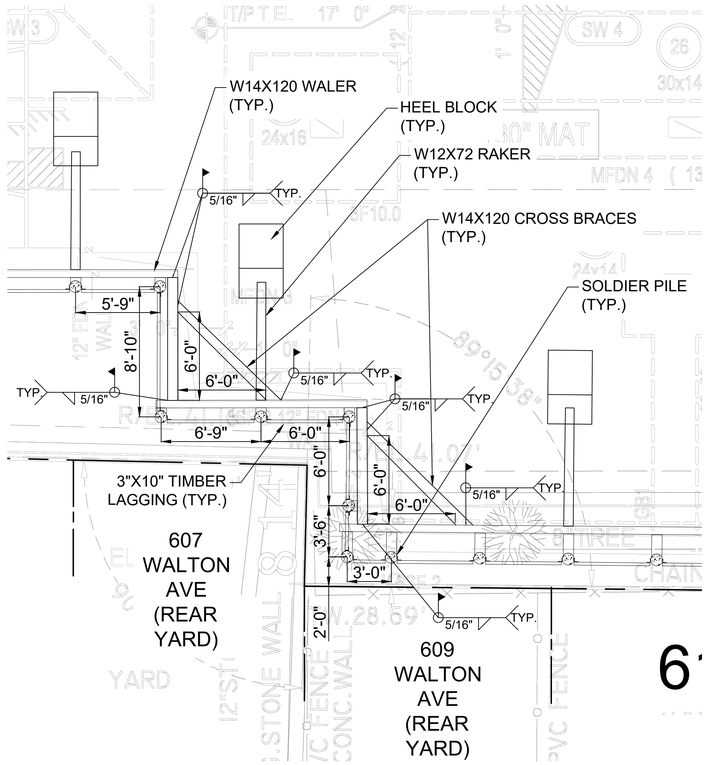
580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 6A

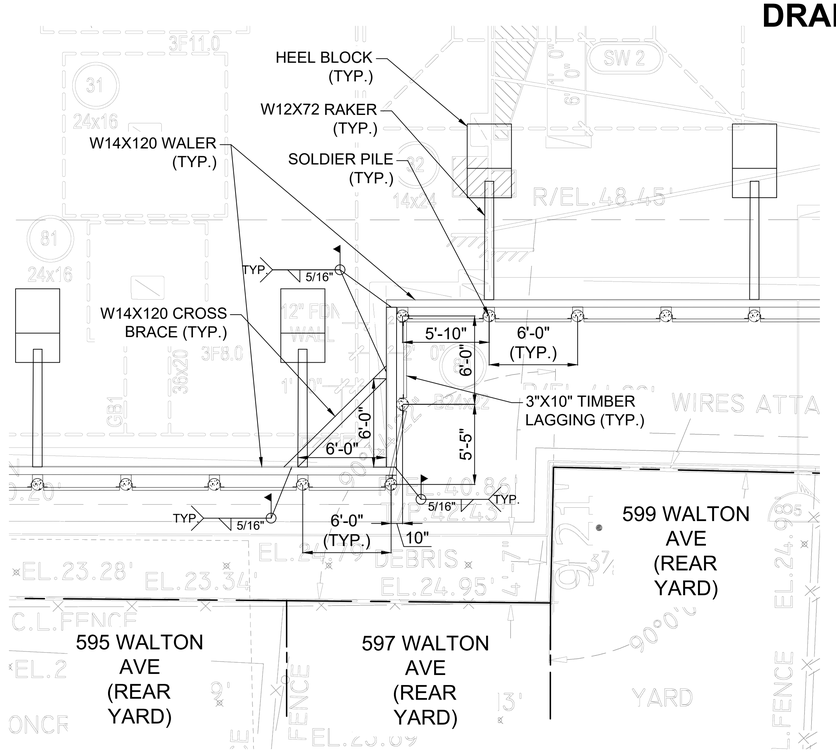
SHORING DETAILS

PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-111.03
SHEET NO:	12 OF 14

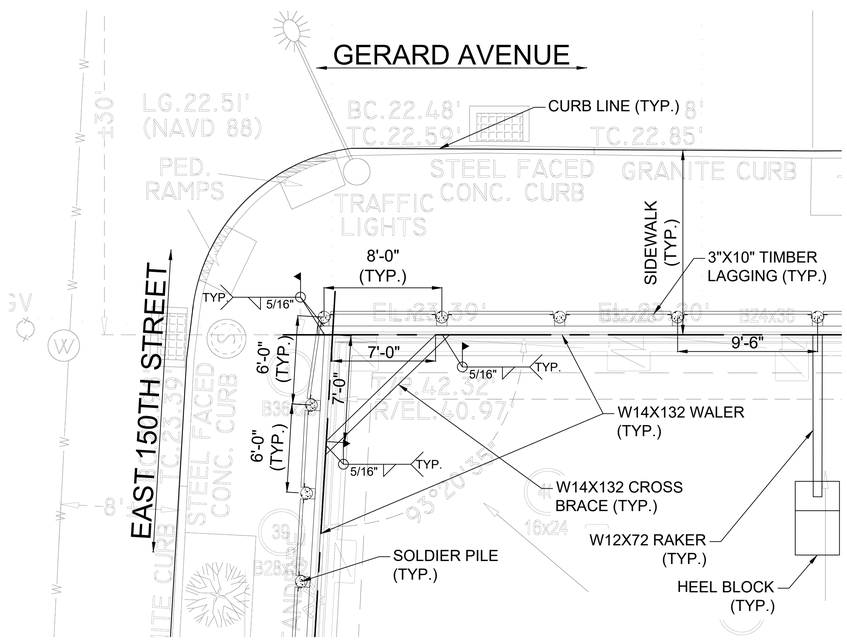
DRAFT FOR DISCUSSION



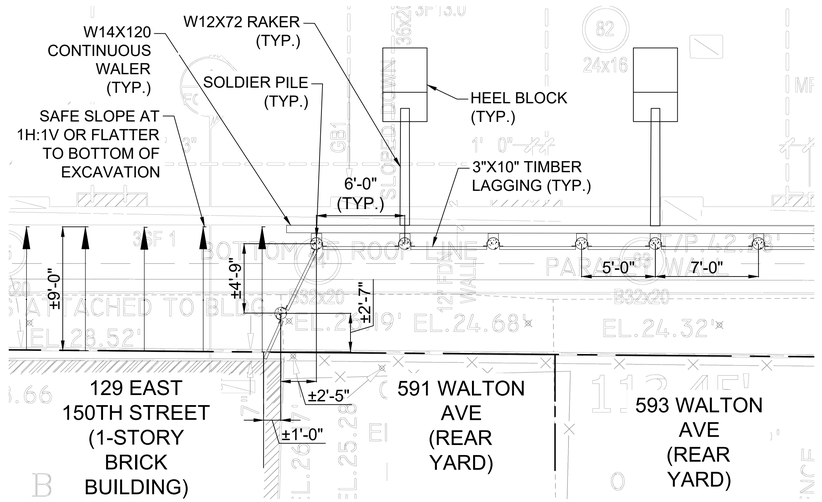
13 SOE-112 DETAIL 13
SCALE: NTS



14 SOE-112 DETAIL 14
SCALE: NTS



15 SOE-112 DETAIL 15
SCALE: NTS



16 SOE-112 DETAIL 16
SCALE: NTS

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	UPDATED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	UPDATED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	UPDATED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 6A

SHORING DETAILS

PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-112.03
SHEET NO:	13 OF 14

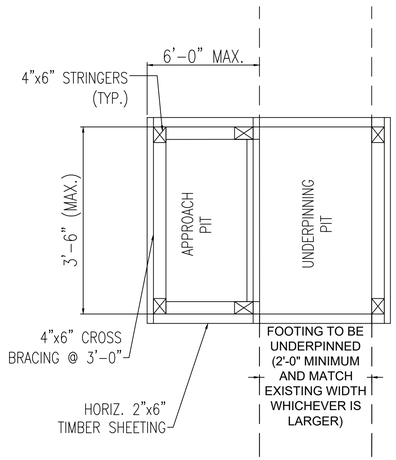
DRAFT FOR DISCUSSION

580 GERARD AVENUE UNDERPINNING SEQUENCE

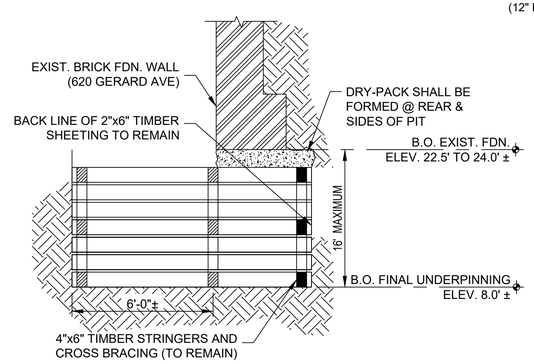
1. START WITH "A" SEGMENTS ONLY, DIG APPROACH PITS A MAXIMUM OF 3'-6" LONG AS MEASURED FROM THE INTERIOR, 6'-0" MAXIMUM WIDTH OF EXCAVATION, SIMULTANEOUSLY PLACING REQUIRED SHEETING AND BRACING.
2. EXPOSE UNDERSIDE OF FOOTING IN MAXIMUM LENGTH OF 3'-6" FOR EXCAVATION AND NO MORE THAN 3" BEYOND BACK SIDE OF THE FOOTING TO BE UNDERPINNED. ALL EXCAVATION BY HAND TOOLS ONLY.
3. CLEAR UNDERSIDE OF BOTTOM OF FOOTING BY HAND TOOLS AND EXCAVATE TO NO DEEPER THAN AS SHOWN IN SOE DRAWINGS. SIMULTANEOUSLY INSTALL SHEETING AND BRACING AS SOON AS POSSIBLE DURING THE HAND EXCAVATION.
4. THE CONTRACTOR SHALL INSTALL ADEQUATE LATERAL BRACING SYSTEM(S) TO PREVENT MOVEMENT IN THE EXISTING STRUCTURE(S) AND IN THE NEW UNDERPINNING AS SHOWN IN DETAILS.
5. CLEAN BOTTOM OF UNDERPINNING PIER SUBGRADE OF MUD, DEBRIS, AND LOOSE SOIL TO EXPOSE VIRGIN SOIL. GES, P.C. TO INSPECT AND APPROVE SUBGRADE.
6. INSTALL REINFORCEMENT PER SOE-113, FITTING REINFORCEMENT AROUND 6" PVC PIPES IN TIEBACK LOCATIONS WITH APPROPRIATE ANGLE SHOWN IN DETAIL-3 ON SOE-110. REINFORCEMENT TO BE INSPECTED AND APPROVED BY GES, P.C.
7. POUR NEW 5,000 PSI CONCRETE UNDERPINNING PIERS FOR "A" SEGMENTS TO 2" BELOW EXISTING FOOTING. CONCRETE CYLINDERS TO BE TAKEN AND TESTED BY THIRD-PARTY TESTING AGENCY FOR EVERY POUR WITH CONCRETE BREAKS AT 3, 7 AND 28 DAYS AT A MINIMUM. LIMITED VIBRATION OF CONCRETE IS APPROVED, ONLY.
8. AFTER CONCRETE HAS BEEN PERMITTED TO SET FOR A MINIMUM DURATION OF 24 HOURS OR AT START OF NEXT WORK DAY MORNING, DRIVE TAPERED STEEL WEDGES, THEN PACK VOIDS BETWEEN UNDERPINNING AND UNDERSIDE OF FOOTING WITH DRYPACK, TO TRANSFER LOAD. COMPRESSIVE STRENGTH OF DRYPACK MUST EXCEED THAT OF UNDERPINNING AND BE INSPECTED BY GES, P.C..
9. EXCAVATION FOR APPROACH PINS FOR NEXT SEQUENCE OF UNDERPINNING MAY PROCEED SOONER, BUT ABOVE CONDITIONS MUST BE MET BEFORE NEXT SEQUENCE OF UNDERPINNING IS BEGUN.
10. REMOVE FRONT-FORM INSTALL BOND BREAKER AND POUR FRONT FOOTING AND STEEL SHORING SECTION. SHIM STEEL SHORING.
11. FOR "B" SEGMENTS, DIG PITS 3'-6" MAXIMUM LONG AS MEASURED FROM THE INTERIOR WITH REQUIRED SHEETING & BRACING AND REPEAT STEPS 1 THROUGH 10.
12. FOR "C" SEGMENTS, REPEAT CONCRETING, STEEL WEDGES AND DRYPACKING AS DESCRIBED IN STEPS 1 THROUGH 10 AND SOE DRAWINGS.
13. FOR "D" SEGMENTS, DIG PITS 3'-6" MAXIMUM LONG AS MEASURED FROM INTERIOR WITH REQUIRED SHEETING & BRACING, AND REPEAT STEPS 1 THROUGH 10.
14. FOR "E" SEGMENTS, REPEAT CONCRETING, STEEL WEDGES AND DRYPACKING AS DESCRIBED IN STEPS 1 THROUGH 10 AND SOE DRAWINGS.
15. UNDERPINNING PITS CLOSER THAN 12' APART SHALL NOT BE EXCAVATED AT THE SAME TIME. APPROACH PITS CAN BE CONSTRUCTED WITHIN 12' SPACING, ON CASE-BY-CASE BASIS, AS APPROVED BY GES, P.C.
16. DRY PACK AND SHIMS MUST BE ALSO INSTALLED BETWEEN THE FIRST AND SECOND LIFT OF UNDERPINS.

MINIMUM SIZES OF TIMBER BRACING & TIMBER SHEET PILING FOR PITS THREE AND A HALF FEET WIDE (MAXIMUM)						
DEPTH OF TRENCH (FT.)	SHEET PILING		STRINGER		CROSS BRACING	
	SIZE	VERT. SPACING	SIZE	VERT. SPACING	SIZE	SPACING
VARIES	2"x6"	TIGHT	2"x6"	4'-0"	VARIES	3'-0"

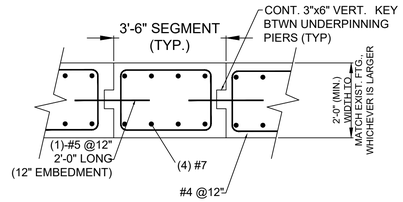
NOTE: OPTIONAL SHEETING 3"x10".



TYPICAL APPROACH AND UNDERPINNING PIT PLAN

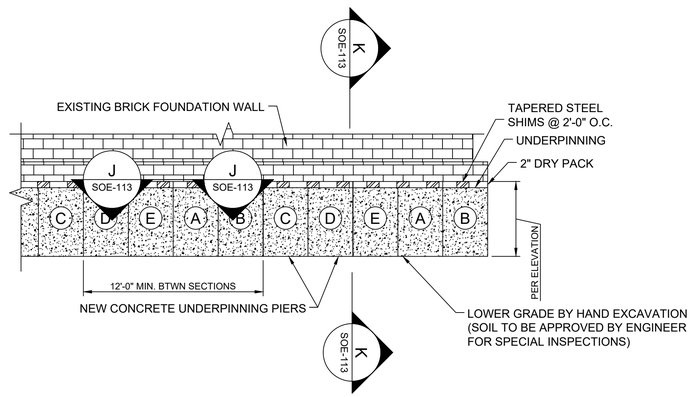


ELEVATION



J / SOE-113 — SECTION J

SCALE: NTS



TYPICAL UNDERPINNING DETAIL

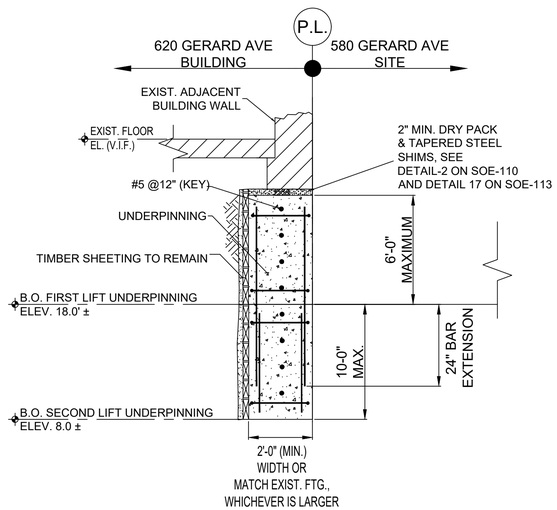
SCALE: NTS

GENERAL NOTES:

1. THIS DETAIL SUGGESTS ONE METHOD OF UNDERPINNING. IF DESIRED THE CONTRACTOR SHALL EVALUATE THE METHOD AND DETERMINE EXACT METHODS AND PROCEDURES TO BE USED. IF ALTERNATE METHODS ARE USED, THE CONTRACTOR SHALL THEN SUBMIT THESE METHODS AND PROCEDURES TO THE NYC BUILDING DEPARTMENT AND SUPPORT OF EXCAVATION ENGINEER OF RECORD FOR REVIEW AND APPROVAL.
2. AS THE BOTTOM OF THE UNDERPINNING IS BELOW THE DESIGN GROUNDWATER LEVEL, THE SECOND LIFT OF UNDERPINNING NEEDS TO BE WATERPROOFED, UP TO AT LEAST EL. +9.5'
3. NYCECC INSULATION, R=0.

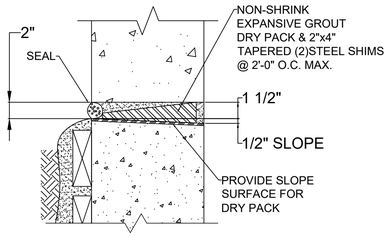
TYPICAL UNDERPINNING PIT / TIMBER SHORING

SCALE: NTS



K / SOE-113 — SECTION K

SCALE: NTS



17 / SOE-113 — DETAIL 17

SCALE: NTS

PROFESSIONAL ENGINEER

No.	DESCRIPTION	DATE	BY
3	UPDATED PER NEW FOUNDATION DRAWINGS	09/23/21	HM
2	UPDATED PER NEW FOUNDATION DRAWINGS	09/17/21	HM
1	UPDATED PER NEW FOUNDATION DRAWINGS	08/30/21	HM

GES
GEOTECHNICAL ENGINEERING SERVICES, P.C.
6 BAYBERRY ROAD
ELMSFORD, NEW YORK 10523
PHONE 914-592-4616 FAX 914-592-0416

580 GERARD AVENUE
BRONX, NYC, NY

BLOCK: 2353 LOT: 1 ZONE: R7A MAP: 6A

UNDERPINNING DETAILS

PROJECT #:	2019110
SCALE:	NTS
DATE:	07/12/21
DRAWING NO:	SOE-113.03
SHEET NO:	14 OF 14

APPENDIX M

NYSDEC Request to Import/Reuse Fill Material Form

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Request to Import/Reuse Fill or Soil

This form is based on the information required by DER-10, Section 5.4(e). Use of this form is not a substitute for reading the applicable Technical Guidance document.

SECTION 1 – SITE BACKGROUND

The allowable site use is: Choose an item

Have Ecological Resources been identified? Choose an item

Is this soil originating from the site? Choose an item

How many cubic yards of soil will be imported/reused? Choose an item

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone? Choose an item

Does it contain less than 10%, by weight, material that would pass a size 80 sieve? Choose an item

Is this virgin material from a permitted mine or quarry? Choose an item

Is this material recycled concrete or brick from a DEC registered processing facility? Choose an item

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.

SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.

SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

The information provided on this form is accurate and complete.

_____ _____

Signature Date

_____

Print Name

_____

Firm

Revised August 2014