Williamsburg Bridgeview Apartment

105 South 5th Street / 337 Berry Street

BROOKLYN, NEW YORK

Interim Remedial Measure Work Plan

NYSDEC BCP Number: C2XXXX

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LIST OF ACRONYMS

Acronym	Definition
AST	Aboveground Storage Tank
CAMP	Community Air Monitoring Plan
C&D	Construction & Demolition
CEQR	City Environmental Quality Review
CFR	Code of Federal Regulations
CHASP	Construction Health and Safety Plan
CO	Certificate of Occupancy
CPC	City Planning Commission
DSNY	Department of Sanitation
“E”	E-Designation
EAS	Environmental Assessment Statement
EIS	Environmental Impact Statement
ESA	Environmental Site Assessment
EC/IC	Engineering Control and Institutional Control
ELAP	Environmental Laboratory Accreditation Program
FDNY	New York City Fire Department
GPR	Ground Penetrating Radar
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations Emergency Response
IDW	Investigation Derived Waste
IRM	Interim Remedial Measures
IRMWP	Interim Remedial Measures Work Plan
Notice - NNO	Notice of No Objection
Notice - NTP	Notice To Proceed
Notice - NOS	Notice Of Satisfaction
Notice - FNOS	Final Notice of Satisfaction
NYC BSA	New York City Board of Standards and Appeals
NYC DCP	New York City Department of City Planning
NYC DEP	New York City Department of Environmental Protection
NYC DOB	New York City Department of Buildings
NYC DOF	New York City Department of Finance

Acronym	Definition
NYC HPD	New York City Housing Preservation and Development
NYCRR	New York Codes Rules and Regulations
NYC OER	New York City Office of Environmental Remediation
NYS DEC	New York State Department of Environmental Conservation
NYS DEC DER	New York State Department of Environmental Conservation Division of Environmental Remediation
NYS DEC PBS	New York State Department of Environmental Conservation Petroleum Bulk Storage
NYS DOH	New York State Department of Health
NYS DOT	New York State Department of Transportation
OSHA	United States Occupational Health and Safety Administration
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PE	Professional Engineer
PID	Photo Ionization Detector
PM	Particulate Matter
QEP	Qualified Environmental Professional
RA	Register Architect
RAWP	Remedial Action Work Plan
RCA	Recycled Concrete Aggregate
FER	Final Engineering Report
RD	Restrictive Declaration
RI	Remedial Investigation
SCOs	Soil Cleanup Objectives
SCG	Standards, Criteria and Guidance
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SSDS	Sub-Slab Depressurization System
SVOCs	Semi-Volatile Organic Compounds
USCS	Unified Soil Classification System
Acronym	**Definition**
USGS	United States Geological Survey
UST	Underground Storage Tank
TAL	Target Analyte List
TCL	Target Compound List
TCO	Temporary Certificate of Occupancy
VB	Vapor Barrier
VOCs	Volatile Organic Compounds

CERTIFICATION

I, Peter Jaran, certify that I am currently a NYS registered professional engineer and that this Interim Remedial Measure 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.

066090	2/11/16	
NYS Professional Engineer #	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, and New York State Education Law.

EXECUTIVE SUMMARY

LPC Development Group LLC (LPC) is working with the NYS Department of Environmental Conservation (NYSDEC) in the New York State Brownfield Cleanup Program to investigate and remediate a 15,250-square-foot site located at 105 S. 5th Street/337 Berry Street in Brooklyn, New York. A preliminary remedial investigation (PRI) was performed to compile and evaluate data and information necessary to develop this Interim Remedial Measure Work Plan (IRMWP). The interim remedial measure described in this document provides for the protection of public health and the environment consistent with the intended property use, complies with applicable environmental standards, criteria and guidance and conforms to applicable laws and regulations.

Site Description/Physical Setting/Site History

The Site is located at 105 S. 5th Street/337 Berry Street in the Williamsburg section of Brooklyn, New York and is identified as Block 2443 and Lot 6 (formerly Lots 6, 37, and 41) on the New York City Tax Map. **Figure 1** shows the Site location. The Site is approximately 15,420 square feet and is bounded by residential/commercial sites to the north, South 5th Street and the Williamsburg Bridge to the south, a 7-story commercial building to the east, and Berry Street followed by residential and commercial buildings to the west. A map of the site boundary is shown in **Figure 2**.

Currently, the Site consists of a vacant, approximately 10,000-square foot one- story commercial warehouse building on the north side of the site with a small basement in the northwest corner and undeveloped vegetated land on the south side of the Site. A survey of the Site is presented in **Figure 3**.

The Site is located within an urban area that is primarily characterized by residential and commercial or mixed-use properties with many of the lots developed with multi-family buildings. Current uses of the adjoining properties were observed as follows:

North – The Site is bordered to the north by 4-story, 3-story, and 7-story residential buildings as well as a 1-story commercial building.

South – The Site is bordered to the south by South 5th Street followed by the Williamsburg Bridge.

East – The Site is bordered to the east by a 7-story commercial building.

West - The Site is bordered to the west by a vacant 3-story industrial/manufacturing building, a lot currently under construction at the corner of South 5th Street and Berry Street, and a 2-story family home.

According to OER's online SPEED application, there are no hospitals, schools, or day care facilities within a 500-foot radius of the Site. **Figure 4** shows the surrounding land usage.

Summary of Contemplated Redevelopment Plan

The proposed future use of the Site will consist of an affordable housing residential building with 55 units of government subsidized affordable housing and an asphalt-paved parking lot. Layout of the proposed site development is presented in **Figure 5** and **Appendix A**. The current zoning designation is M1-2/R6 which includes manufacturing and residential use. The proposed use is consistent with existing zoning for the property.

The proposed 11-story building is intended mainly for residential uses with mixed commercial retail uses on the first floor. The 68,625 gross square foot building will be approximately 168 feet tall and will be 100% affordable residential housing for families making no more than 60% of the area median income. The 55 apartment units will consist of (12) Studios, (15) 1BRs, (27) 2BRs, and (1) 3BR. The ground floor will include frontage on South 5th Street with 3,823 square feet of retail space and a 1,053-square-foot community facility. The building will also include a small basement in the northeast corner only.

The building will occupy approximately 8,300 feet of the approximately 15,420 square foot site. Areas of the property not improved by the building will be improved either with a paved parking lot or landscaping. The proposed development will include parking with an entrance from Berry St. and several small planting areas at each end of the parking area and one recreation area approximately 370 square feet in size at grade at the northeast corner of the proposed building. The proposed site re-development plan will require the demolition of the 1-story building with a footprint of 10,000 square feet and will be conducted in accordance with appropriate rules and regulation in New York City and State. The estimated depth of excavation is 13 feet below grade and will not go below the water table which is located approximately 50 feet below surface grade. The excavation will be for the installation of the foundation, utilities, and the small basement. Approximately 3,750 cubic yards of soil (275 for the parking area and 3,480 for the building) or 5,640 tons will be excavated for the proposed development.

The interim remedial measure contemplated under this IRMWP may be implemented independently of the proposed redevelopment plan.

Summary of Past Site Uses and Areas of Concern

Based on the previous Phase I ESA, prepared by Hillmann Consulting, LLC dated August 20, 2013, the following is a brief summary of the Site history:

From 1887, the northern portion of the Site has been developed with a 2-story building used by Water Purveyors Bureau, a single-story building used as a Wagon Shed and another 2-story building used by Department of City Works. By 1918, the single-story was occupied by an Auto Shed, the 2-story building for storage and remained in this configuration until 1938 when all three buildings were replaced with the current 1-story building. From 1947 until at least 2007, the 1-story building was occupied by the City of N.Y. Dept. of Correction Garage.

Since 1887, the southern portion of the Site has occupied by five small residential dwellings. By 1904, only two residential dwellings remained with the remaining area vacant until 1947 when a small warehouse occupied the vacant land. In 1977 the three buildings were replaced with a single auto body shop. As of 1995, the southern portion of the Site has remained vacant.

Areas of Concern generally include areas where existing or former activities are known or suspected to have resulted in generation, manufacture, refinement, transport, storage, handling, treatment, discharge, release and/or disposal of contaminated media.

The AOCs identified for this site include:

1. Former auto shed/garage in the northern portion of the Site
2. Former warehouse and auto body shop in the southern portion of the Site
3. Potential presence of historic fill material.

Summary of Work Performed under the Preliminary Remedial Investigation

On October 26-27, 2015 and December 2015/January 2016, Equity Environmental Engineering, LLC performed a Preliminary Remedial Investigation per NYC OER requirements. The following work was performed as part of the October 2015 (Phase 1) and December 2015/January 2016 (Phase 2) Preliminary Remedial Investigation:

1. Installed seven (7) soil borings, and collected fourteen (14) soil samples during Phase I and installed five (5) additional soil borings, and collected five (5) soil samples during Phase 2 of the PRI for chemical analysis from the soil borings to evaluate soil quality;

2. Installed four (4) permanent groundwater monitoring wells and collected four (4) groundwater samples during Phase 2 of the PRI for chemical analysis to evaluate groundwater quality;

3. Installed six (6) soil vapor probes and collected six (6) soil vapor during Phase 1and installed five (5) additional soil vapor probes and collected five (5) sub-slab soil vapor samples during Phase 2 of the PRI for chemical analysis; and

4. Collected Quality Assurance, Quality Control (QA/QC) samples in the form of one duplicate and field blank for soil and groundwater. A trip blank was also collected for groundwater.

Summary of Findings of Remedial Investigation

1. Elevation of the property is approximately 45 feet above mean sea level and is relatively flat.

2. Depth to groundwater is approximately 45 feet bgs at the Site.

3. Groundwater flow is generally west beneath the Site.

4. Depth to bedrock is unknown at the Site.

5. The stratigraphy of the site, from the surface down, consists of 2-11 feet of urban fill material underlain by varying thicknesses of well graded sand/silt (fine to medium sand) and well graded fine grain sand. Several of the borings; SB1-, SB-4, SB-5, and SB-7 contained medium grain sand and gravel. In borings SB-4 through SB-7, refusal was hit at approximately 20 feet.

6. Soil/fill samples collected during the Preliminary Remedial Investigation were compared to New York State Department of Environmental Conservation (NYSDEC) Part 375 Table 375-6.8 Unrestricted Use and Restricted Residential Use Soil Cleanup Objectives (SCOs). Several volatile organic compounds (VOCs) were detected at trace concentrations well below Unrestricted Use SCOs. Tetrachloroethene (PCE) and

trichloroethene (TCE) were each detected in the shallow (0-2 foot interval) soil samples under the existing building with PCE detected at a maximum concentration of 0.0031 milligrams per kilogram [mg/kg] and TCE detected at a maximum concentration of 0.0073 mg/kg, both below the Unrestricted Use SCOs. The additional shallow soil sampling performed in the existing building showed PCE detected at a maximum of 0.0037 mg/kg and TCE detected at a maximum of 0.0081 mg/kg. Acetone and methylene chloride, benzene in two shallow soil samples, and toluene in one deep soil sample were also detected but below Unrestricted Use SCOs. No other VOCs were detected. Several semi-volatile organic compounds (SVOCs) were detected in the samples; however, the only SVOCs detected above the Restricted Residential Use SCOs were benzaldehyde (maximum [max] 1.39 mg/kg), benzo(a)anthracene (max 1.25 mg/kg), benzo(a)pyrene (max 1.62 mg/kg), and indeno(1,2,3-cd)pyrene (max 0.957 mg/kg) in two shallow soil (0-2 foot interval) samples. The pesticides dieldrin (max. 0.0092 mg/kg), 4,4'-DDD (0.0038 mg/kg), and 4,4'-DDT (max 0.0369 mg/kg) were only detected within shallow (0-2 foot interval) soil samples above Unrestricted Use SCOs. Total PCBs were detected in one shallow (0-2 foot interval) soil sample at 0.496 mg/kg, above Unrestricted Use SCO but below the Restricted Residential Use SCO. The metals copper (max. 50.4 mg/kg), iron (max. 23,100 mg/kg), lead (max. 392 mg/kg), mercury (max. 0.97 mg/kg) and zinc (max. 184 mg/kg) were detected above Unrestricted Use SCOs. Of these metals, only mercury exceeded Restricted Residential SCO in one shallow (0-2 foot) soil sample at SB-1.

7. Groundwater samples collected during the Preliminary Remedial Investigation were compared to the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (GQS) for Class GA (drinking water). The VOC PCE (max. 71.4 micrograms per liter [µg/L]) was detected above GQS in all four groundwater samples and TCE (max. 27.2 µg/L) was detected above GQS in three groundwater samples. One SVOC, bis(2-ethylhexyl)phthalate (max. 3.8 µg/L) was detected in the groundwater, but at a concentration below GQS. The metals iron, manganese, selenium, and sodium were detected at concentrations above the GQS in the unfiltered samples with manganese (max. 0.849 mg/L), sodium (max. 122 mg/L), and selenium (0.012 mg/L) detected at concentrations above the GQS in the filtered samples. No PCBs or pesticides were detected.

8. Soil vapor samples collected during the Preliminary Remedial Investigation were compared to the New York State Department of Health (NYSDOH) Final Guidance on Soil Vapor Intrusion (October 2006) Matrix 1 and Matrix 2 values. The samples indicted the presence of petroleum related VOCs and chlorinated VOCs. Petroleum-related VOCs (BTEX) were detected at a maximum concentration of 79 micrograms per cubic meter [$\mu g/m^3$] in SG-5. Overall the highest reported concentration was for acetone (208 $\mu g/m^3$), 1,1-dichloroethylene (181 $\mu g/m^3$), cis-1,2-dichloroethylene (233 $\mu g/m^3$), heptane (142 $\mu g/m^3$), hexane (277 $\mu g/m^3$), propylene (3,990 $\mu g/m^3$), 2,2,4-trimethylpentane (377 $\mu g/m^3$), and trichlorofluoromethane (116 $\mu g/m^3$). Carbon tetrachloride was detected in two samples at a maximum concentration of 2.6 $\mu g/m^3$. 1,1,1-trichloethane (TCA) was detected in all six soil vapor samples and exceeded the guidance value at two locations with concentrations of 213 $\mu g/m^3$ and 278 $\mu g/m^3$. Trichloroethene (TCE) was detected in all of the soil vapor samples and exceeded the guidance value at all locations with concentrations of 21 $\mu g/m^3$, 21 $\mu g/m^3$, 135 $\mu g/m^3$, 688 $\mu g/m^3$, 1,980 $\mu g/m^3$, and 3,510 $\mu g/m^3$. Tetrachloroethene (PCE) was also detected in all soil vapor samples and exceeded the guidance value at four locations with concentrations of 142 $\mu g/m^3$, 656 $\mu g/m^3$, 739 $\mu g/m^3$, and 2,870 $\mu g/m^3$. The TCA, TCE, and PCE concentrations in soil vapor were above the monitoring level ranges established within the NYSDOH Final Guidance on Soil Vapor Intrusion. The five additional sub-slab soil vapor samples taken within the existing building detected PCE at a maximum concentration of 5.8 $\mu g/m^3$ and TCE detected above the guidance value with a maximum concentration of 31 $\mu g/m^3$. TCA was not detected in the sub-slab soil vapor samples.

Qualitative Human Health Exposure Assessment

The Qualitative Human Health Exposure Assessment will be performed as part of the Remedial Action Work Plan.

Summary of the Interim Remedial Measure

The proposed interim remedial measure achieves protection of public health and the environment for the intended use of the property. The proposed interim remedial measure will consist of:

1. Performance of all required NYS BCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Performance of a Community Air Monitoring Program for particulates and volatile organic carbon compounds.

3. Establishment of interim Site Specific (Track 4) Soil Cleanup Objectives (SCOs).
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
5. Completion of a Waste Characterization Study prior to excavation activities. Waste characterization soil samples will be collected at a frequency dictated by disposal facility(s).
6. Excavation and removal of soil/fill exceeding interim Site Specific (Track 4) SCOs. Approximately 60% of the Site will be excavated to a depth of approximately 13 feet below grade surface [bgs] for the new building's basement level. The elevator pit will be excavated to a depth of 17 feet bgs. The perimeter of the Site adjacent to the existing high rise buildings will be excavated to 10 feet bgs along the east boundary and 4-5 feet bgs along the western boundary. The remainder of the Site will be excavated to a depth of 1 foot bgs for the outdoor parking area and 2 feet in the landscaped areas. Approximately 5,640 tons of historic fill will be removed from the Site and properly disposed at an appropriately licensed or permitted facility.
7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media on-Site.
8. Management of excavated materials including temporarily stockpiling and segregating in accordance with defined material types and to prevent co-mingling of contaminated material and non-contaminated materials.
9. Removal of all USTs that are encountered during soil/fill removal actions. Registration of tanks and reporting of new petroleum spills associated with UST's and appropriate closure of these petroleum spills in compliance with applicable local, State and Federal laws and regulations.
10. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of interim Site Specific Track 4 SCOs.
11. Transportation and off-Site disposal of all soil/fill material at licensed or permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-Site.
12. Demarcation of residual soil in landscaped areas.

13. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
14. Performance of all activities required for the interim remedial measure, including acquisition of required permits and attainment of pretreatment requirements, in compliance with applicable laws and regulations.
15. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.

All deviations from the IRMWP will be promptly reported to NYSDEC for approval and fully explained in the FER. After completion of the IRM, remedial activities will be completed at the Site in accordance with a NYSDEC-approved RAWP and the Department-issued Decision Document.

1.0 INTERIM REMEDIAL MEASURE WORK PLAN

INTRODUCTION/ PROJECT BACKGROUND

LPC Development Group LLC (LPC) is working with NYS Department of Environmental Conservation (NYSDEC) in the New York State Brownfield Cleanup Program to investigate and remediate a property located at 105 S. 5th Street/337 Berry Street, in the Williamsburg section of Brooklyn, New York (the "Site"). A Preliminary Remedial Investigation (RI) was performed to compile and evaluate data and information necessary to develop this Interim Remedial Measure Work Plan (IRMWP) in a manner that will render the Site protective of public health and the environment consistent with the contemplated end use. This IRMWP is consistent with the procedures defined in DER-10. The interim remedial measure described in this document provides for the protection of public health and the environment, and complies with applicable environmental standards, criteria and guidance and applicable laws and regulations. The NYSDEC and New York State Department of Health (NYSDOH) have determined that this Site does not pose a significant threat to human health and the environment. The Preliminary RI for this Site did not identify fish and wildlife resources.

A formal IRM Remedial Design document will not be prepared.

1.1 SITE LOCATION AND DESCRIPTION

The Site is located at 105 S. 5th Street/337 Berry Street in the Williamsburg section of Brooklyn, New York and is identified as Block 2443 and Lot 6 on the New York City Tax Map. **Figure 1** shows the Site location. The Site is approximately 15,420 square feet and is bounded by residential/commercial sites to the north, South 5th Street and the Williamsburg Bridge to the south, a 7-story commercial building to the east, and Berry Street followed by residential and commercial buildings to the west. A map of the site boundary is shown in **Figure 2**.

Currently, the Site consists of a vacant, approximately 10,000-square foot one -story commercial warehouse building on the north side of the site with a small basement in the northwest corner and undeveloped vegetated land on the south side of the Site. A survey of the Site is presented in **Figure 3**.

1.2 CONTEMPLATED REDEVELOPMENT PLAN

The proposed future use of the Site will consist of an affordable housing residential building with 55 units of government subsidized affordable housing and an asphalt-paved parking lot. Layout of the proposed site development is presented in **Figure 5** and **Appendix A**. The current zoning designation is M1-2/R6 which includes manufacturing and residential use. The proposed use is consistent with existing zoning for the property.

The proposed 11-story building is intended mainly for residential uses with mixed commercial retail uses on the first floor. The 68,625 gross square foot building will be approximately 168 feet tall and will be 100% affordable residential housing for families making no more than 60% of the area median income. The 55 apartment units will consist of (12) Studios, (15) 1BRs, (27) 2BRs, and (1) 3BR. The ground floor will include frontage on South 5th Street with 3,823 square feet of retail space and a 1,053-square-foot community facility. The building will also include a small basement in the northeast corner only.

The building will occupy approximately 8,300 feet of the approximately 15,420 square foot site. Areas of the property not improved by the building will be improved either with a paved parking lot or landscaping. The proposed development will include parking with an entrance from Berry St. and several small planting areas at each end of the parking area and one recreation area approximately 370 square feet in size at grade at the northeast corner of the proposed building. The proposed site re-development plan will require the demolition of the 1-story building with a footprint of 10,000 square feet and will be conducted in accordance with appropriate rules and regulation in New York City and State. The estimated depth of excavation is 13 feet below grade and will not go below the water table which is located approximately 50 feet below surface grade. The excavation will be for the installation of the foundation, utilities, and the small basement. Approximately 3,750 cubic yards of soil (275 for the parking area and 3,480 for the building) or 5,640 tons will be excavated for the proposed development.

The interim remedial measure contemplated under this IRMWP may be implemented independently of the proposed redevelopment plan.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The Site is located within an urban area that is primarily characterized by residential and commercial or mixed-use properties with many of the lots developed with multi-family buildings. Current uses of the adjoining properties were observed as follows:

North – The Site is bordered to the north by a 4-story, 3-story, and 7-story residential buildings as well as a 1-story commercial building.

South – The Site is bordered to the south by South 5th Street followed by the Williamsburg Bridge.

East – The Site is bordered to the east by a 7-story commercial building.

West - The Site is bordered to the west by a vacant 3-story industrial/manufacturing building, a lot currently under construction at the corner of South 5th Street and Berry Street, and a 2-story family home.

According to OER's online SPEED application, there are no hospitals, schools, or day care facilities within a 500-foot radius of the Site.

Figure 4 shows the surrounding land usage.

1.4 ENVIRONMENTAL INVESTIGATION REPORTS

The following environmental work plans and reports were developed for the Site:

- Phase I ESA, prepared by Hillmann Consulting, LLC dated August 20, 2013
- Preliminary Remedial Investigation Report, prepared by Equity Environmental Engineering, LLC (Equity) dated January 2016

2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS

A preliminary remedial investigation was performed and the results are documented in a companion document called "Preliminary Remedial Investigation Report, Williamsburg Bridgeview Apartments, 337 Berry Street", dated January 2016 (PRIR).

2.1 SUMMARY OF REMEDIAL INVESTIGATIONS PERFORMED

The following environmental work plans and reports were developed for the Site:

Preliminary Remedial Investigation Report, February 2016, prepared by Equity.

The following work was performed as part of the October 2015 (Phase 1) and December 2015/January 2016 (Phase 2) Preliminary Remedial Investigation:

1. Installed seven (7) soil borings, and collected fourteen (14) soil samples during Phase I and installed five (5) additional soil borings, and collected five (5) soil samples during Phase 2 of the PRI for chemical analysis from the soil borings to evaluate soil quality;

2. Installed four (4) permanent groundwater monitoring wells and collected four (4) groundwater samples during Phase 2 of the PRI for chemical analysis to evaluate groundwater quality;

3. Installed six (6) soil vapor probes and collected six (6) soil vapor during Phase 1and installed five (5) additional soil vapor probes and collected five (5) sub-slab soil vapor samples during Phase 2 of the PRI for chemical analysis; and

4. Collected Quality Assurance, Quality Control (QA/QC) samples in the form of one duplicate and field blank for soil and groundwater. A trip blank was also collected for groundwater.

2.2 SIGNIFICANT THREAT

The NYSDEC and NYSDOH have determined that this Site does not pose a significant threat to human health and the environment. Notice of that determination has been provided for public review.

2.3 SITE HISTORY

Site history is documented in a Phase I Environmental Site Assessment report prepared by Hillmann Consulting, LLC dated August 20, 2013. The following is a brief summary of the Site history:

From 1887, the northern portion of the Site has been developed with a 2-story building used by Water Purveyors Bureau, a single-story building used as a Wagon Shed and another 2-story building used by Department of City Works. By 1918, the single-story was occupied by an Auto Shed, the 2-story building for storage and remained in this configuration until 1938 when all three buildings were replaced with the current 1-story building. From 1947 until at least 2007, the 1-story building was occupied by the City of N.Y. Dept. of Correction Garage.

Since 1887, the southern portion of the Site has occupied by five small residential dwellings. By 1904, only two residential dwellings remained with the remaining area vacant until 1947 when a small warehouse occupied the vacant land. In 1977 the three buildings were replaced with a single auto body shop. As of 1995, the southern portion of the Site has remained vacant.

2.4 GEOLOGICAL CONDITIONS

According to the United States Geological Survey (USGS) 7.5 Minute Series Topographic Map of the Brooklyn, NY Quadrangle, the Property is located at approximately 45 feet above mean sea level. The terrain at the Property is relatively flat while sloping gently downward to the south-southwest. The closest down-gradient water body is the East River, located approximately 700-feet to the west.

The Site area consists of 2 to 11 feet of fill consisting of sand, silt, gravel, roots, brick, and other miscellaneous materials. The fill is underlain by dense to very dense sand formation with varying amounts of silt and gravel extending down.

According to the United States Department of Agriculture Soil Conservation Service, soil at the Site is classified as Urban Land. This designation applies to areas where at least 85 percent of the surface is covered by an impermeable surface such as asphalt, buildings, and roads.

Based on the topography, groundwater is estimated to flow to the west. Groundwater levels and/or flow direction(s) may vary due to seasonal fluctuations in precipitation, local usage demands, geology, underground structures or dewatering operations. Regionally, depth to groundwater is estimated at approximately twenty feet below surface grade.

2.5 CONTAMINATION CONDITIONS

2.5.1 Conceptual Model of Site Contamination

The Site is covered by a two to eleven feet layer of urban fill materials, which may have originally been sourced from impacted locations. Site was operated as an auto body shop and garage. Soil, as well as groundwater and soil vapor, may have been impacted by historical commercial use of the Site. Contaminants in fill, or soil contamination from historical Site uses, may contribute to groundwater and/or soil vapor contamination.

2.5.2 Description of Areas of Concern

Based on the previous Phase I ESA, prepared by Hillmann Consulting, LLC dated August 20, 2013, the following is a brief summary of the Site history:

From 1887, the northern portion of the Site has been developed with a 2-story building used by Water Purveyors Bureau, a single-story building used as a Wagon Shed and another 2-story building used by Department of City Works. By 1918, the single-story was occupied by an Auto Shed, the 2-story building for storage and remained in this configuration until 1938 when all three buildings were replaced with the current 1-story building. From 1947 until at least 2007, the 1-story building was occupied by the City of N.Y. Dept. of Correction Garage.

Since 1887, the southern portion of the Site has occupied by five small residential dwellings. By 1904, only two residential dwellings remained with the remaining area vacant until 1947 when a small warehouse occupied the vacant land. In 1977 the three buildings were replaced with a single auto body shop. As of 1995, the southern portion of the Site has remained vacant.

The AOCs identified for this site include:

1. Former auto shed/garage in the northern portion of the Site
2. Former warehouse and auto body shop in the southern portion of the Site

3. Potential presence of historic fill material.

2.5.3 Identification of Standards, Criteria and Guidance

The following standards, criteria and guidance (SCG) were referenced during Site Characterizations and Remedial Investigations:

- 6 NYCRR Part 175 - Special Licenses and Permits--Definitions and Uniform Procedures
- 6 NYCRR Part 182 - Endangered & Threatened Species of Fish & Wildlife
- 6 NYCRR Part 371 - Identification and Listing of Hazardous Wastes
- 6 NYCRR Part 375 – Environmental Remediation Programs;
- 6 NYCRR Part 608 - Use and Protection of Waters
- 6 NYCRR Part 661 - Tidal Wetlands - Land Use Regulations
- 6 NYCRR Part 663 - Freshwater Wetlands Maps and Classification
- 6 NYCRR Part 703, New York State Groundwater Quality Standards;
- 6 NYCRR Parts 700-706 - Water Quality Standards
- 29 CFR Part 1910.120 - Hazardous Waste Operations and Emergency Response
- NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation;
- NYSDEC Ambient Water Quality Standards and Guidance Values – TOGS 1.1.1;
- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York
- NYSDOH Generic Community Air Monitoring Plan
- NYSDEC STARS #1 - Petroleum-Contaminated Soil Guidance Policy
- NYSDEC SPOTS #14 - Site Assessments at Bulk Storage Facilities
- NYSDEC Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites

2.5.4 Summary of Findings of Preliminary Remedial Investigation

- Elevation of the property is approximately 45 feet above mean sea level and is relatively flat.
- Depth to groundwater is approximately 45 feet bgs at the Site.
- Groundwater flow is generally west beneath the Site.
- Depth to bedrock is approximately 40-45 feet bgs at the Site.
- The stratigraphy of the site, from the surface down, consists of 2-11 feet of urban fill material underlain by followed by varying thicknesses of well graded sand/silt (fine to medium sand) and well graded fine grain sand. Several of the borings; SB1-, SB-4, SB-

5, and SB-7 contained medium grain sand and gravel. In borings SB-4 through SB-7, refusal was hit at approximately 20 feet.

2.5.5 Soil/Fill Contamination

Soil/fill samples collected during the October 2015 and December 2015 Preliminary Remedial Investigation were compared to New York State Department of Environmental Conservation (NYSDEC) Part 375 Table 375-6.8 Unrestricted Use and Restricted Residential Use Soil Cleanup Objectives (SCOs). Several volatile organic compounds (VOCs) were detected at trace concentrations well below Unrestricted Use SCOs. Tetrachloroethene (PCE) and trichloroethene (TCE) were each detected in the shallow (0-2 foot interval) soil samples under the existing building with PCE detected at a maximum concentration of 0.0031 milligrams per kilogram [mg/kg] and TCE detected at a maximum concentration of 0.0073 mg/kg, both below the Unrestricted Use SCOs. The additional shallow soil sampling performed in the existing building showed PCE detected at a maximum of 0.0037 mg/kg and TCE detected at a maximum of 0.0081 mg/kg. Acetone and methylene chloride, benzene in two shallow soil samples, and toluene in one deep soil sample were also detected but below Unrestricted Use SCOs. No other VOCs were detected. Several semi-volatile organic compounds (SVOCs) were detected in the samples; however, the only SVOCs detected above the Restricted Residential Use SCOs were benzaldehyde (maximum [max] 1.39 mg/kg), benzo(a)anthracene (max 1.25 mg/kg), benzo(a)pyrene (max 1.62 mg/kg), and indeno(1,2,3-cd)pyrene (max 0.957 mg/kg) in two shallow soil (0-2 foot interval) samples. The pesticides dieldrin (max. 0.0092 mg/kg), 4,4'-DDD (0.0038 mg/kg), and 4,4'-DDT (max 0.0369 mg/kg) were only detected within shallow (0-2 foot interval) soil samples above Unrestricted Use SCOs. Total PCBs were detected in one shallow (0-2 foot interval) soil sample at 0.496 mg/kg, above Unrestricted Use SCO but below the Restricted Residential Use SCO. The metals copper (max. 50.4 mg/kg), iron (max. 23,100 mg/kg), lead (max. 392 mg/kg), mercury (max. 0.97 mg/kg) and zinc (max. 184 mg/kg) were detected above Unrestricted Use SCOs. Of these metals, only mercury exceeded Restricted Residential SCO in one shallow (0-2 foot) soil sample at SB-1.

A summary table of data for chemical analyses performed on soil samples is included in **Table 1**. **Figure 6** shows the location and posts the values for soil/fill that exceed the UUSCOs and RRSCOs.

2.5.6 Groundwater Contamination

Groundwater samples collected during the Preliminary Remedial Investigation were compared to the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (GQS) for Class GA (drinking water). The VOC PCE (max. 71.4 micrograms per liter [µg/L]) was detected above GQS in all fours groundwater samples and TCE (max. 27.2 µg/L) was detected above GQS in three groundwater samples. One SVOC, bis(2-ethylhexyl)phthalate (max. 3.8 µg/L) was detected in the groundwater, but at a concentration below GQS. The metals iron, manganese, selenium, and sodium were detected at concentrations above the GQS in the unfiltered samples with manganese (max. 0.849 mg/L), sodium (max. 122 mg/L), and selenium (0.012 mg/L) detected at concentrations above the GQS in the filtered samples. No PCBs or pesticides were detected.

A summary table of data for chemical analyses performed on groundwater samples is included in **Table 2**. Exceedance of applicable groundwater standards are shown. **Figure 7** shows the location and posts the values for groundwater that exceed the AWQS.

2.5.7 Soil Vapor Contamination

Soil vapor samples collected during the October 2015 and December 2015 Preliminary Remedial Investigation were compared to the New York State Department of Health (NYSDOH) Final Guidance on Soil Vapor Intrusion (October 2006) Matrix 1 and Matrix 2 values. The samples indicted the presence of petroleum related VOCs and chlorinated VOCs. Petroleum-related VOCs (BTEX) were detected at a maximum concentration of 79 micrograms per cubic meter [$\mu g/m^3$] in SG-5. Overall the highest reported concentration was for acetone (208 $\mu g/m^3$), 1,1-dichloroethylene (181 $\mu g/m^3$), cis-1,2-dichloroethylene (233 $\mu g/m^3$), heptane (142 $\mu g/m^3$), hexane (277 $\mu g/m^3$), propylene (3,990 $\mu g/m^3$), 2,2,4-trimethylpentane (377 $\mu g/m^3$), and trichlorofluoromethane (116 $\mu g/m^3$). Carbon tetrachloride was detected in two samples at a maximum concentration of 2.6 $\mu g/m^3$. 1,1,1-trichloethane (TCA) was detected in all six soil vapor samples and exceeded the guidance value at two locations with concentrations of 213 $\mu g/m^3$ and 278 $\mu g/m^3$. Trichloroethene (TCE) was detected in all of the soil vapor samples and exceeded the guidance value at all locations with concentrations of 21 $\mu g/m^3$, 21 $\mu g/m^3$, 135 $\mu g/m^3$, 688 $\mu g/m^3$, 1,980 $\mu g/m^3$, and 3,510 $\mu g/m^3$. Tetrachloroethene (PCE) was also detected in all soil vapor samples and exceeded the guidance value at four locations with concentrations of

142 μg/m^3, 656 μg/m^3, 739 μg/m^3, and 2,870 μg/m^3. The TCA, TCE, and PCE concentrations in soil vapor were above the monitoring level ranges established within the NYSDOH Final Guidance on Soil Vapor Intrusion. The five additional sub-slab soil vapor samples taken within the existing building detected PCE at a maximum concentration of 5.8 μg/m^3 and TCE detected above the guidance value with a maximum concentration of 31 μg/m^3. TCA was not detected in the sub-slab soil vapor samples.

A summary table of data for chemical analyses performed on soil vapor samples is included in **Table 3**. **Figure 8** shows the location and posts the values for soil vapor samples with detected concentrations of PCE, TCE, and TCA.

2.6 ENVIRONMENTAL AND PUBLIC HEALTH ASSESSMENTS

2.6.1 Qualitative Human Health Exposure Assessment

A Qualitative Human Health Exposure Assessment will be performed later as part of the Remedial Action Work Plan for this project.

2.6.2 Significant Threat

The NYSDEC and NYSDOH have determined that this Site does not pose a significant threat to human health and the environment. Notice of that determination was provided for public review.

2.6.3 Fish & Wildlife Remedial Impact Analysis

The Fish and Wildlife Remedial Impact Analysis will be presented in the Remedial Action Work Plan.

2.7 INTERIM REMEDIAL MEASURES

No prior Interim Remedial Measures (IRMs) have been performed at the Site.

2. 8 REMEDIAL ACTION OBJECTIVES FOR IRM

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

Soil

- Prevent direct contact with contaminated soil.
- Prevent exposure to contaminants volatilizing from contaminated soil.

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

Groundwater

- Remove contaminant sources causing impact to groundwater.
- Prevent direct exposure to contaminated groundwater.
- Prevent exposure to contaminants volatilizing from contaminated groundwater.

Soil Vapor

- Prevent exposure to contaminants in soil vapor.
- Prevent migration of soil vapor into dwelling and other occupied structures.

3.0 DESCRIPTION OF INTERIM REMEDIAL MEASURE PLAN

3.1 SUMMARY OF REMEDIAL ALTERNATIVES

Remedial Alternatives Analysis will be performed later as part of the Remedial Action Work Plan.

3.2 SELECTION OF THE PREFERRED REMEDY

The Remedial Action will be selected later as part of the Remedial Action Work Plan.

3.3 SUMMARY OF INTERIM REMEDIAL MEASURES

The interim remedial measure is consistent with protection of public health and the environment for the intended use of the property. The interim remedial measure will consist of:

1. Performance of all required NYS BCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Performance of a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Establishment of interim Site Specific (Track 4) Soil Cleanup Objectives (SCOs).
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
5. Completion of a Waste Characterization Study prior to excavation activities. Waste characterization soil samples will be collected at a frequency dictated by disposal facility(s).
6. Excavation and removal of soil/fill exceeding interim Site Specific (Track 4) SCOs. Approximately 60% of the Site will be excavated to a depth of approximately 13 feet below grade surface [bgs] for the new building's basement level. The elevator pit will be excavated to a depth of 17 feet bgs. The perimeter of the Site adjacent to the existing high rise buildings will be excavated to 10 feet bgs along the east boundary and 4-5 feet bgs along the western boundary. The remainder of the Site will be excavated to a depth of 1 foot bgs for the outdoor parking area and 2 feet in the landscaped areas. Approximately 5,640 tons of historic fill will be removed from the Site and properly disposed at an appropriately licensed or permitted facility.

7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media on-Site.
8. Management of excavated materials including temporarily stockpiling and segregating in accordance with defined material types and to prevent co-mingling of contaminated material and non-contaminated materials.
9. Removal of all USTs that are encountered during soil/fill removal actions. Registration of tanks and reporting of new petroleum spills associated with UST's and appropriate closure of these petroleum spills in compliance with applicable local, State and Federal laws and regulations.
10. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of interim Site Specific Track 4 SCOs.
11. Transportation and off-Site disposal of all soil/fill material at licensed or permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-Site.
12. Demarcation of residual soil in landscaped areas.
13. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
14. Performance of all activities required for the interim remedial measure, including acquisition of required permits and attainment of pretreatment requirements, in compliance with applicable laws and regulations.
15. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.

All deviations from this IRMWP will be promptly reported to NYSDEC. After completion of the IRM, remedial activities will be completed at the Site in accordance with a NYSDEC-approved RAWP and the Department-issued Decision Document.

3.4 SOIL CLEANUP OBJECTIVES AND SOIL/ FILL MANAGEMENT

Interim Site Specific Track 4 SCOs are proposed for this project. These SCOs are:

Contaminant	Site-Specific SCO's
Total SVOCs	250 ppm
Mercury	2 ppm
PCE, TCE, TCA	Groundwater Protection Standards

Soil and materials management on-Site and off-Site, including excavation, handling and disposal, will be conducted in accordance with the Soil/Materials Management Plan in Section 5.4. Discrete contaminant sources (such as hotspots) identified during the interim remedial measure will be identified by GPS or surveyed.

Soil/Fill Excavation and Removal

The location of planned excavations is shown in **Figure 10**. The total quantity of soil/fill expected to be excavated and disposed off-Site is 3,760 cubic yards or approximately 5,640 tons. For each disposal facilities to be used in the interim remedial measure, a letter from the developer/QEP to the receiving facility requesting approval for disposal and a letter back to the developer/QEP providing approval for disposal will be submitted to NYSDEC prior to any transport and disposal of soil at a facility.

Disposal facilities will be reported to NYSDEC when they are identified and prior to the start of interim remedial measure.

End-point Sampling

End-point samples will be analyzed for compounds and elements as described below utilizing the following methodology:

- Volatile organic compounds by EPA Method 8260;
- Semi-volatile organic compounds by EPA Method 8270;
- Target Analyte List metals; and
- Pesticides/PCBs by EPA Method 8081/8082.

New York State ELAP certified labs will be used for all end-point sample analyses. Labs performing end-point sample analyses will be reported in the FER. The FER will provide a

tabular and map summary of all end-point sample results and will include all data including non-detects and applicable standards and/or guidance values.

Confirmation End-point Sampling

Removal actions for development purposes under this plan will be performed in conjunction with confirmation end-point soil sampling. Confirmation samples will be collected as described in DER-10 at locations to be determined by NYSDEC. To evaluate attainment of interim Site Specific Track 4 SCOs, analytes will include those for which SCOs have been developed, including SVOCs, mercury, PCE, TCE, and TCA, according to analytical methods described above.

Hotspot End-point Sampling

For any hotspots identified during this remedial program, including any hotspots identified during the interim remedial measure, hotspot removal actions will be performed to ensure that hot-spots are fully removed and end point samples will be collected at the frequency specified in DER-10.

Quality Assurance/Quality Control

One duplicate soil sample for each of 20 samples collected will be analyzed to maintain property quality assurance and quality control (QA/QC) and detect any lab artifacts. One duplicate sample will be collected during the endpoint sampling for this project. The duplicate sample will be analyzed for the same parameters as the endpoint samples.

Import of Soils

Import of soils onto the property will be performed in conformance with the Soil/Materials Management Plan in Section 5.4. Imported soil will meet the lower of:

- Track 2 Residential Use SCO's, and
- Groundwater Protection Standards in Part 375-6.8.

The estimated quantity of soil to be imported into the Site for backfill and cover soil is 600 cubic yards or 900 tons (for backfill and landscaped areas).

Reuse of Onsite Soils

Soil reuse is not planned on this project.

4.0 INTERIM REMEDIAL MEASURE PROGRAM

4.1 GOVERNING DOCUMENTS

All remedial work performed under this plan will be in full compliance with the governing documents described in this section of the IRMWP.

4.1.1 Site Specific Health & Safety Plan (HASP)

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 Health and Safety Plan and for the appropriate performance of work according to that plan and applicable laws.

The Health and Safety Plan (HASP) and requirements defined in this IRM Work Plan pertain to all remedial and invasive work performed at the Site. A copy of the HASP is provided as **Appendix B**. The site-specific HASP will be reviewed with Site personnel and appropriate sub-contractors prior to the initiation of fieldwork. All proposed work will be performed in "Level D" personal protective equipment unless field condition warrant additional protection.

The Site Safety Coordinator will be Equity Environmental unless otherwise specified (and approved) by the NYSDEC. A resume will be provided to NYSDEC prior to the start of remedial construction.

Confined space entry will comply with all OSHA requirements to address the potential risk posed by combustible and toxic gasses. Potential confined spaces on this project include utility trenches and other excavation areas.

4.1.2 Quality Assurance Project Plan (QAPP)

A QAPP, detailing procedures necessary to generate data of sufficient quality and quantity to represent successful performance of the IRM at the Site, has been provided as **Appendix I** of this

report. The QAPP includes a Sampling and Analysis Plan (SAP), detailing sampling and analysis of all media (endpoint samples, waste characterization samples, fill and soil cover samples, etc.), and which identifies methods for sample collection and handling.

4.1.3 Soil/Materials Management Plan (SoMP)

All soil removal will follow the SoMP plan as specified in Section 5.4, below. The SoMP includes detailed plans for managing all soils/materials that are disturbed at the Site, including excavation, handling, storage, transport and disposal, and includes all controls that will be applied to these efforts to assure effective, nuisance-free performance in compliance with all applicable Federal, State and local laws and regulations.

All contaminant source removal areas will be surveyed at the completion of excavation. This information will be provided on maps in the FER.

4.1.4 Storm-Water Pollution Prevention Plan (SWPPP)

The Volunteer is responsible for ensuring that a storm water pollution prevention plan (SWPPP) will be prepared for the Site prior to demolition and soil removal activities. The plan will address requirements of New York State Storm-Water Management Regulations including physical methods to control and/or divert surface water flows and to limit the potential for erosion and migration of Site soils, via wind or water, and will accommodate the construction sequencing and staging areas. The erosion and sediment controls will be in conformance with requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control.

4.1.5 Community Air Monitoring Plan (CAMP)

The NYSDOH Generic CAMP (provided in **Appendix J**) will be initiated during all ground intrusive activities, and during any other fieldwork that is reasonably likely to generate significant dust or vapors from known or suspected contaminated soils. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pit excavation or trenching, and the installation of soil borings or monitoring wells. The implementation of the CAMP will document the presence or absence of VOCs and dust in the air surrounding the work zone, which may migrate off-site due to fieldwork activities. This plan provides guidance on the need for implementing more stringent dust and emission controls based on air quality data.

Mitigation measures may include reducing the surface area of contaminated soil being disturbed at one time, watering exposed soils to reduce fugitive dust and odors, or stopping excavation activities. Dust suppression activities will be conducted during construction activities that will disturb on-site soils and may include misting, reduction in soil movement, or cessation of excavation.

Real-time air monitoring for VOCs and particulate levels at the perimeter of the exclusion zone or work area will be performed. Periodic monitoring for VOCs will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection, for instance, will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence. Exceedances of action levels observed during performance of the CAMP will be reported to the NYSDEC Project Manager and included in the Daily Report.

VOC Monitoring, Response Levels, and Actions

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

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

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

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shut down.

All 15-minute readings must be recorded and be available for NYSDEC personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

Particulate Monitoring, Response Levels, and Actions

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

If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue

with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

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

All readings will be recorded and will be available for NYSDEC personnel to review.

4.1.6 Contractors Site Operations Plan (SOP)

The Remedial Engineer will review all plans and submittals for this remedial project (including those listed above and contractor and sub-contractor document submittals) and confirm that they are in compliance with this IRMWP. All remedial documents will be submitted to NYSDEC and NYSDOH in a timely manner and prior to the start of work.

4.1.7 Citizen Participation Plan

An approved Citizen Participation Plan (CPP) including an overview of the BCP program, background of the Site, a summary of the investigative findings for the Site, and citizen participation activities is included as **Appendix D**.

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 the 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.

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

Brooklyn Public Library
Williamsburgh Branch,
240 Division Avenue at Marcy Avenue
Brooklyn, NY 11211
Call for hours: (718) 302-3485

NYSDEC, Region 2 Office
47-40 21st Street
Long Island City, NY 11101
Call in advance: (718) 482-4900

4.2 GENERAL INTERIM REMEDIAL CONSTRUCTION INFORMATION

4.2.1 Project Organization

Principal personnel who will participate in the interim remedial measure include Mario Procida/Project Manager. The Professional Engineer (PE) and Qualified Environmental Professionals (QEP) for this project are Peter Jaran, P.E. and Robert Jackson. Resumes of key personnel involved in the interim Remedial Measure are included in **Appendix G**.

4.2.2 Remedial Engineer and Qualified Environmental Professional

Remedial Engineer

The Remedial Engineer for this project will be Peter Jaran, 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 remedial program for the 105 S. 5th Street/337 Berry Street (NYSDEC Site No. C2XXXX). The Remedial Engineer will certify in the Final Engineering Report that the interim remedial measures were observed by qualified environmental professionals under his supervision and that the remediation requirements set forth in the IRM 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 the IRMWP.

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 IRM Work Plan and will certify compliance in the Final Engineering Report. The Remedial Engineer will provide the certifications listed in Section 11.2 in the Final Engineering Report.

Qualified Environmental Professional

The Qualified Environmental Professional (QEP) for this project will be Robert Jackson, P.E. The QEP will oversee environmental remedial activities on the Site, document the proper removal of contaminated soils, collect waste characterization as well as site integrity samples, inspect and certify the proper importation of approval fill soils, and assist the Remedial Engineer in the preparation of documents including the FER, the SMP, and periodic status reports.

4.2.3 Interim Remedial Measure Construction Schedule

A schedule for performance of the remedial work is provided in Section 12.

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. NYSDEC will be notified by the Volunteer of any variances issued by the Department of Buildings. No remedial work will be conducted on the weekend (Saturday or Sunday) unless expressly permitted by NYSDEC. NYSDEC reserves the right to deny alternate remedial construction hours.

4.2.5 Site Security

Site access will be controlled by a NYCDOB approved construction fence and site management.

4.2.6 Traffic Control

Traffic control will be provided by the contractor during equipment entrance and egress from the Site. Trucks will follow the approved truck route in Section 5.4.4. Drivers of trucks leaving the Site with soil/fill will be instructed to proceed without stopping in the vicinity of the site to prevent neighborhood impacts. The planned route on local roads for trucks leaving the site is presented on **Figure 12**.

4.2.7 Contingency Plan

If unknown conditions are encountered on-site during sub-grade removal (e.g., discovery of a previously unidentified UST), the Contingency Plan (provided in Section 5.5) and all applicable NYSDEC guidelines will be followed to address the condition(s).

4.2.8 Worker Training and Monitoring

The Volunteer is responsible for insuring that all Site contractors provide their workers with applicable training (i.e. HAZWOPER, site safety training and medical monitoring, as necessary).

4.2.9 Agency Approvals

The Volunteer has addressed all SEQRA requirements for this Site. All permits or government approvals required for remedial construction have been, or will be, obtained prior to the start of remedial construction. Acceptance of this IRMWP by NYSDEC does not constitute satisfaction of these requirements and will not be a substitute for any required permit.

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

4.2.10 NYSDEC BCP Signage

A project sign will be erected at the main entrance to the Site prior to the start of any remedial activities. The sign will indicate that the project is being performed under the New York State Brownfield Cleanup Program. The sign will meet the detailed specifications provided by the NYSDEC Project Manager and contained in **Appendix H**.

4.2.11 Pre-Construction Meeting with NYSDEC

A pre-construction meeting among NYSDEC, the Volunteer, the RE and QEP, and the General Contractor will take place prior to the start of remedial construction activities.

4.2.12 Emergency Contact Information

An emergency contact list with names and telephone numbers that will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency is provided below.

Table: Emergency Contact Information

Emergency Contact	Phone Number
EMERGENCY	**911**
Hospital: SUNY Downstate Medical Center	(888) 270-7869
Police Department	(212) 334-0611 or 911
Fire Department	911
Site Health and Safety Officer,	TBD
Remedial Engineer Peter Jaran, P.E	(973) 479-2381
NYSDEC Project Manager,	TBD
NYSDOH Project Manager,	TBD
Construction Manager	TBD

4.2.13 Remedial Measure Costs

The total estimated cost of the anticipated Interim Remedial Measure is $552,970. An itemized and detailed summary of estimated costs for all remedial activity is attached as **Appendix E**. This will be revised based on actual costs and submitted as an Appendix to the Final Engineering Report.

4.3 SITE PREPARATION

4.3.1 Agency Notification and Mobilization

Notifications

The NYSDEC and OER will be notified in writing at least five (5) business days prior to the initiation of any of the on-site work and during the course of the fieldwork. Changes to fieldwork scheduling will be provided via facsimile transmission and/or email. All applicable local agencies will also be notified prior to the initiation of site work. NYSDEC will have the opportunity to participate in all remediation project status meetings (adequate notice of these meetings will be provided).

Prior to the implementation of any ground intrusive activities, a request for a complete utility mark-out of the subject property will be submitted as required by New York State Department of Labor regulations. Confirmation of underground utility locations will be secured, and a field check of the utility mark-out will be conducted prior to the initiation of work. Any utilities on the Site will be protected (as necessary) by the contractor or Volunteer.

Site Mobilization

Mobilization will be conducted as necessary for each phase of work at the Site. Mobilization includes field personnel orientation, equipment mobilization (including securing all sampling equipment needed for the field investigation), marking/staking sampling locations and utility mark-outs. Each field team member will attend an orientation meeting to become familiar with the general operation of the Site, health and safety requirements, and field procedures. Site mobilization will be conducted in a manner such that erosion and sedimentation control, utility marker and easement layout, and other site preparation tasks are fully instituted before construction begins.

4.3.2 Erosion and Sedimentation Controls

This section describes preventative measures that will be taken to protect the Site from soil erosion and sedimentation during remedial activities. A final ESCP, reflecting final Site development plans and any approved modifications to the scope of remedial work, will be submitted to the NYSDEC for review and approval prior to the start of construction activities.

The final ESCP will include the following elements:

- A location map including the proximity of the Site to relevant off-site features;
- An Existing Conditions Site Plan;
- A grading plan and construction timetable including finished elevations and addressing the sequencing of the project; and,
- The location and type of all erosion and sediment control measures (e.g., silt fence, hay bale checks, stabilized construction entrance, etc.) and sequencing of the measures, if needed.

The Site remediation will occur in such a way as to permit on-site stormwater to remain on the Site.

4.3.3 Stabilized Construction Entrance(s)

Steps will be taken to ensure that trucks departing the site will not track soil, fill or debris off-Site. Such actions may include use of cleaned asphalt or concrete roads or use of stone or other aggregate-based egress paths between the truck inspection station and the property exit.

Measures will be taken to ensure that adjacent roadways will be kept clean of project related soils, fill and debris.

4.3.4 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 IRMWP and implementation of all required, appropriate, or necessary health and safety measures during performance of work under this IRMWP. The Volunteer and its contractors are solely responsible for safe execution of all invasive and other work performed under this IRMWP. 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 IRMWP. Approval of this IRMWP by NYSDEC does not constitute satisfaction of these requirements.

The presence of utilities and easements on the Site has been investigated by the Remedial Engineer. It has been determined that no risk or impediment to the planned work under this IRM Work Plan is posed by utilities or easements on the Site.

4.3.5 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. 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.

4.3.6 Equipment and Material Staging

Equipment and materials will be stored and staged in a manner that complies with applicable laws and regulations. Specific Site areas will be designated for the staging of equipment and materials. Staging areas will be located and managed such that: a) non-contaminated materials do not contact or become intermixed with contaminated materials; and, b) the likelihood of worker and/or visitor exposures to contaminated media is minimized.

4.3.7 Decontamination Area

Decontamination of field equipment will be conducted to prevent Site cross-contamination, minimize the potential for off-site contamination and to reduce exposures to contaminated media. All decontamination activities will be documented in field logbooks.

Trucks and other heavy equipment remaining on-site will be brushed to remove easily accessible gross accumulations of soil at the end of each work day, and prior to moving between excavation areas or moving toward the Site exit. A dedicated decontamination area will be provided as part of the erosion and sedimentation control for vehicles exiting the Site, and will be designed such that there is continuity between the equipment wash area and the clean egress path. Heavy equipment will be brushed and sprayed with high-pressure water and/or steam to remove soil adhering to surfaces (including wheels and vehicle undercarriages), prior to exiting the Site.

Any non-disposable sampling equipment or personal protective equipment requiring decontamination will be conducted on a decontamination line setup on plastic sheeting, proceeding from dirty to clean. All items (disassembled as needed) will be washed/brushed thoroughly in an Alconox (or similar) solution, then rinsed with clean water (and/or nitric acid and methanol, as appropriate) per established USEPA decontamination protocols. All down-hole gauging and pumping equipment will be allowed to run fully submerged in both soapy and clean water. Rinse blanks will be collected as per the requirements of the QAPP.

Equipment known or suspected to be impacted by petroleum or solvent contamination, grossly contaminated media or materials subject to conditions specified in the Contingency Plan (Section 5.5), will be decontaminated on an engineered pad designed to capture and contain wash water, which will be containerized and characterized prior to off-site disposal at a permitted facility. Based on known contaminant conditions, decontamination rinse water generated during other decontamination activities will be allowed to infiltrate into on-site soils, either directly to the surface (for minor quantities of water that are not likely to exhibit sheet flow) or to the subsurface via engineered discharge pits.

4.3.8 Site Fencing

Site fencing (6 feet in height minimum with a locking gate) will be installed as part of Site preparation, as necessary.

4.3.9 Demobilization

Demobilization will include:

- As necessary, restoration of temporary access areas and areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management areas, and access area);
- Removal of sediment from erosion control measures and truck wash and disposal of materials in accordance with applicable laws and regulations;
- Equipment decontamination, and;
- General refuse disposal.

Equipment will be decontaminated and demobilized at the completion of all field activities. Investigation equipment and large equipment (e.g., soil excavators) will be washed at the truck inspection station as necessary. In addition, all investigation and remediation derived waste will be appropriately disposed.

4.3.10 Well Decommissioning

Any existing monitoring wells located within construction areas will be properly decommissioned according to technical guidance provided in NYSDEC CP-43: Groundwater Monitoring Well Decommissioning Policy. The monitoring well casing will be exposed to a depth corresponding to the depth of planned excavation in the immediate vicinity of the well, the exposed casing will be cut off at the level of the excavation floor and the remaining subsurface portion of the casing will be grouted in-place, as per CP-43 Section 6.0.

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 IRMWP or other sensitive or time critical information. However, such conditions must also be included in the daily reports. Emergency conditions and changes to the IRMWP 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.
A Site map that shows a predefined alpha-numeric grid for use in identifying locations described in reports submitted to NYSDEC is attached in **Figure 11**.

The NYSDEC assigned project number will appear on all reports.

4.4.2 Monthly Reports

Monthly reports prepared in accordance with DER-10 Section 5.7(b) will be submitted to NYSDEC and NYSDOH Project Managers within one week following the end of the month of the reporting period and will include, at a minimum:

- 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 interim Remedial Measures 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

All complaints from citizens will be promptly reported to NYSDEC. Complaints will be addressed and outcomes will also be reported to NYSDEC in daily reports. Notices to NYSDEC will include the nature of the complaint, the party providing the complaint, and the actions taken to resolve any problems.

Any complaints from the public regarding nuisances or other Site conditions will be handled as follows:

- Information from the person making the complaint (name, phone number, address, etc.) will be obtained, if possible, so follow-up can be completed.
- The nature of the complaint as well as the date, time, and weather conditions will be noted.
- The complaint will be addressed by on-site personnel.
- The person logging the complaint will be re-contacted (if contact information was provided), so that the resolution of the complaint can be documented.
- In the event that the complaint cannot be resolved, the NYSDEC project manager will be contacted in writing.

4.4.5 Deviations from the Interim Remedial Measure Plan

All changes to the IRMWP will be reported to the NYSDEC Project Manager and will be documented in daily reports and reported in the FER. The process to be followed if there are any deviations from the IRMWP will include a request for approval for the change from NYSDEC noting the following:

- Reasons for deviating from the approved IRMWP;
- Effect of the deviations on overall remedy; and
- Determination that the interim remedial measure with the deviation(s) is protective of public health and the environment.

Notification will be provided to the NYSDEC by telephone for conditions requiring immediate action (e.g., conditions judged to be a danger to on-site personnel or the surrounding community).

4.5 SITE MANAGEMENT PLAN

A Track 4 remedial action is anticipated and Site Management is anticipated to be required. Site Management will be the last phase of remediation. Site Management will begin with the approval of the Final Engineering Report and issuance of the Certificate of Completion (COC) for the Remedial Action.

4.6 QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

A Qualitative Human Health Exposure Assessment will be performed later as part of the RAWP.

5.0 INTERIM REMEDIAL MEASURE PROGRAM: MATERIAL REMOVAL FROM SITE

5.1 SOIL CLEANUP OBJECTIVES

The interim Soil Cleanup Objectives for this Site are Restricted Residential Use SCOs as modified by several site specific SCO's discussed in Section 3.4 of this work plan. Soil and materials management on-Site and off-Site will be conducted in accordance with the Soil Management Plan as described below.

Table 1 summarize all soil samples that exceed the SCOs proposed for this IRMWP. A spider map that shows all soil samples that exceed the SCOs proposed for this IRMWP is shown in **Figure 6**.

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

5.2 REMEDIAL PERFORMANCE EVALUATION (POST EXCAVATION END-POINT SAMPLING)

5.2.1 End-Point Sampling Frequency

At a minimum, one soil sample will be collected at all hotspots for from each 30 feet of wall (minimum of one sample per wall) and one sample will be collected from every 900 square feet of floor (minimum of one sample per floor). In addition, post construction end point samples will be collected from the base of the completed excavation. Samples will only be collected where soil remains at the conclusion of construction excavations, i.e. no samples will be collected from locations where the excavation terminates at bedrock. An Endpoint Sample Location Map is included as **Figure 9**.

5.2.2 Methodology

Underlying and surrounding soils will be visually inspected and screened with the PID after the removal of all soils necessary for construction.

Soil samples will be collected using decontaminated stainless steel trowels and dedicated, disposable latex gloves. Samples will be place in pre-cleaned jars provided by the laboratory. After sample collection, the sample containers will be placed in a cooler prior to overnight transport to a NYSDOH-certified laboratory for analysis. Appropriate chain of custody procedures will be followed.

5.2.3 Reporting of Results

5.2.4 QA/QC

Quality Assurance / Quality Control protocols are fully specified in the QAPP (**Appendix I**). QA/QC methodology includes the following:

- One duplicate sample for every 20 samples collected will be submitted to the approved laboratory for analysis of the same parameters.
- Collected endpoint samples will be appropriately packaged, placed in coolers and transferred under proper Chain of Custody to the analytical laboratory. Samples will be containerized in appropriate laboratory provided glassware and shipped in plastic coolers. Samples will be preserved through the use of ice or "cold-packs" to maintain a temperature of 4^{o} C.
- Dedicated disposable sampling materials will be used for the collection endpoint samples, eliminating the need to prepare field equipment (rinsate) blanks. However, if non-disposable equipment is used, (stainless steel scoop, etc.) field rinsate blanks will be prepared at the rate of 1 for every eight samples collected.

5.2.5 DUSR

Complete laboratory data packages will provided to an independent, third-party data validator. A summary of the findings in the Data Usability Summary Reports (DUSRs) will be provided in the FER.

5.2.6 Reporting of End-Point Data in FER

Chemical analysis of end-point and contingency samples will be conducted by a NYSDOH ELAP certified laboratory. The FER will provide all end-point sample results and exceedances of SCOs.

5.3 ESTIMATED MATERIAL REMOVAL QUANTITIES

The estimated quantity of soil/fill to be removed from the Site is 3,760 cubic yards or approximately 5,640 tons. The estimated quantity of clean fill to be imported to the Site is 600 cubic yards or 900 tons. The need for relocation of soils on-site will be determined during construction and in consultation with the NYSDEC.

5.4 SOIL/MATERIALS MANAGEMENT PLAN

5.4.1 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.

Grossly contaminated soil will be identified by the presence of: non-aqueous phase liquids (NAPL); visual indications of staining, discoloration or the presence of other obvious signs of contamination; noticeable odors associated with petroleum, solvents or other chemicals; and/or elevated PID readings compared to background levels.

Soil screening will be used to establish temporary excavation end-points by: 1) establishing the absence of soil exhibiting significant field evidence of contamination (grossly contaminated media) or debris materials likely to be associated with contaminants of concern (e.g., urban fill); and, 2) identifying the presence of non-disturbed native soils. The use of direct-reading hand-held screening devices (e.g., PID) will be employed, as appropriate, to determine likely excavation boundaries; final endpoints, however, will only be established through laboratory analysis of confirmatory samples.

All primary contaminant sources (including but not limited to tanks and hotspots) identified during Site Characterization, Preliminary Remedial Investigation, and Interim Remedial Measure

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.

5.4.2 Stockpile Methods

All stockpile activities will be compliant with applicable laws and regulations. Soil stockpile areas will be appropriately graded to control run-off in accordance with applicable laws and regulations and will be located in areas not subject to flooding or excessive sheet flow during storm events. Material to be stockpiled will be placed within an area designed and constructed to contain the materials from all sides and prevent runoff and dispersion. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible.

Excavated soil from suspected areas of contamination (e.g., hot spots, USTs, drains, etc.) will be stockpiled separately and will be segregated from clean soil and construction materials. Stockpiles will be used only when necessary and will be removed as soon as practicable.

Excavated soils will be stockpiled on, at minimum, double layers of 8-mil minimum sheeting. Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC.

Soil stockpiles will be continuously encircled with silt fences. Hay bales (or equivalent) 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.

5.4.3 Materials Excavation and Load Out

The Remedial Engineer or a qualified environmental professional under their 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 has been investigated by the Remedial Engineer. It has been determined that no risk or impediment to the planned work under this interim Remedial Measure Work Plan is posed by utilities or easements on the Site.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-Site. 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 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 IRM Work Plan.

Each hotspot and structure to be remediated (USTs, associated piping, 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 Interim Remedial Measure 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.

5.4.4 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.

Proposed in-bound and out-bound truck routes to the Site are shown in **Figure 12**. 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. All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes.

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.

5.4.5 Materials Disposal Off-Site

Waste disposal locations, to be established at a later date, will be reported to the NYSDEC Project Manager prior to the start of remedial excavation. A sample Non-Hazardous Soil Disposal manifest is included as **Appendix C**.

The total quantity of material expected to be disposed off-Site (excluding debris from building demolition) is anticipated to be approximately 3,760 cubic yards or approximately 5,640 tons. Several separate disposal facilities may be secured (as warranted), based on the expected composition of known contaminated soils. Information from the disposal facilities will be sent to the NYSDEC before the initiation of soil removal at the Site.

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 SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

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 disposed, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2, if disposed in New York State.

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 interim Remedial Measure, 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.

5.4.6 Materials Reuse On-Site

Soil and fill that is derived from the property that meets the soil cleanup objectives established in this plan may be reused on-Site. "Reuse on-Site" means material that is excavated during the remedy or development, does not leave the property, and is relocated within the same property and on comparable soil/fill material, and addressed pursuant to Engineering Controls. The Remedial Engineer will ensure that procedures defined for materials reuse in this IRMWP 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 SMP.

5.4.7 Fluids Management

The known groundwater elevation (approximately 45 feet) is below the anticipated maximum depth of excavation and it is not expected that significant quantities of groundwater requiring management will be generated during Site development. Dewatering is not proposed.

Any liquids to be removed from the Site, including dewatering fluids if required, would 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 permit approval by NYCDEP.

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

5.4.8 Demarcation

After the completion of soil removal and any other invasive remedial activities and prior to backfilling, the top of the residual soil/fill will be defined by one of three methods: (1) placement of a demarcation layer. The demarcation layer will consist of geosynthetic fencing or equivalent material to be placed on the surface of residual soil/fill to provide an observable reference layer. A description or map of the approximate depth of the demarcation layer will be provided in the FER; or (2) a land survey of the top elevation of residual soil/fill before the placement of cover soils, pavement and associated sub-soils, or other materials or structures; or, (3) all materials beneath the approved cover will be considered impacted and subject to site management after the remedy is complete. Demarcation may be established by one or any combination of these three methods. As appropriate, a map showing the method of demarcation for the Site and all

associated documentation will be presented in the FER. This demarcation will constitute the top of the 'Residuals Management Zone', the zone that requires adherence to special conditions for disturbance of contaminated residual soils defined in the SMP.

5.4.9 Backfill from Off-Site Sources

All imported uncontaminated, clean soil will be from an approved source/facility and will be evaluated by the Remedial Engineer/QEP to ensure that:

- A segregated stockpile is properly maintained at the source and will not be comingled with any other material prior to importing and grading the clean soil material at the Site;
- Material does not include any prohibited material (e.g., solid waste, including construction and demolition material);
- Screening for evidence of contamination by visual, olfactory and PID soil screening practices prior to testing at the source as well as upon importing to the Site for grading is completed; and
- A grab sample (for VOCs) and a maximum five-part composite sample will be collected from the segregated stockpile at the source, with sampling frequency and laboratory analyses conforming to the requirements specified in DER-10 5.4(e), including soil analysis for the following parameters:

  TCL VOCs by EPA Method 8260C
  TCL SVOCs by EPA Method 8270D
  TCL Pesticides by EPA Method 8081B
  TCL PCBs by EPA Method 8082A
  TAL Metals by EPA Method 6010C/7471B

Upon receipt of the segregated stockpile analytical results collected at the source, a Clean Soil Sampling Report will be submitted to DEC for review/approval prior to importing. The report will include the following:

- Summary of number of samples collected and analyzed, tabulated data and comparison to the selected Site Use SCOs;
- Analytical data sheets and chain of custody documentation;

- Summary of the weight and volume of imported material;
- Photographs from the segregated stockpile at the source with sample point locations identified;
- An affidavit from the source/facility on company letterhead stating that the segregated stockpile of the weight and volume of material to be imported has been properly maintained at the source and complies with the requirements listed above; and
- A copy of source/facility NYSDEC permit;

The following documentation will be presented in the FER:

- Copies of purchase invoices;
- Truck transportation slips from the source to the Site;
- Confirmation of the weight and volume of NYSDEC approved clean soil imported;
- Site plan depicting all areas where the NYSDEC approved clean soil cover has been placed.

All materials proposed for import onto the Site will be approved by the Remedial Engineer and will be in compliance with provisions in this IRMWP 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 Interim Remedial Measures Work Plan and 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 lower of the protection of groundwater or the protection of public health soil cleanup objectives for Restricted Residential Use as set forth in Table 375-6.8(b) of 6 NYCRR Part 375. Non-compliant soils will not be imported onto the Site without prior approval by NYSDEC. Nothing in the approved

IRMWP or Remedial Action Work Plan or its approval by NYSDEC should be construed as an approval for this purpose.

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 IRMWP or 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.

5.4.10 Stormwater Pollution Prevention

An ESCP that conforms to the requirements of the NYSDEC Division of Water guidelines and NYS regulations will be developed by the Contractor and approved by the RE. This plan will be provided to the NYSDEC prior to any remedial or development construction activities.

Silt fencing or hay bales will be installed around the entire perimeter of the remedial construction area and 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 barrier and hay bale check functional. All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

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

5.4.11 Community Air Monitoring Plan

A CAMP will be implemented during all ground intrusive activities. Exceedances observed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers and included in the Daily Report.

5.4.12 Odor, Dust and Nuisance Control Plan

Suppression of odors, dust and other nuisance conditions will be conducted during all invasive work performed during construction activities. 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 Interim Remedial Measures Work Plan and Remedial Action Work Plan."

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 minimizing the generation of vapors and/or odors. If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of 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.

Dust Control Plan

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

- Dust suppression will be achieved through the use of a dedicated on-Site water truck or other equivalent equipment for road wetting capable of spraying water directly onto off-road areas including excavations and stockpiles (water will be available on-site at suitable supply and pressure for use in dust control if a dedicated water truck is not utilized).
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-Site roads will be limited in total area to minimize the area required for water spraying.
- Materials will be hauled in properly tarped containers or vehicles, which will travel at restricted speeds while on-site.

All reasonable attempts will be made to keep visible and/or fugitive dust to a minimum and adhere to particulate emissions limits identified in the CAMP.

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.

5.5 CONTINGENCY PLAN

This contingency plan is developed for the remedial construction to address the discovery of unknown structures or contaminated media during excavation. Identification of unknown contamination source areas during invasive Site work will be promptly communicated to NYSDEC's Project Manager. Petroleum spills will be reported to the NYSDEC Spill Hotline. These findings will be included in the daily report. If previously unidentified contaminant sources are found during on-Site remedial excavation or development-related excavation, sampling will be performed on contaminated source material and surrounding soils and reported to NYSDEC. Chemical analytical testing will be performed for TCL volatiles and semi-volatiles, pesticides/PCBs, and TAL metals, as appropriate.

This section describes actions that must occur upon the discovery of previously unknown contaminated material(s), USTs, demolition debris or other unknown unidentifiable material that requires special handling. On-site personnel should be prepared to respond appropriately if the following previously unknown materials are encountered (if encountered, this material could result in a recommendation from the Remedial Engineer/QEP for an immediate, temporary shutdown of construction activities):

- Previously unknown tanks (including drums) containing a liquid product that is not likely to be water and is likely to present a threat to worker health or safety;
- Previously unknown demolition debris, which could contain significant quantities of asbestos, the disturbance of which is determined, based on field observations, to violate or likely to violate Federal, State, or local asbestos regulations; and,
- Material which cannot be readily identified.

5.5.1 Procedures for Encountered Underground Storage Tanks

Closure of USTs at the Site will be in accordance with the requirements of DER-10, Section 5.5. USTs will be visually inspected to determine if liquids are present in the tank. Significant quantities of liquid remaining in the tanks will be drummed on the Site or removed by a properly licensed disposal company and the particular product (e.g., fuel oil, diesel, etc.) will be identified prior to off-site disposal at a permitted facility. All encountered USTs will be disposed of pursuant to applicable Petroleum Bulk Storage (PBS) and hazardous waste regulations. All

petroleum contaminated soils will be managed in conformance with NYSDEC petroleum spill remediation requirements and DER-10.

5.5.2 Procedures for Encountered Demolition Debris

To the extent practical, all clearly identifiable material suspected of containing asbestos will be removed from the waste stream and handled separately (if encountered). The Remedial Engineer/QEP will recommend that asbestos material visible in the waste stream be separated and analyzed to determine the percent of asbestos present. All applicable Federal, State and local asbestos handling regulations will be followed.

Depending on the amount of asbestos material identified in the waste stream, the Remedial Engineer/QEP may recommend to the Volunteer's Representative that a licensed and accredited asbestos inspector be retained to manage the handling and disposition of asbestos material. Approval to retain an asbestos inspector will be made by the Volunteer's Representative. Samples will be collected by a properly licensed asbestos inspector and submitted to a NYSDOH ELAP- certified laboratory for analysis, depending on the amount and type of material encountered.

Minor amounts of asbestos may be removed from the waste stream and disposed of in accordance with applicable State and local asbestos remediation requirements. An asbestos abatement firm will be retained to properly handle and remove minor amounts of asbestos.
The presence of significant quantities of asbestos will result in a temporary shutdown of the Site.

5.5.3 Procedures for Encountered Unknown Material

Material which cannot be readily identified but which is considered, based on field observations, to be material that needs further investigation before disposal will be properly stockpiled (as per the SoMP) in an area separate from all other stockpiled material.

5.5.4 Screening and Laboratory Analysis

Unknown material will be screened with a photo-ionization detector (PID) and all recorded levels will be documented. Samples will be collected and analyzed to identify the compounds present and to assist in determining appropriate disposal practices. Until determined by laboratory analysis otherwise, this material will be considered a hazardous substance. Specific

materials known to require sampling and analysis prior to final disposition include all building components and debris containing painted surfaces and/or caulk. A plan to describe the handling and disposal of such materials will be submitted to NYSDEC for review and approval.

If previously unknown 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 petroleum list parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval.

6.0 RESIDUAL CONTAMINATION TO REMAIN ON-SITE

The chosen remedy in the later RAWP will require Institutional Controls (ICs) if contaminants remain after the interim remedial measure program. ECs and ICs will be defined in the RAWP.

7.0 INSTITUTIONAL CONTROLS

Institutional Controls will be established in the RAWP.

7.1 ENVIRONMENTAL EASEMENT

Requirements for an environmental easement will be established in the RAWP.

8.0 ENGINEERING CONTROLS

Engineering Controls will be established in the RAWP.

9.0 FINAL ENGINEERING REPORT

A Final Engineering Report (FER) will be submitted to NYSDEC following implementation of the Interim Remedial Measure and the Remedial Action defined in the RAWP.

9.1 FER ELEMENTS

The FER provides the documentation that the remedial work required under the IRM and 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, and bills of lading as well as the complete Site Management Plan (formerly the Operation and Maintenance Plan). The FER will provide a description of the changes in the Remedial Action from the elements provided in the 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 interim and final 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 long-term operations, maintenance and monitoring tasks defined in the SMP and 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 Site after the remedy is complete. Residual contamination includes all contamination that exceeds the Track 1

Unrestricted Use SCO in 6NYCRR 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 2 Restricted Residential 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 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).

9.2 SITE MANAGEMENT PLAN

A Site Management Plan will be established in the RAWP.

9.3 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 Peter Jaran, 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, Peter Jaran, 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 105 S. 5th Street/337 Berry Street Site (NYSDEC Site No. C2XXXX).

I certify that the Site description presented in this FER is identical to the Site descriptions presented in the Environmental Easement, the Site Management Plan, and the Brownfield Cleanup Agreement for 105 S. 5th Street/337 Berry Street and related amendments.

I certify that the IRMWP and the Remedial Action Work Plan dated [date and date] 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 IRMWP and 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. A Site Management Plan has been submitted by the Volunteer for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by the NYSDEC.

I certify that the export of all contaminated soil, fill, water or other material from the property was performed in accordance with the IRMWP and 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 IRMWP and 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 IRMWP and 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.

066090	2/11/16	
NYS Professional Engineer #	Date	Signature

10.0 FINAL ENGINEERING REPORT

A Final Engineering Report (FER) will be submitted to NYSDEC following implementation of the remedial action defined in this IRMWP and the RAWP.

The FER will document that the remedial work required under this IRMWP and the RAWP has been completed and has been performed in compliance with this plan. The FER will include:

- Information required by this IRMWP and the RAWP;
- Text description with thorough detail of all engineering and institutional controls As-built drawings for all constructed remedial elements;
- Manifests for al soil or fill disposal;
- Photographic documentation of remedial work performed under this remedy;
- Site Management Plan;
- Description of any changes in the remedial action from the elements provided in this IRMWP and the RAWP and associated design documents;
- Tabular summary of all end point sampling results (including all soil test results from the remedial investigation for soil that will remain on site) and all soil/fill waste characterization results, QA/QC results for end-point sampling, and other sampling and chemical analysis performed as part of the remedial action;
- Test results or other evidence demonstrating that remedial systems are functioning properly;
- Account of the source area locations and characteristics of all soil or fill material removed from the Site including a map showing the location of these excavations and hotspots, tanks or other contaminant source areas;
- Full accounting of the disposal destination of all contaminated material removed from the Site. Documentation associated with disposal of all material will include transportation and disposal records, and letters approving receipt of the material;
- Account of the origin and required chemical quality testing for material imported onto the Site;
- The IRMWP, RAWP and Remedial Investigation Report will be included as appendices to the FER;

- Reports and supporting material will be submitted in digital form and final PDF’s will include bookmarks for each appendix;
- Environmental easement.

11.0 SCHEDULE

The table below presents a schedule for the proposed interim remedial measure and reporting. If the schedule for remediation and development activities changes, it will be updated and submitted to NYSDEC. Currently, a seven month remediation period is anticipated.

Schedule Milestone	**Weeks from Interim Remedial Measure Start**	**Duration (weeks)**
NYSDEC Approval of IRMWP	0	6
Fact Sheet 2 announcing start of IRM	2	1
Mobilization	8	2
Interim Remedial Excavation	10	6
Demobilization	16	2

FIGURES

0 40 80 160 240 320 Feet

1 inch = 208 feet

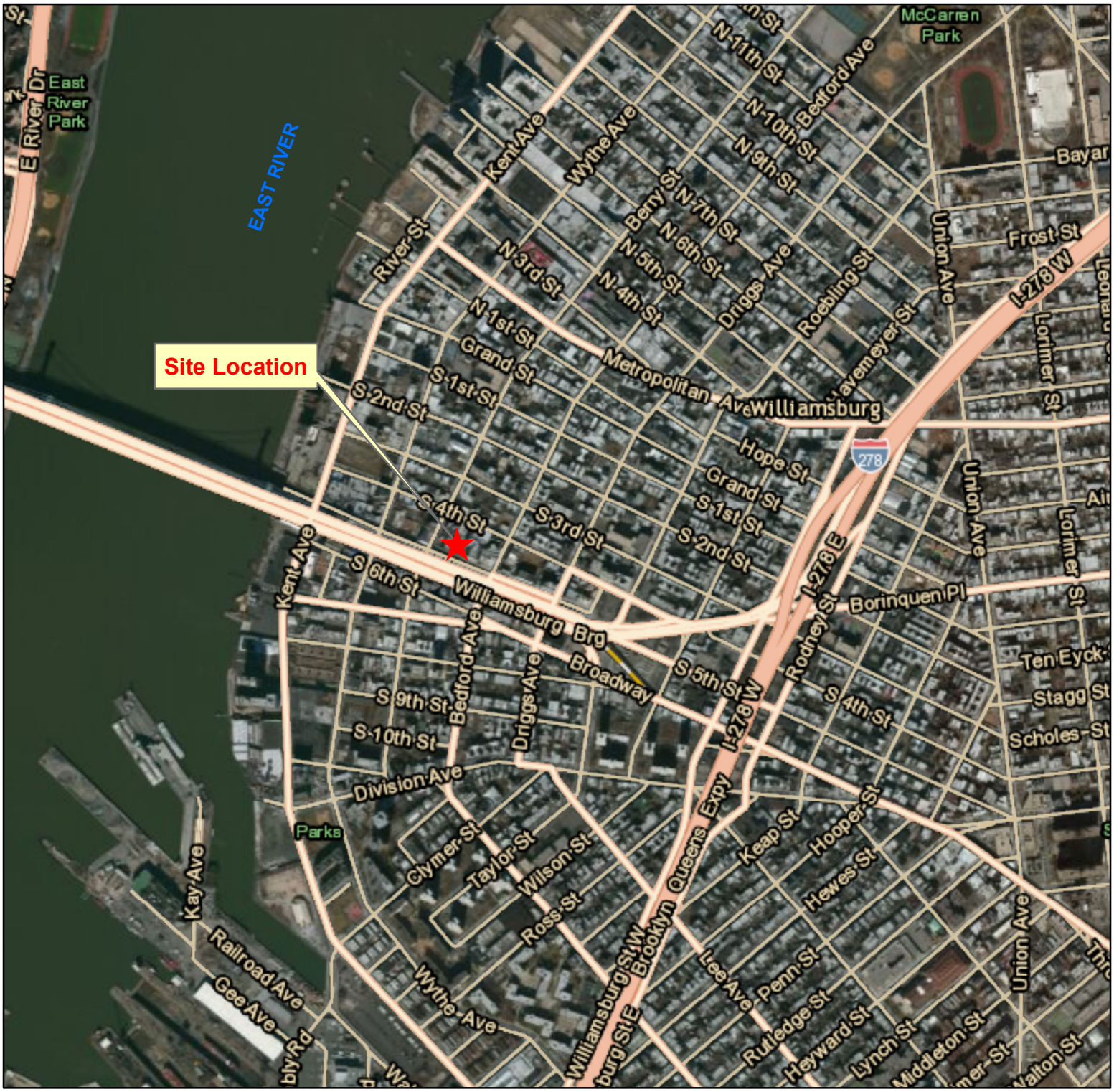
Notes:
Imagery basemap provided by ESRI;
Copyright:© 2011 / USA TOPOMAPS
National Geographic Society

FIGURE 1
SITE MAP

337 Berry St. & 99-105 South 5th St.
(Block 2443 / Lot 6, 37, 41)
Brooklyn, New York

equity environmental engineering
500 International Drive, Suite 150, Mount Olive, NJ 07828
Office: (973) 527-7451 / Fax: (973) 858-0280

DRAWN BY / DATE	CHK / DATE	DRAWING NUMBER
NG / 10-28-15		2015059-02



Notes: Aerial basemap provided by Esri, HERE, DeLorme, TomTom, MapmyIndia, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo;
Copyright:© OpenStreetMap contributors, and the GIS user community

N

0 350 700 1,400 2,100 2,800 Feet

1 inch = 1,250 feet

FIGURE 2
SITE LOCATION MAP

337 Berry St. & 99-105 South 5th St.
(Block 2443 / Lots 6, 37, 41)
Brooklyn, New York

equity environmental engineering
227 Route 206, Suite 6, Flanders, NJ 07836, (973) 527-7451

DRAWN BY/ DATE	CHK/DATE	DRAWING NUMBER
NG / 04-14-15		2014074-01

RAMSAY LAND SURVEYING, P.C.

PROFESSIONAL LAND SURVEYOR-PLANNER

3024 RADCLIFF AVENUE
BRONX, NEW YORK 10469
FAX (718) 231-2067
PH. (646) 773-4588

NOTE: I

1). PREMISES SHOWN HEREON IS DESINATED ZONE "X" AND IS NOT LOCATED IN AN AREA OF MINIMAL FLOOD HAZARD AREA AS PER (FIRM) -FLOOD INSURANCE RATE MAP NUMBER 3604970204F, COMMUNITY PANEL DATED SEPTEMBER 05, 2007.
2). AREA OF LOT No.06, BLOCK No.2443 .AREA= 15,941.13 SQ. FT.
3). PARKING SPACES : 0

NOTE II:

THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE CURRENT "CODE OF PRACTICE" OF THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS (N.Y.S.A.P.L.S.) ALL CERTIFICATIONS HEREON SHALL RUN ONLY TO PERSONS, NAMED HEREON, FOR WHOM THIS SURVEY WAS PREPARED. AND, ON THEIR BEHALF TO ANY, TITLE COMPANY, GOVERNMENT AGENCY OR LENDING INSTITUTION NAMED HEREON. SAID CERTIFICATIONS ARE NOT TRANSFEREABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
ANY ALTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PER SECTION 7209 SUB-SECTION 2.
ALL CERTIFICATIONS HEREON ARE VALID FOR THIS MAP AND COPIES THEREOF ONLY IF SAID MAP OR COPIES BEAR THE IMPRESSED SEAL OF THE SURVEYOR WHOSE SIGNATURE APPEARS HEREON

LEGAL DESCRIPTION

Tax Block 2443 Tax Lot No. 06

ALL THAT CERTAIN PLOT,PIECE OR PARCEL OF LAND, WITH THE BUILDINGS AND IMPROVEMENTS THEREON ERECTED, SITUATE, LYING AND BEING IN THE BOROUGH OF BROOKLYN, COUNTY OF KINGS, CITY AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE EASTERLY SIDE OF BERRY STREET DISTANT 90.00 FEET SOUTHERLY FROM THECORNER FORMED BY THE INTERSECTION OF THE EASTERLY SIDE OF BERRY STREET WITH THE SOUTHERLY SIDE OF SOUTH 4TH. STREET;

RUNNING THENCE EASTERLY AT 90° TO THE EASTERLY SIDE OF BERRY STREET AND PARALLEL TO THE SOUTHERLY SIDE OF SOUTH 4TH. STREET, 18.67 FEET;

THENCE SOUTHWESTERLY FORMING AN INTERIOR ANGLE OF 97°35'54" WITH THE LAST MENTIONED COURSE 10.09 FEET (SURVEY), 10.15 FEET (TAX MAP);

THENCE SOUTHEASTERLY FORMING AN INTERIOR ANGLE OF 262°24'06" WITH THE LAST MENTIONED COURSE AND PARALLEL WITH THE SOUTHERLY SIDE OF SOUTH 4TH. STREET,141.00 FEET;

THENCE SOUTHWESTERLY FORMING AN INTERIOR ANGLE OF 90° WITH THE LAST MENTIONED COURSE AND PARALLEL TO THE EASTERLY SIDE OF BERRY STREET 44.00 FEET;

THENCE SOUTHEASTERLY FORMING AN INTERIOR ANGLE OF 270°00'00" WITH THE LAST MENTIONED COURSE AND PARALLEL WITH THE SOUTHERLY SIDE OF SOUTH 4TH. STREET, 42.50 FEET;

THENCE SOUTHWESTERLY FORMING AN INTERIOR ANGLE OF 90° WITH THE LAST MENTIONED COURSE AND PARALLEL TO THE EASTERLY SIDE OF BERRY STREET 77.89 FEET (SURVEY), 77.73 (TAX MAP) TO THE NORTHERLY SIDE OF SOUTH 5TH. STREET AS WIDENED;

THENCE NORTHWESTERLY FORMING AN INTERIOR ANGLE OF 93°57'02" WITH THE LAST MENTIONED COURSE AND ALONG THE NORTHERLY SIDE OF SAID SOUTH 5TH. STREET 125.22 FEET;

THENCE NORTHEASTERLY FORMING AN INTERIOR ANGLE OF 85°58'55" (COMPUTED) 46.88 FEET (SURVEY), 46.87 FEET (TAX MAP);

THENCE SOUTHEASTERLY FORMING AN INTERIOR ANGLE OF 91°20'00" WITH THE LAST MENTIONED COURSE 25.00 FEET;

THENCE NORTHEASTERLY FORMING AN INTERIOR ANGLE OF 268°40'04" 46.25 FEET (SURVEY), 45.25 FEET (TAX MAP);

THENCE NORTHWESTERLY FORMING AN INTERIOR ANGLE OF 271°23'59" WITH THE LAST MENTIONED COURSE 103.71 FEET (SURVEY), 103.67 (TAX MAP) TO THE EASTERLY SIDE OF BERRY STREET;

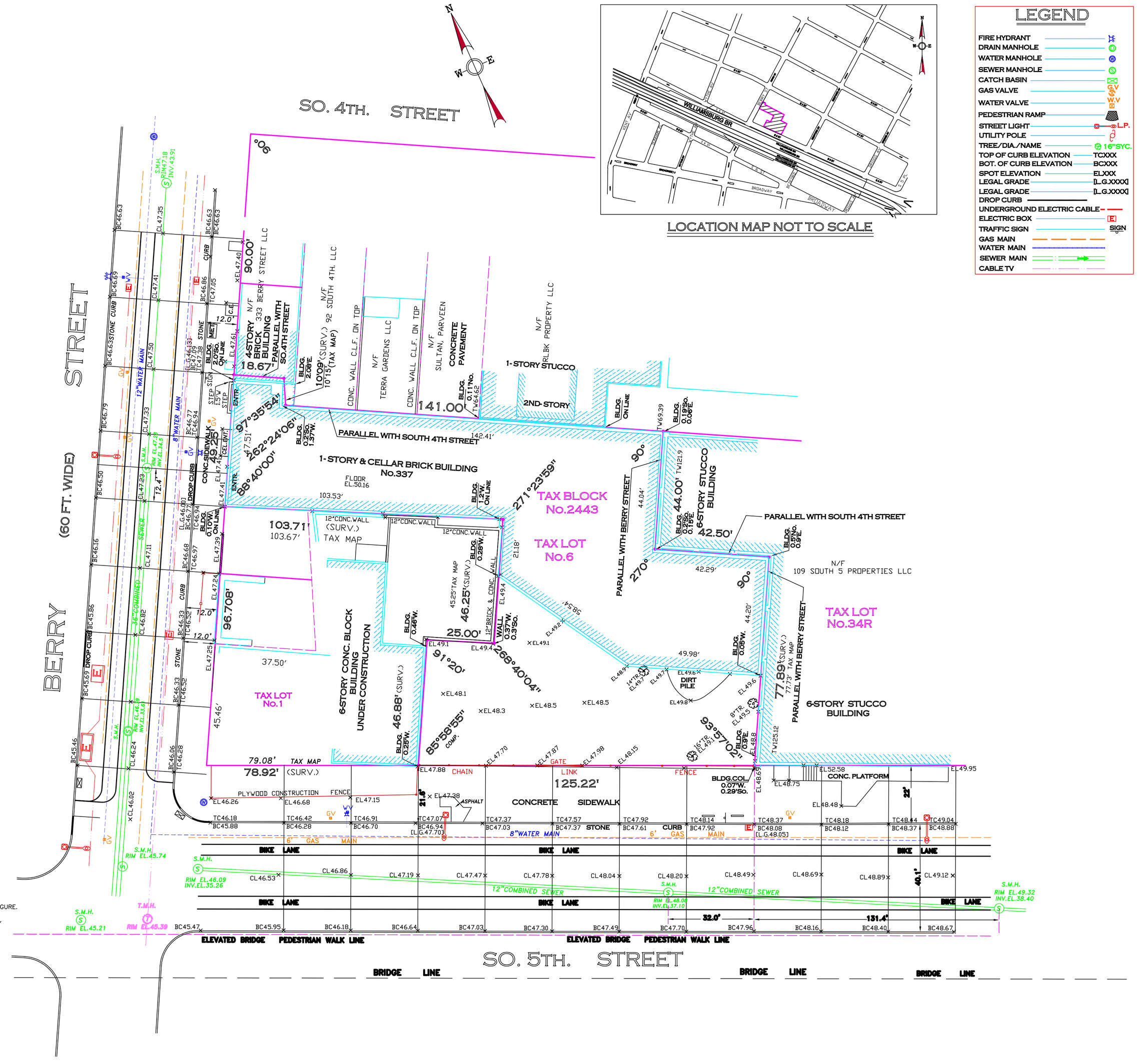
THENCE NORTHEASTERLY ALONG THE EASTERLY SIDE OF BERRY STREET FORMING AN INTERIOR ANGLE OF 88°40'00" WITH THE LAST MENTIONED COURSE 49.25 FEET TO THE POINT OR PLACE OF BEGINNING.

NOTE III:

1. The information depicted on this map represents the results of surveys made on the dates indicated and can only be considered as indicating the general conditions existing at the time.
2. All elevations refer to NAVD– 1988 ADJUSTMENT
3. TC38.53 Denotes Top Of Curb elevations in feet.
3a. 23.16 Denotes spot elevations in feet.
3b. (BC123.5) Denotes Bottom of Curb elevations in feet.
4. Field data collected using conventional survey methods.
5. Equipment used: Topcon GPT 3000 Total Station .
6. This is to certify that there are no visible streams or natural water courses across the property as shown on this survey.
7. The Underground Utility Information Shown Hereon Is One Of Several Possible Interpretations Of The Record Data As Provided By The Respective Utility Companies. The Location And Depth Of All Underground Utilities Must Be Verified With The Respective Utility Company Prior To Any Design And Construction Or Excavation.
8. There is no observable evidence of cemeteries on subject property.
9. SUBJECT PROPERTY: a). TAX LOT No.06 IN BLOCK No.2443 IS LOCATED IN M1–2/R6 ZONE ON ZONING MAP No.
10. THERE ARE NO VISIBLE EASEMENTS OR RIGHT OF WAY OF WHICH THE UNDERSIGN HAS BEEN ADVISED.
11. THERE ARE OBSERVABLE, ABOVE GROUND ENCROACHMENTS (a) BY THE IMPROVEMENT ON THE SUBJECT PROPERTY UPON ADJOINING PROPERTIES, STREETS OR ALLEYS, OR (b) BY THE IMPROVEMENT ON THE ADJOINING PROPERTIES, STREETS OR ALLEYS, UPON THE SUBJECT POPERTY.
12. THE SUBJECT PROPERTY HAS ACCESS TO AND FROM A DULY DEDICATED AND ACCEPTED PUBLIC , STREET OR HIGHWAY.
13. THE SUBJECT PROPERTY DOES NOT SERVE ANY ADJOINING PROPERTY FOR DRAINAGE, UTILITY OR INGRESS OR EGRESS.
14. THE RECORD DESCRIPTION OF THE SUBJECT PROPERTY DOES NOT FORM A MATHEMATICALLY CLOSED FIGURE.
15. THERE ARE NO OBSERVED EVIDENCE OR RECORD OF ANY PARTY WALL ADJACENT TO SUBJECT PROPERTY
16. THERE ARE NO OBSERVED EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
17. THERE IS NO PROPOSED CHANGES IN THE RIGHT OF WAY LINES. ADJACENT TO OR AFFECTING SUBJECT PROPERTY.
18. THERE IS NO EVIDENCE OF SUBJECT PROPERTY USED AS SOLID WASTE DUMP, SUMP OR LANDFILL
19. THERE IS NO EVIDENCE OF WATERCOURSE OR WETLANDS ON OR ACROSS SUBJECT PROPERTY
20. THERE IS NO IMPROVEMENTS WITHIN ANY OFFSITE EASEMENTS OR SERVITUDES BENEFITING THE SURVEYED PROPERTY THAT AE DISCLOSED IN ANY RECORD DOCUMENTS PROVIDED TO US.

20(A). NOT APPLICABLE

JOB No.F15-174_ALT_BLY_06



LOCATION MAP NOT TO SCALE

LEGEND

- FIRE HYDRANT
- DRAIN MANHOLE
- WATER MANHOLE
- SEWER MANHOLE
- CATCH BASIN
- GAS VALVE
- WATER VALVE
- PEDESTRIAN RAMP
- STREET LIGHT — L.P.
- UTILITY POLE — T.P.
- TREE/DIA./NAME — 16"SYC.
- TOP OF CURB ELEVATION — TCXXX
- BOT. OF CURB ELEVATION — BCXXX
- SPOT ELEVATION — ELXXX
- LEGAL GRADE — [L.G.XXXX]
- LEGAL GRADE — [L.G.XXXX]
- DROP CURB
- UNDERGROUND ELECTRIC CABLE
- ELECTRIC BOX — E
- TRAFFIC SIGN — SIGN
- GAS MAIN
- WATER MAIN
- SEWER MAIN
- CABLE TV

TITLE No.BTA72379

ALTA / ACSM

Land Title Survey

OF

PROPERTY DESIGNATED AS
LOT No. 06 IN BLOCK No.2443
ON THE OFFICIAL TAX MAP
OF THE BOROUGH OF BROOKLYN
KINGS COUNTY, NEW YORK.
ALSO KNOWN AS
337 BERRY STREET AND
99-101 SOUTH 5TH. STREET
SITUATE IN THE
BOROUGH OF BROOKLYN
CITY AND
STATE OF NEW YORK.

SURVEYORS CERTIFICATE

I HEREBY CERTIFY TO WILLIAMSBURG BRIDGEVIEW APARTMENTS HOUSING DEVELOPMENT FUND CORP., LPC DEVELOPMENT GROUP LLC, HUDSON HOUSING CAPITAL LLC, THE CITY OF NEW YORK, CAPITAL ONE NATIONAL ASSOCIATION, BENCHMARK TITLE AGENCY, LLC, AND STEWART TITLE INSURANCE COMPANY AND TO THEIR SUCCESSORS AND OR ASSIGNS, THAT:

" I MADE AN ON THE GROUND SURVEY PER RECORD DESCRIPTION OF THE LAND SHOWN HEREON LOCATED IN THE BOROUGH OF THE BRONX, CITY AND STATE OF NEW YORK ON NOVEMBER 22, 2015; AND THAT IT AND THIS MAP WAS MADE IN ACCORDANCE WITH THE HUD SURVEY INSTRUCTIONS AND REPORT, HUD 92457M, AND THE REQUIREMENTS FOR AN ALTA/ACSM LAND TITLE SURVEY, AS DEFINED IN THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS.

TO THE BEST OF MY KNOWLEDGE, BELIEF AND INFORMATION, EXCEPT AS SHOWN HEREON: THERE ARE NO ENCROACHMENTS EITHER WAY ACROSS PROPERTY LINES; TITLE LINES AND LINES OF ACTUAL POSSESSION ARE THE SAME; AND THE PREMISES ARE FREE OF ANY 100/500 YEAR RETURN FREQUENCY FLOOD HAZARD, AND SUCH FLOOD FREE CONDITIONS IS SHOWN ON THE FEDERAL FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO.3604970204F."

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEM 2,3,4,5,6A,6B,7A,7B-1,8,9,10,10B,11A,11B,12,13 & 14-20 OF TABLE A

DESIGNATED AS LOT No.06 BLOCK No.2443
AS SHOWN ON THE OFFICIAL TAX MAP OF
THE BOROUGH OF BROOKLYN, KINGS COUNTY, CITY AND STATE OF NEW YORK.

THE FIELD WORK WAS COMPLETED ON NOVEMBER 22, 2015
DATE MAP DRAFTED : DECEMBER 01, 2015

GRAPHIC SCALE

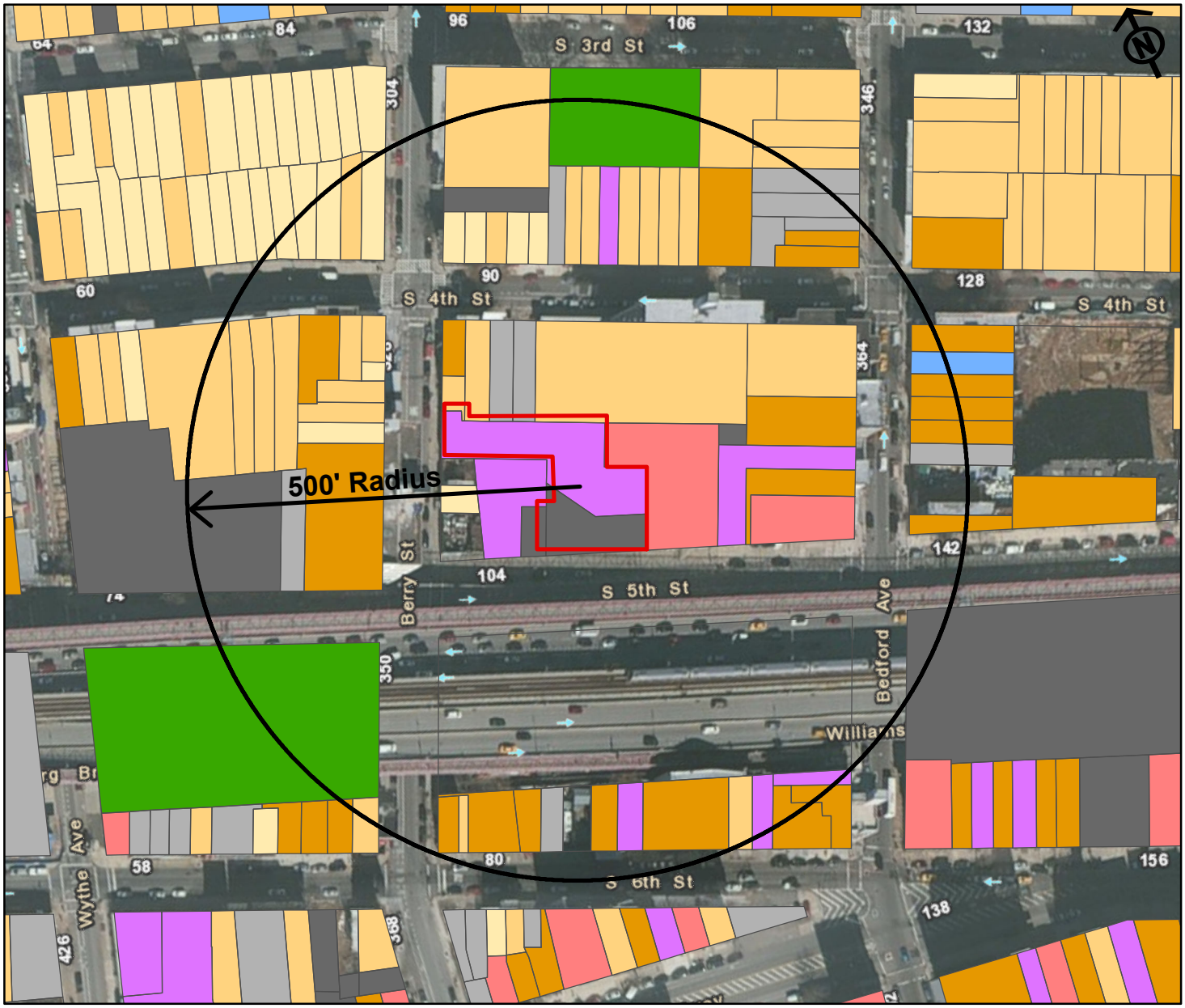
20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

SIGNATURE: _____

NAME : NEVILLE V. RAMSAY LIC. No. 050294-1

REGISTRATION No: 050294-1 DATE: DECEMBER 01, 2015



Notes:
Imagery basemap provided by ESRI;
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National Geographic Society

0 37.5 75 150 225 300 Feet

1 inch = 204 feet

Legend

- Property Boundary
- Vacant Land
- Parking
- Public Facility / Institution
- Industrial / Manufacturing
- Commercial / Office
- Mixed Residential & Commercial
- Multi-Family Residential
- One & Two Family Residential
- Parks & Recreation

FIGURE 4
LAND USE MAP

337 Berry St. & 99-105 South 5th St.
(Block 2443 / Lot 6, 37, 41)
Brooklyn, New York

equity environmental engineering
500 International Drive, Suite 150, Mount Olive, NJ 07828
Office: (973) 527-7451 / Fax: (973) 858-0280

DRAWN BY / DATE	CHK / DATE	DRAWING NUMBER
NG / 10-28-15		2015059-03

FIGURE 5A
SITE REDEVELOPMENT PLANS

337 Berry St. & 99-105 South 5th St.
(Block 2443 / Lots 6, 37, 41)
Brooklyn, New York

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500 International Drive, Suite 150, Mt. Olive, NJ 07828
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FU / 02-10-2015		2015059-05

FIGURE 5B
SITE REDEVELOPMENT PLAN

337 Berry St. & 99-105 South 5th St.
(Block 2443 / Lots 6, 37, 41)
Brooklyn, New York

equity environmental engineering
500 International Drive, Suite 150, Mt. Olive, NJ 07828
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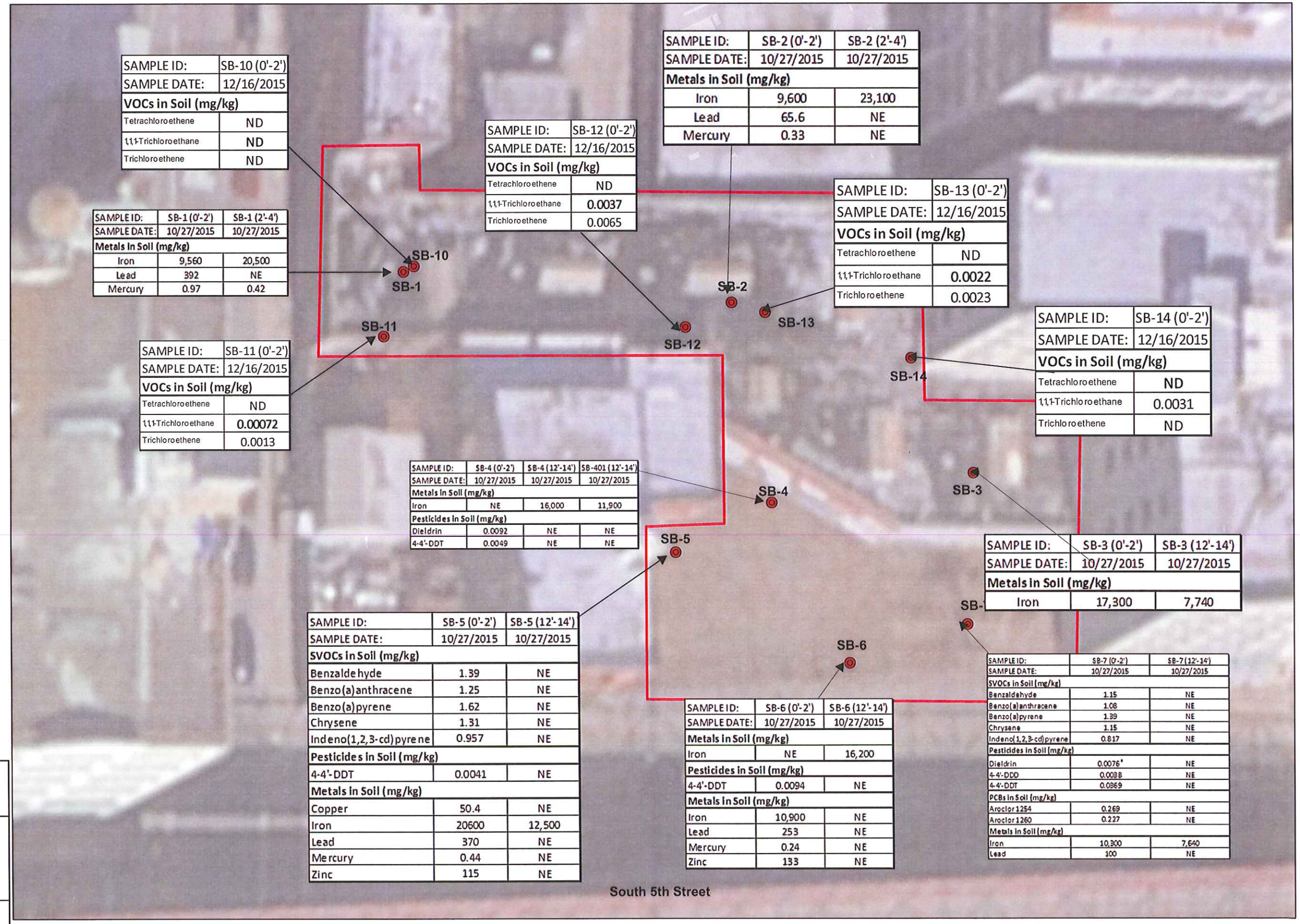
DRAWN BY/ DATE	CHK/DATE	DRAWING NUMBER
FU / 02-10-2015		2015059-05



SAMPLE ID:	SB-10 (0'-2')
SAMPLE DATE:	12/16/2015
VOCs in Soil (mg/kg)	
Tetrachloroethene	ND
1,1,1-Trichloroethane	ND
Trichloroethene	ND

SAMPLE ID:	SB-1 (0'-2')	SB-1 (2'-4')
SAMPLE DATE:	10/27/2015	10/27/2015
Metals in Soil (mg/kg)		
Iron	9,560	20,500
Lead	392	NE
Mercury	0.97	0.42

SAMPLE ID:	SB-11 (0'-2')
SAMPLE DATE:	12/16/2015
VOCs in Soil (mg/kg)	
Tetrachloroethene	ND
1,1,1-Trichloroethane	0.00072
Trichloroethene	0.0013

SAMPLE ID:	SB-12 (0'-2')
SAMPLE DATE:	12/16/2015
VOCs in Soil (mg/kg)	
Tetrachloroethene	ND
1,1,1-Trichloroethane	0.0037
Trichloroethene	0.0065

SAMPLE ID:	SB-2 (0'-2')	SB-2 (2'-4')
SAMPLE DATE:	10/27/2015	10/27/2015
Metals in Soil (mg/kg)		
Iron	9,600	23,100
Lead	65.6	NE
Mercury	0.33	NE

SAMPLE ID:	SB-13 (0'-2')
SAMPLE DATE:	12/16/2015
VOCs in Soil (mg/kg)	
Tetrachloroethene	ND
1,1,1-Trichloroethane	0.0022
Trichloroethene	0.0023

SAMPLE ID:	SB-14 (0'-2')
SAMPLE DATE:	12/16/2015
VOCs in Soil (mg/kg)	
Tetrachloroethene	ND
1,1,1-Trichloroethane	0.0031
Trichloroethene	ND

SAMPLE ID:	SB-4 (0'-2')	SB-4 (12'-14')	SB-401 (12'-14')
SAMPLE DATE:	10/27/2015	10/27/2015	10/27/2015
Metals in Soil (mg/kg)			
Iron	NE	16,000	11,900
Pesticides in Soil (mg/kg)			
Dieldrin	0.0092	NE	NE
4-4'-DDT	0.0049	NE	NE

SAMPLE ID:	SB-3 (0'-2')	SB-3 (12'-14')
SAMPLE DATE:	10/27/2015	10/27/2015
Metals in Soil (mg/kg)		
Iron	17,300	7,740

SAMPLE ID:	SB-5 (0'-2')	SB-5 (12'-14')
SAMPLE DATE:	10/27/2015	10/27/2015
SVOCs in Soil (mg/kg)		
Benzaldehyde	1.39	NE
Benzo(a)anthracene	1.25	NE
Benzo(a)pyrene	1.62	NE
Chrysene	1.31	NE
Indeno(1,2,3-cd)pyrene	0.957	NE
Pesticides in Soil (mg/kg)		
4-4'-DDT	0.0041	NE
Metals in Soil (mg/kg)		
Copper	50.4	NE
Iron	20600	12,500
Lead	370	NE
Mercury	0.44	NE
Zinc	115	NE

SAMPLE ID:	SB-6 (0'-2')	SB-6 (12'-14')
SAMPLE DATE:	10/27/2015	10/27/2015
Metals in Soil (mg/kg)		
Iron	NE	16,200
Pesticides in Soil (mg/kg)		
4-4'-DDT	0.0094	NE
Metals in Soil (mg/kg)		
Iron	10,900	NE
Lead	253	NE
Mercury	0.24	NE
Zinc	133	NE

SAMPLE ID:	SB-7 (0'-2')	SB-7 (12'-14')
SAMPLE DATE:	10/27/2015	10/27/2015
SVOCs in Soil (mg/kg)		
Benzaldehyde	1.15	NE
Benzo(a)anthracene	1.08	NE
Benzo(a)pyrene	1.39	NE
Chrysene	1.15	NE
Indeno(1,2,3-cd)pyrene	0.817	NE
Pesticides in Soil (mg/kg)		
Dieldrin	0.0076*	NE
4-4'-DDD	0.0038	NE
4-4'-DDT	0.0869	NE
PCBs in Soil (mg/kg)		
Aroclor 1254	0.269	NE
Aroclor 1260	0.227	NE
Metals in Soil (mg/kg)		
Iron	10,300	7,640
Lead	100	NE

Legend

- Installed Soil Boring (SB)
- Property Boundary

0 10 20 40 60 80 Feet

1 inch = 33 feet

Notes:
Imagery basemap provided by ESRI; Copyright © 2011 / USA TOPOMAPS; National Geographic Society

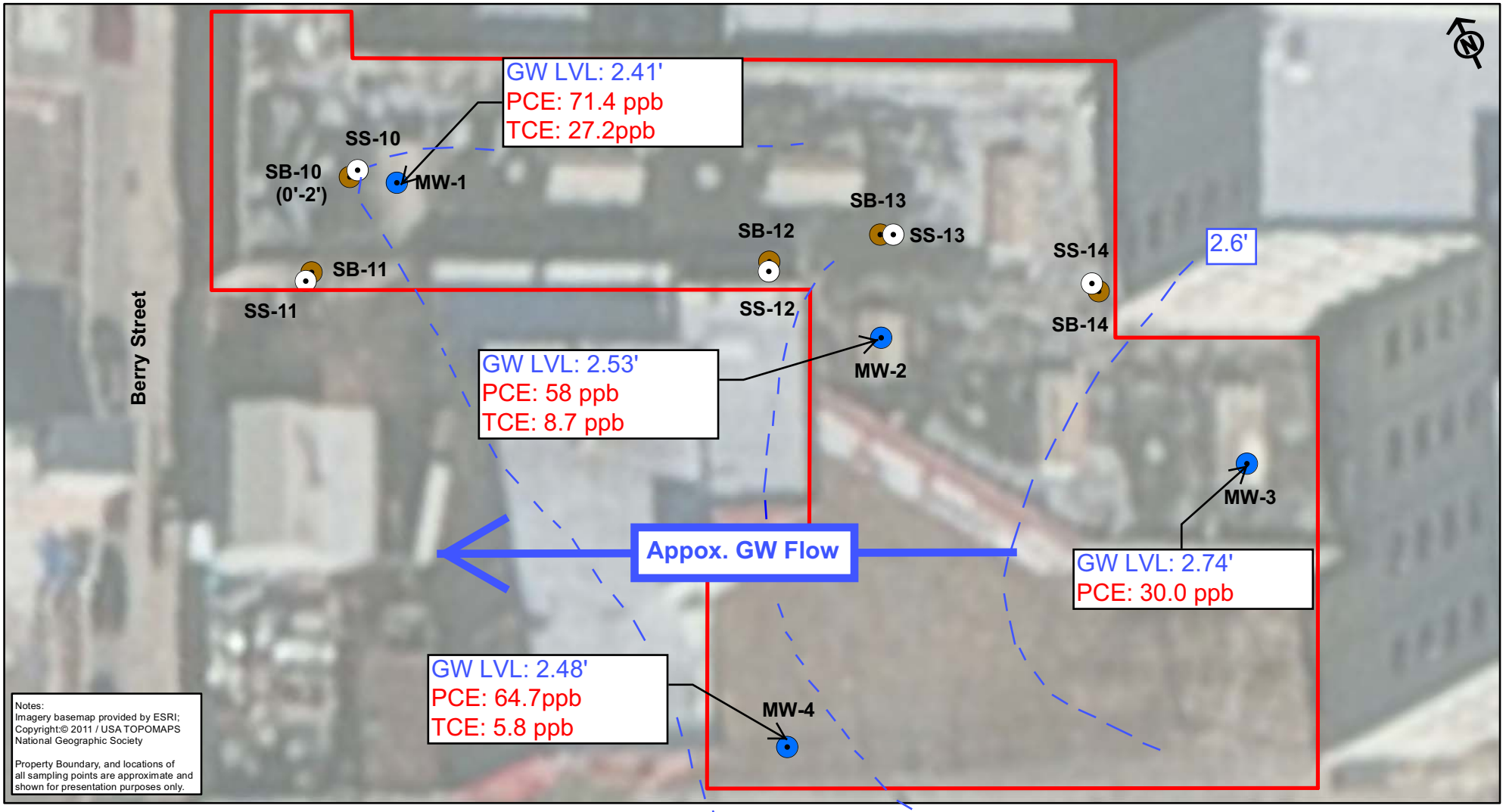
Property Boundary, and locations of all sampling points are approximate and shown for presentation purposes only.

FIGURE 6
EXCEEDANCES OF SOIL

337 Berry St. & 99-105 South 5th St.
(Block 2443 / Lot 6, 37, 41)
Brooklyn, New York

equity environmental engineering
500 International Drive, Suite 150, Mount Olive, NJ 07828
Office: (973) 527-7451 / Fax: (973) 858-0280

DRAWN BY / DATE	REV / DATE	DRAWING NUMBER
NG / 11-20-15		2015059-06



Legend

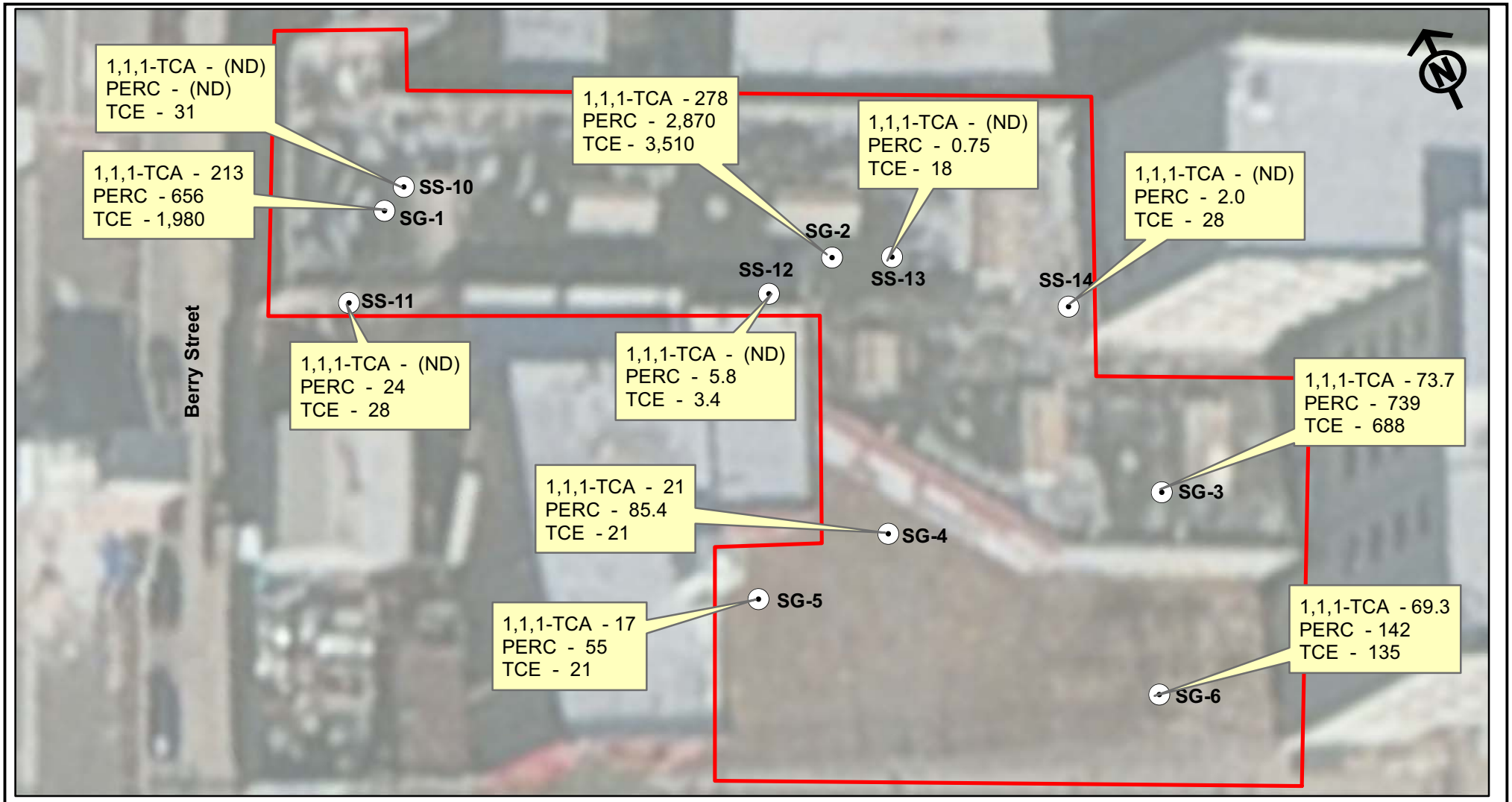
- Property Boundary
- Soil Vapor Sample Point (SS)
- Soil Boring
- Groundwater Monitoring Well

FIGURE 7
EXCEEDANCES OF GROUNDWATER

337 Berry St. & 99-105 South 5th St.
(Block 2443 / Lot 6, 37, 41)
Brooklyn, New York

equity environmental engineering
500 International Drive, Suite 150, Mount Olive, NJ 07828
Office: (973) 527-7451 / Fax: (973) 858-0280

DRAWN BY / DATE	REV / DATE	DRAWING NUMBER
NG / 10-28-15		2015059-04



Notes:
Imagery basemap provided by ESRI; Copyright:© 2011 / USA TOPOMAPS National Geographic Society

Property Boundary, and locations of all sampling points are approximate and shown for presentation purposes only.

All units of soil vapor chemistry results are ug/m^3.

Legend

- Property Boundary
- Soil Vapor Sample Results (ug/m^3)

TCA - Trichloroethane
PERC - Tetrachloroethylene
TCE - Trichloroethylene

FIGURE 8
EXCEEDANCES OF SOIL VAPOR

337 Berry St. & 99-105 South 5th St.
(Block 2443 / Lot 6, 37, 41)
Brooklyn, New York

equity environmental engineering
500 International Drive, Suite 150, Mount Olive, NJ 07828
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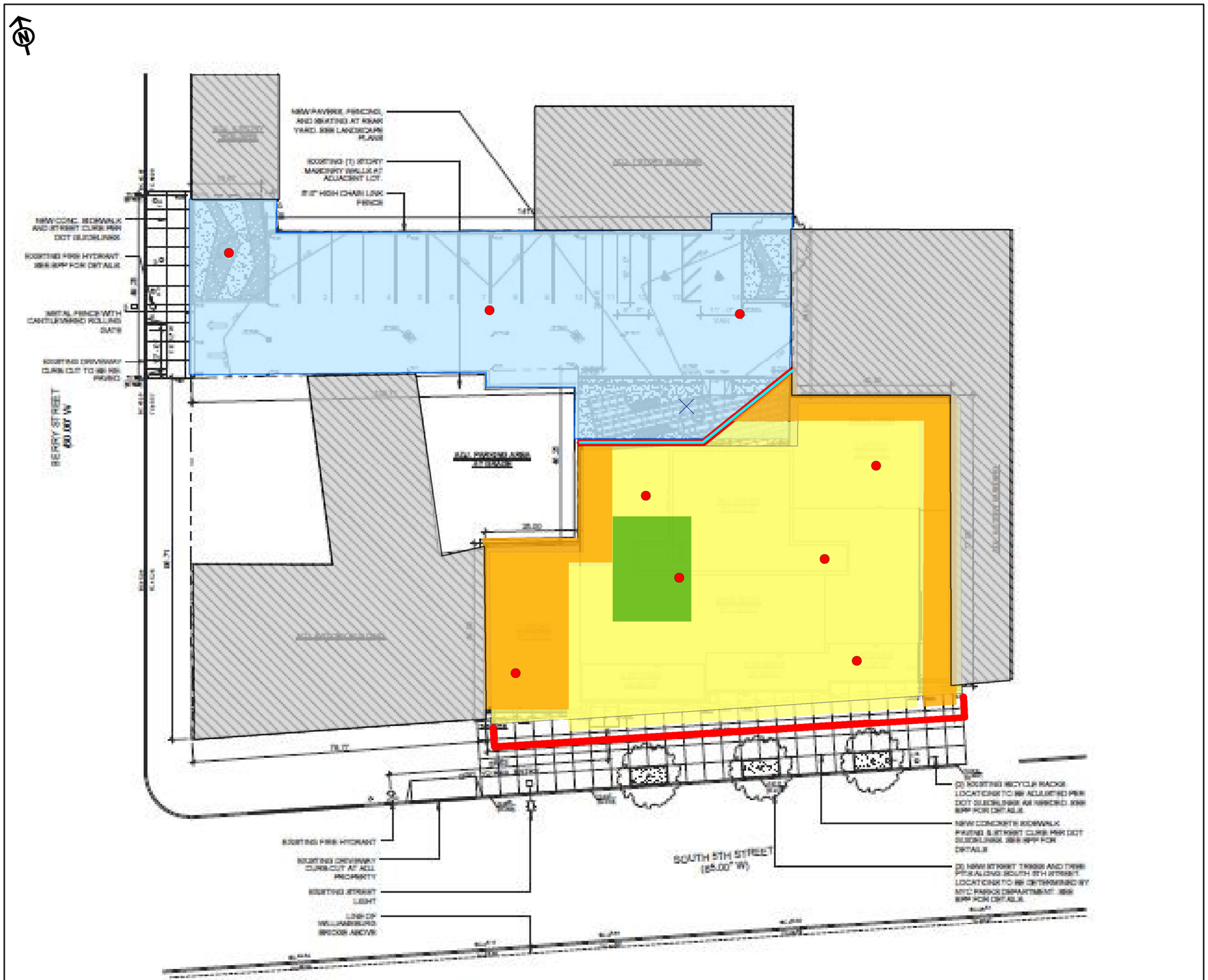
DRAWN BY / DATE	REV / DATE	DRAWING NUMBER
NG / 01-06-16		2015059



Legend

- End-Point Sampling Locations
- Adjoining Buildings
- Outer Excavation Area
- Elevator Pit Excavation Area (17')
- Lined Sheeting
- Inner Excavation Area (13')
- Parking Lot

Notes: Drawing is not drawn to scale as basemap used was copied from DattnerArchitects Site Plan A-001.00 drawing.

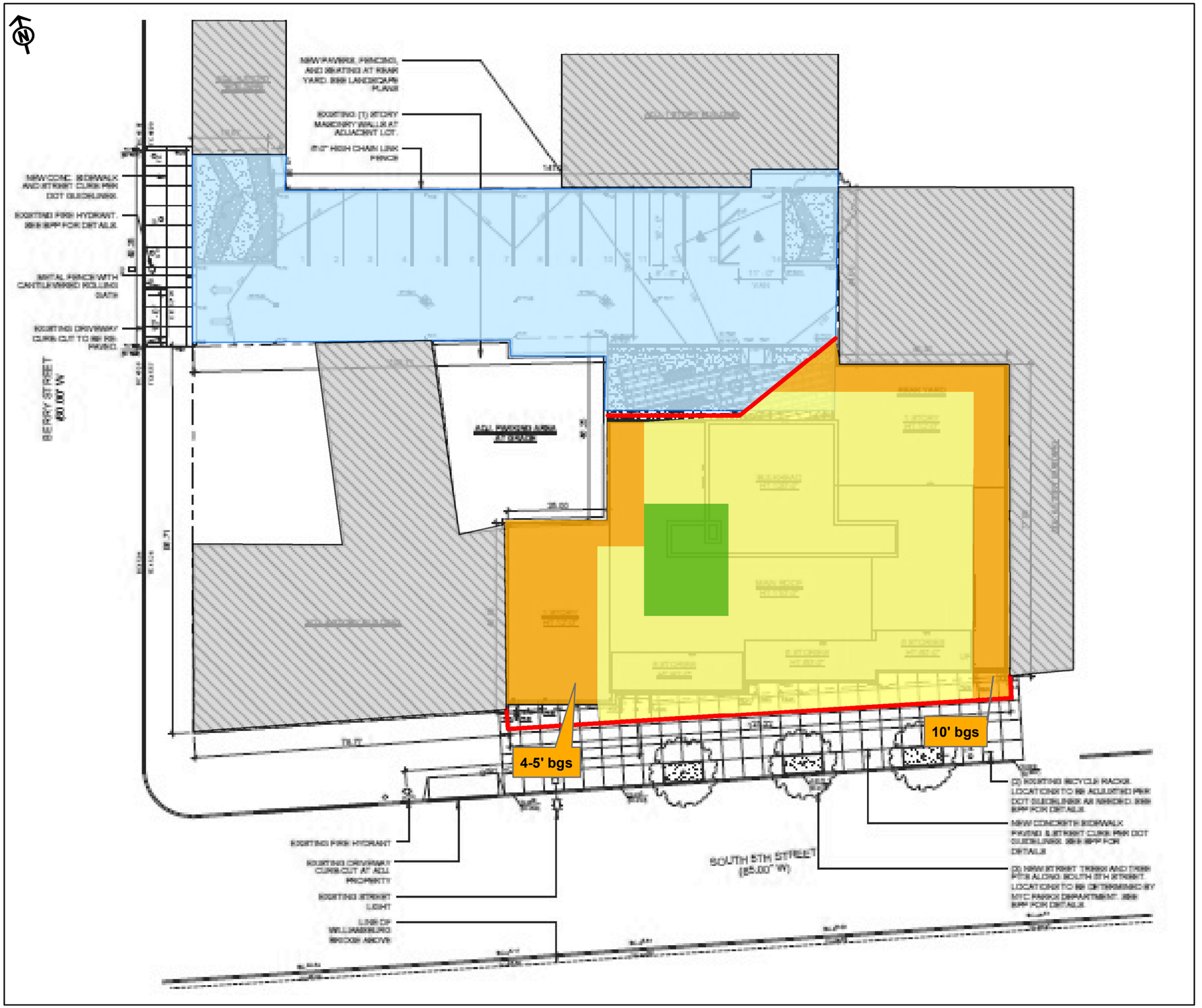
SSDS: Subsurface Depressurization System

FIGURE 9
END-POINT SAMPLE LOCATION MAP

337 Berry St. & 99-105 South 5th St.
(Block 2443 / Lot 6, 37, 41)
Brooklyn, New York

equity environmental engineering
500 International Drive, Suite 150; Mount Olive, NJ 07828
Phone: 973-527-7451 Fax: 973-858-0280

DRAWN BY/ DATE	CHECK BY/DATE	DRAWING NUMBER
FU / 02-10-2016		2015059-09



Legend

- Adjoining Buildings
- Lined Sheeting
- Outer Excavation Area
- Elevator Pit Excavation Area (17')
- Inner Excavation Area (13')
- Parking Lot (1')

Notes: Numbers in parentheses above represent depth of excavation below ground surface (bgs).

Drawing is not drawn to scale as basemap used was copied from DattnerArchitects Site Plan A-001.00 drawing.

FIGURE 10
SITE EXCAVATION PLAN

337 Berry St. & 99-105 South 5th St.
(Block 2443 / Lot 6, 37, 41)
Brooklyn, New York

equity environmental engineering
500 International Drive, Suite 150; Mount Olive, NJ 07828
Phone: 973-527-7451 Fax: 973-858-0280

DRAWN BY/ DATE	CHECK BY/DATE	DRAWING NUMBERF
FU / 02-16-16		2015059-06

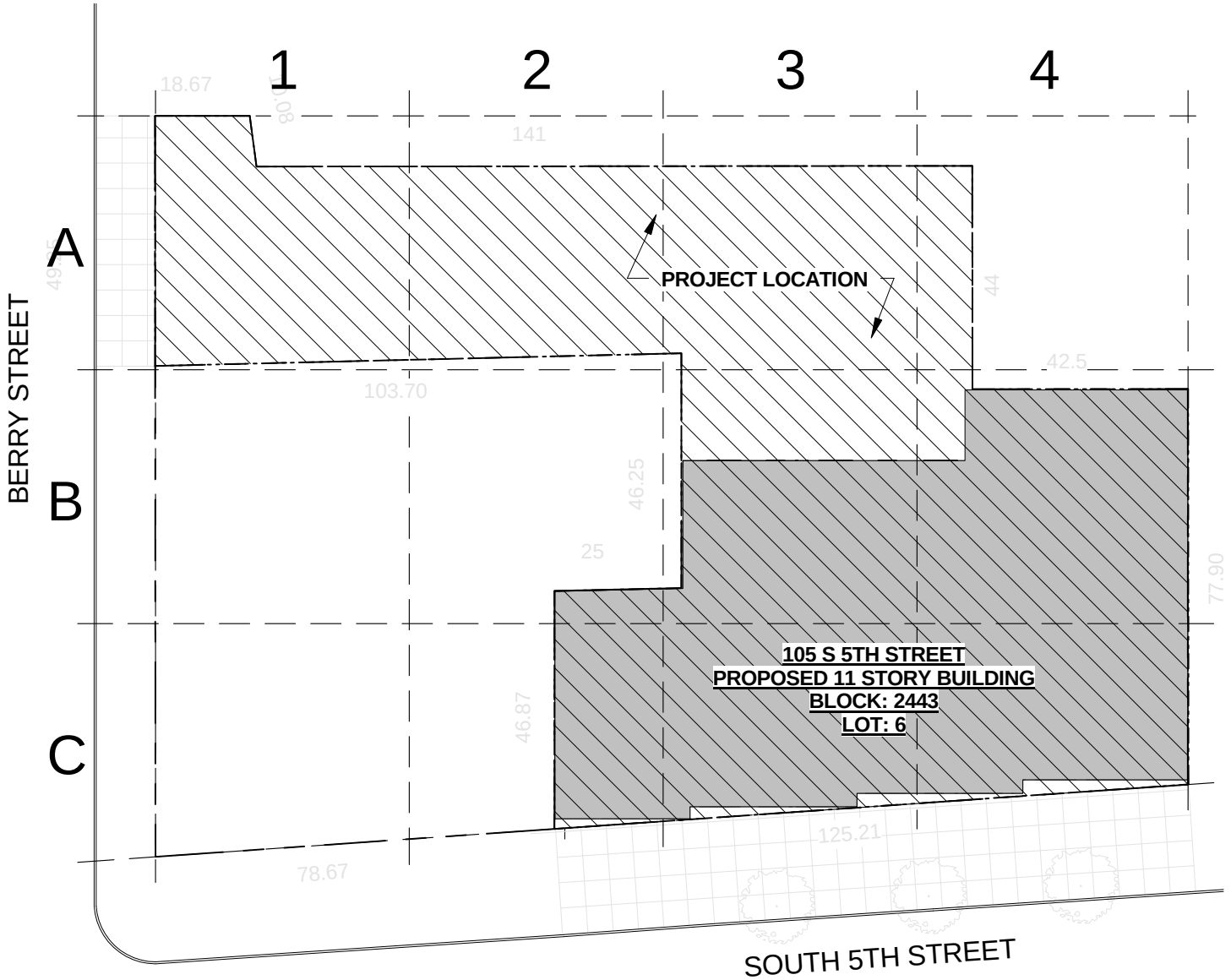
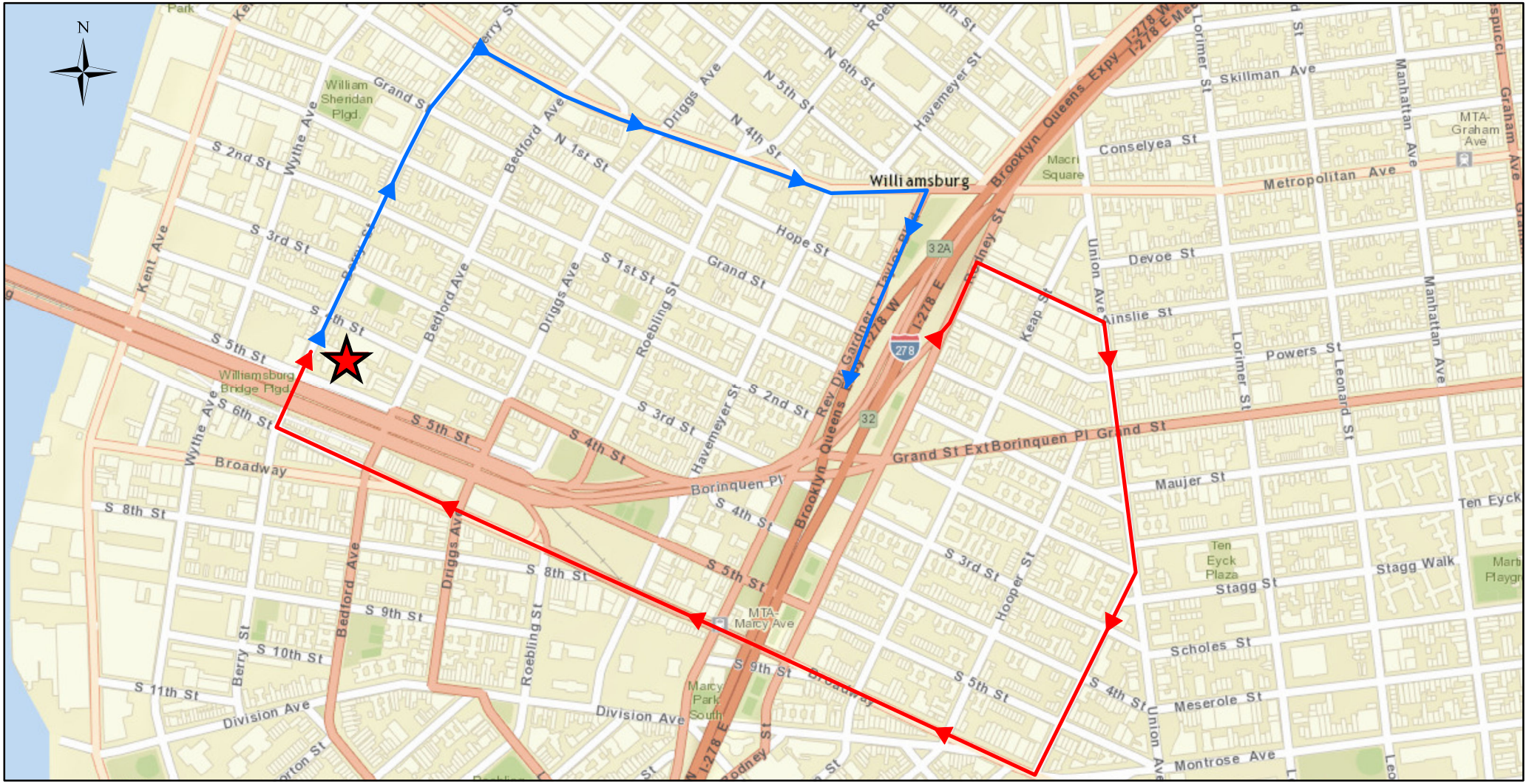


Figure 11

Alpha-Numeric Grid Map

337 Berry St & 95-105 South 5th St.
(Block 2443/Lot 6)
Brooklyn, New York

DRAWN BY / DATE	CHK / DATE	DRAWING NUMBER



Notes: Aerial basemap provided by Esri, HERE, DeLorme, TomTom, MapmyIndia, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo;

0 245 490 980 1,470 1,960 Feet

1 inch = 880 feet

Legend

- Site Location
- Truck Route to Site
- Truck Route Off-Site

FIGURE 12
TRUCK ROUTES

337 Berry St. & 99-105 South 5th St.
(Block 2443 / Lots 6, 37, 41)
Brooklyn, New York

equity environmental engineering
500 International Drive, Suite 150, Mt. Olive, NJ 07828
Office (973) 527-7451 / Fax (973) 858-0280

DRAWN BY/ DATE	CHK/DATE	DRAWING NUMBER
FU / 02-10-2015		2015059-05

TABLES

Table 1
VOCs in Soil

Client Sample ID:		NY SCO - Unrestricted Use (6 NYCRR 375-6 12/06)	NY SCO - Residential w/CP-51 (10/10) (6 NYCRR 375-6 12/06)	NY SCO - Restricted Residential w/CP-51 (10/10) (6 NYCRR 375-6 12/06)	FB-1	SB-1 (0'-2')	SB-1 (2'-4')	SB-2 (0'-2')	SB-2 (2'-4')	SB-3 (0'-2')	SB-3 (12'-14')	SB-4 (0'-2')	SB-4 (12'-14')	SB-401 (12'-14')	SB-5 (0'-2')	SB-5 (12'-14')	SB-6 (0'-2')	SB-6 (12'-14')	SB-7 (0'-2')	SB-7 (12'-14')
Lab Sample ID:					JC7112-10	JC7278-1	JC7278-2	JC7278-3	JC7278-4	JC7278-5	JC7278-6	JC7112-5	JC7112-6	JC7112-7	JC7112-1	JC7112-2	JC7112-3	JC7112-4	JC7112-8	JC7112-9
Date Sampled:					10/26/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015
Matrix:					Field Blank Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
VOCs in Soil																				
Acetone	mg/kg	0.05	100	100	ND (3.3)	ND (0.0023)	ND (0.0023)	ND (0.0033)	ND (0.0023)	ND (0.0023)	ND (0.0022)	0.0064 J	ND (0.0019)	ND (0.0020)	0.0059 J	ND (0.0026)	ND (0.0020)	ND (0.0022)	0.0191	0.0061 J
Benzene	mg/kg	0.06	2.9	4.8	ND (0.24)	ND (0.00014)	ND (0.00014)	ND (0.00020)	ND (0.00013)	ND (0.00013)	ND (0.00013)	0.0046	ND (0.00011)	ND (0.00012)	ND (0.00012)	ND (0.00015)	ND (0.00012)	ND (0.00013)	0.0015	ND (0.00014)
Bromochloromethane	mg/kg	-	-	-	ND (0.37)	ND (0.00032)	ND (0.00032)	ND (0.00046)	ND (0.00031)	ND (0.00031)	ND (0.00031)	ND (0.00033)	ND (0.00027)	ND (0.00027)	ND (0.00029)	ND (0.00035)	ND (0.00028)	ND (0.00030)	ND (0.00028)	ND (0.00032)
Bromodichloromethane	mg/kg	-	-	-	ND (0.23)	ND (0.00016)	ND (0.00016)	ND (0.00023)	ND (0.00016)	ND (0.00016)	ND (0.00015)	ND (0.00016)	ND (0.00013)	ND (0.00014)	ND (0.00015)	ND (0.00018)	ND (0.00014)	ND (0.00015)	ND (0.00014)	ND (0.00016)
Bromoform	mg/kg	-	-	-	ND (0.23)	ND (0.00024)	ND (0.00025)	ND (0.00035)	ND (0.00024)	ND (0.00024)	ND (0.00023)	ND (0.00025)	ND (0.00020)	ND (0.00021)	ND (0.00022)	ND (0.00027)	ND (0.00021)	ND (0.00023)	ND (0.00021)	ND (0.00025)
Bromomethane	mg/kg	-	-	-	ND (0.42)	ND (0.00037)	ND (0.00038)	ND (0.00054)	ND (0.00037)	ND (0.00037)	ND (0.00036)	ND (0.00038)	ND (0.00031)	ND (0.00032)	ND (0.00034)	ND (0.00042)	ND (0.00033)	ND (0.00036)	ND (0.00033)	ND (0.00038)
2-Butanone (MEK)	mg/kg	0.12	100	100	ND (5.6)	ND (0.0020)	ND (0.0020)	ND (0.0028)	ND (0.0019)	ND (0.0019)	ND (0.0019)	ND (0.0020)	ND (0.0016)	ND (0.0017)	ND (0.0018)	ND (0.0022)	ND (0.0017)	ND (0.0019)	ND (0.0017)	ND (0.0020)
Carbon disulfide	mg/kg	-	100	-	ND (0.25)	ND (0.00023)	ND (0.00024)	ND (0.00034)	ND (0.00023)	ND (0.00023)	ND (0.00023)	ND (0.00024)	ND (0.00020)	ND (0.00020)	ND (0.00021)	ND (0.00026)	ND (0.00021)	ND (0.00022)	ND (0.00021)	ND (0.00024)
Carbon tetrachloride	mg/kg	0.76	1.4	2.4	ND (0.22)	ND (0.00024)	ND (0.00024)	ND (0.00034)	ND (0.00023)	ND (0.00023)	ND (0.00023)	ND (0.00024)	ND (0.00020)	ND (0.00020)	ND (0.00022)	ND (0.00026)	ND (0.00021)	ND (0.00023)	ND (0.00021)	ND (0.00024)
Chlorobenzene	mg/kg	1.1	100	100	ND (0.19)	ND (0.00016)	ND (0.00016)	ND (0.00023)	ND (0.00016)	ND (0.00016)	ND (0.00015)	ND (0.00016)	ND (0.00013)	ND (0.00014)	ND (0.00014)	ND (0.00018)	ND (0.00014)	ND (0.00015)	ND (0.00014)	ND (0.00016)
Chloroethane	mg/kg	-			ND (0.34)	ND (0.00049)	ND (0.00050)	ND (0.00071)	ND (0.00049)	ND (0.00049)	ND (0.00048)	ND (0.00051)	ND (0.00041)	ND (0.00043)	ND (0.00045)	ND (0.00055)	ND (0.00043)	ND (0.00047)	ND (0.00043)	ND (0.00050)
Chloroform	mg/kg	0.37	10	49	ND (0.19)	ND (0.00015)	ND (0.00015)	ND (0.00022)	ND (0.00015)	ND (0.00015)	ND (0.00015)	ND (0.00016)	ND (0.00013)	ND (0.00013)	ND (0.00014)	ND (0.00017)	ND (0.00013)	ND (0.00015)	ND (0.00013)	ND (0.00016)
Chloromethane	mg/kg	-	-	-	ND (0.41)	ND (0.00027)	ND (0.00027)	ND (0.00039)	ND (0.00026)	ND (0.00027)	ND (0.00026)	ND (0.00028)	ND (0.00023)	ND (0.00023)	ND (0.00025)	ND (0.00030)	ND (0.00024)	ND (0.00026)	ND (0.00024)	ND (0.00027)
Cyclohexane	mg/kg	-	-	-	ND (0.28)	ND (0.00032)	ND (0.00033)	ND (0.00047)	ND (0.00032)	ND (0.00032)	ND (0.00031)	ND (0.00033)	ND (0.00027)	ND (0.00028)	ND (0.00030)	ND (0.00036)	ND (0.00029)	ND (0.00031)	ND (0.00028)	ND (0.00033)
1,2-Dibromo-3-chloropropane	mg/kg	-	-	-	ND (0.99)	ND (0.00056)	ND (0.00057)	ND (0.00081)	ND (0.00055)	ND (0.00055)	ND (0.00054)	ND (0.00058)	ND (0.00047)	ND (0.00048)	ND (0.00051)	ND (0.00062)	ND (0.00049)	ND (0.00054)	ND (0.00049)	ND (0.00057)
Dibromochloromethane	mg/kg	-			ND (0.15)	ND (0.00021)	ND (0.00021)	ND (0.00030)	ND (0.00021)	ND (0.00021)	ND (0.00020)	ND (0.00022)	ND (0.00018)	ND (0.00018)	ND (0.00019)	ND (0.00023)	ND (0.00019)	ND (0.00020)	ND (0.00018)	ND (0.00021)
1,2-Dibromoethane	mg/kg	-	-	-	ND (0.23)	ND (0.00013)	ND (0.00014)	ND (0.00019)	ND (0.00013)	ND (0.00013)	ND (0.00013)	ND (0.00014)	ND (0.00011)	ND (0.00012)	ND (0.00012)	ND (0.00015)	ND (0.00012)	ND (0.00013)	ND (0.00012)	ND (0.00014)
1,2-Dichlorobenzene	mg/kg	1.1	100	100	ND (0.19)	ND (0.00013)	ND (0.00013)	ND (0.00018)	ND (0.00012)	ND (0.00012)	ND (0.00012)	ND (0.00013)	ND (0.00011)	ND (0.00011)	ND (0.00011)	ND (0.00014)	ND (0.00011)	ND (0.00012)	ND (0.00011)	ND (0.00013)
1,3-Dichlorobenzene	mg/kg	2.4	17	49	ND (0.23)	ND (0.00016)	ND (0.00016)	ND (0.00023)	ND (0.00016)	ND (0.00016)	ND (0.00016)	ND (0.00017)	ND (0.00014)	ND (0.00014)	ND (0.00015)	ND (0.00018)	ND (0.00014)	ND (0.00015)	ND (0.00014)	ND (0.00016)
1,4-Dichlorobenzene	mg/kg	1.8	9.8	13	ND (0.27)	ND (0.00023)	ND (0.00023)	ND (0.00033)	ND (0.00023)	ND (0.00023)	ND (0.00022)	ND (0.00024)	ND (0.00019)	ND (0.00020)	ND (0.00021)	ND (0.00026)	ND (0.00020)	ND (0.00022)	ND (0.00020)	ND (0.00024)
Dichlorodifluoromethane	mg/kg	-	-	-	ND (0.90)	ND (0.00037)	ND (0.00038)	ND (0.00054)	ND (0.00036)	ND (0.00037)	ND (0.00036)	ND (0.00038)	ND (0.00031)	ND (0.00032)	ND (0.00034)	ND (0.00041)	ND (0.00033)	ND (0.00036)	ND (0.00032)	ND (0.00038)
1,1-Dichloroethane	mg/kg	0.27	19	26	ND (0.17)	ND (0.00014)	ND (0.00015)	ND (0.00021)	ND (0.00014)	ND (0.00014)	ND (0.00014)	ND (0.00015)	ND (0.00012)	ND (0.00012)	ND (0.00013)	ND (0.00016)	ND (0.00013)	ND (0.00014)	ND (0.00013)	ND (0.00015)
1,2-Dichloroethane	mg/kg	0.02	2.3	3.1	ND (0.18)	ND (0.00014)	ND (0.00014)	ND (0.00020)	ND (0.00014)	ND (0.00014)	ND (0.00013)	ND (0.00014)	ND (0.00012)	ND (0.00012)	ND (0.00013)	ND (0.00015)	ND (0.00012)	ND (0.00013)	ND (0.00012)	ND (0.00014)
1,1-Dichloroethene	mg/kg	0.33	100	100	ND (0.51)	ND (0.00061)	ND (0.00061)	ND (0.00088)	ND (0.00060)	ND (0.00060)	ND (0.00059)	ND (0.00063)	ND (0.00051)	ND (0.00052)	ND (0.00055)	ND (0.00068)	ND (0.00053)	ND (0.00058)	ND (0.00053)	ND (0.00062)
cis-1,2-Dichloroethene	mg/kg	0.25	59	100	ND (0.27)	ND (0.00080)	ND (0.00081)	ND (0.0012)	ND (0.00079)	ND (0.00079)	ND (0.00077)	ND (0.00082)	ND (0.00067)	ND (0.00069)	ND (0.00073)	ND (0.00089)	ND (0.00070)	ND (0.00077)	ND (0.00070)	ND (0.00082)
trans-1,2-Dichloroethene	mg/kg	0.19	100	100	ND (0.65)	ND (0.00061)	ND (0.00062)	ND (0.00088)	ND (0.00060)	ND (0.00060)	ND (0.00059)	ND (0.00063)	ND (0.00051)	ND (0.00053)	ND (0.00056)	ND (0.00068)	ND (0.00054)	ND (0.00058)	ND (0.00053)	ND (0.00062)
1,2-Dichloropropane	mg/kg	-	-	-	ND (0.39)	ND (0.00024)	ND (0.00025)	ND (0.00035)	ND (0.00024)	ND (0.00024)	ND (0.00024)	ND (0.00025)	ND (0.00021)	ND (0.00021)	ND (0.00022)	ND (0.00027)	ND (0.00021)	ND (0.00023)	ND (0.00021)	ND (0.00025)
cis-1,3-Dichloropropene	mg/kg	-	-	-	ND (0.21)	ND (0.00012)	ND (0.00012)	ND (0.00018)	ND (0.00012)	ND (0.00012)	ND (0.00012)	ND (0.00012)	ND (0.00010)	ND (0.00010)	ND (0.00011)	ND (0.00014)	ND (0.00011)	ND (0.00012)	ND (0.00011)	ND (0.00012)
trans-1,3-Dichloropropene	mg/kg	-	-	-	ND (0.19)	ND (0.00018)	ND (0.00018)	ND (0.00026)	ND (0.00018)	ND (0.00018)	ND (0.00018)	ND (0.00019)	ND (0.00015)	ND (0.00016)	ND (0.00017)	ND (0.00020)	ND (0.00016)	ND (0.00017)	ND (0.00016)	ND (0.00019)
Ethylbenzene	mg/kg	1	30	41	ND (0.27)	ND (0.00017)	ND (0.00017)	ND (0.00024)	ND (0.00016)	ND (0.00017)	ND (0.00016)	ND (0.00017)	ND (0.00014)	ND (0.00014)	ND (0.00015)	ND (0.00019)	ND (0.00015)	ND (0.00016)	ND (0.00015)	ND (0.00017)
Freon 113	mg/kg	-	100		ND (0.52)	ND (0.00046)	ND (0.00047)	ND (0.00065)	ND (0.00045)	ND (0.00045)	ND (0.00044)	ND (0.00047)	ND (0.00039)	ND (0.00040)	ND (0.00042)	ND (0.00051)	ND (0.00040)	ND (0.00044)	ND (0.00040)	ND (0.00047)
2-Hexanone	mg/kg	-	-	-	ND (1.7)	ND (0.0014)	ND (0.0014)	ND (0.0020)	ND (0.0014)	ND (0.0014)	ND (0.0013)	ND (0.0014)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0015)	ND (0.0012)	ND (0.0013)	ND (0.0012)	ND (0.0014)
Isopropylbenzene	mg/kg	-	100		ND (0.23)	ND (0.00011)	ND (0.00011)	ND (0.00016)	ND (0.00011)	ND (0.00011)	ND (0.00010)	ND (0.00011)	ND (0.000091)	ND (0.000094)	ND (0.000099)	ND (0.00012)	ND (0.000096)	ND (0.00010)	ND (0.000095)	ND (0.00011)
Methyl Acetate	mg/kg	-	-	-	ND (1.9)	ND (0.00088)	ND (0.00089)	ND (0.0013)	ND (0.00087)	ND (0.00087)	ND (0.00085)	ND (0.00091)	ND (0.00074)	ND (0.00076)	ND (0.00080)	ND (0.00099)	ND (0.00078)	ND (0.00085)	ND (0.00077)	ND (0.00090)
Methylcyclohexane	mg/kg	-	-	-	ND (0.22)	ND (0.00023)	ND (0.00024)	ND (0.00034)	ND (0.00023)	ND (0.00023)	ND (0.00022)	ND (0.00024)	ND (0.00020)	ND (0.00020)	ND (0.00021)	ND (0.00026)	ND (0.00020)	ND (0.00022)	ND (0.00020)	ND (0.00024)
Methyl Tert Butyl Ether	mg/kg	0.93	62	100	ND (0.24)	ND (0.00016)	ND (0.00016)	ND (0.00023)	ND (0.00015)	ND (0.00016)	ND (0.00015)	ND (0.00016)	ND (0.00013)	ND (0.00014)	ND (0.00014)	ND (0.00018)	ND (0.00014)	ND (0.00015)	ND (0.00014)	ND (0.00016)
4-Methyl-2-pentanone(MIBK)	mg/kg	-			ND (1.0)	ND (0.00047)	ND (0.00048)	ND (0.00068)	ND (0.00046)	ND (0.00047)	ND (0.00045)	ND (0.00049)	ND (0.00040)	ND (0.00041)	ND (0.00043)	ND (0.00053)	ND (0.00041)	ND (0.00045)	ND (0.00041)	ND (0.00048)
Methylene chloride	mg/kg	0.05	51	100	ND (0.73)	ND (0.0010)	ND (0.0010)	ND (0.0015)	ND (0.00099)	ND (0.0010)	ND (0.00097)	ND (0.0010)	ND (0.00085)	ND (0.00087)	ND (0.00092)	ND (0.0011)	ND (0.00089)	0.0014 J	ND (0.00088)	ND (0.0010)
Styrene	mg/kg	-			ND (0.27)	ND (0.00018)	ND (0.00018)	ND (0.00026)	ND (0.00018)	ND (0.00018)	ND (0.00018)	ND (0.00019)	ND (0.00015)	ND (0.00016)	ND (0.00017)	ND (0.00020)	ND (0.00016)	ND (0.00018)	ND (0.00016)	ND (0.00019)
1,1,2,2-Tetrachloroethane	mg/kg	-	35		ND (0.21)	ND (0.00018)	ND (0.00018)	ND (0.00026)	ND (0.00018)	ND (0.00018)	ND (0.00017)	ND (0.00018)	ND (0.00015)	ND (0.00015)	ND (0.00016)	ND (0.00020)	ND (0.00016)	ND (0.00017)	ND (0.00016)	ND (0.00018)
Tetrachloroethene	mg/kg	1.3	5.5	19	ND (0.40)	0.0012 J	0.0012 J	0.0031	0.006	0.00035 J	ND (0.00030)	ND (0.00032)	ND (0.00026)	ND (0.00027)	ND (0.00028)	ND (0.00034)	ND (0.00027)	ND (0.00030)	ND (0.00027)	ND (0.00032)
Toluene	mg/kg	0.7	100	100	ND (0.16)	ND (0.00021)	ND (0.00022)	ND (0.00031)	ND (0.00021)	ND (0.00021)	ND (0.00021)	0.00056 J	ND (0.00018)	ND (0.00018)	ND (0.00019)	ND (0.00024)	ND (0.00019)	ND (0.00020)	ND (0.00019)	ND (0.00022)
1,2,3-Trichlorobenzene	mg/kg	-			ND (0.23)	ND (0.00018)	ND (0.00018)	ND (0.00026)	ND (0.00018)	ND (0.00018)	ND (0.00017)	ND (0.00019)	ND (0.00015)	ND (0.00016)	ND (0.00016)	ND (0.00020)	ND (0.00016)	ND (0.00017)	ND (0.00016)	ND (0.00018)
1,2,4-Trichlorobenzene	mg/kg	-			ND (0.21)	ND (0.00017)	ND (0.00018)	ND (0.00025)	ND (0.00017)	ND (0.00017)	ND (0.00017)	ND (0.00018)	ND (0.00015)	ND (0.00015)	ND (0.00016)	ND (0.00019)	ND (0.00015)	ND (0.00017)	ND (0.00015)	ND (0.00018)
1,1,1-Trichloroethane	mg/kg	0.68	100	100	ND (0.25)	ND (0.00015)	ND (0.00015)	ND (0.00022)	ND (0.00015)	ND (0.00015)	ND (0.00015)	ND (0.00016)	ND (0.00013)	ND (0.00013)	ND (0.00014)	ND (0.00017)	ND (0.00013)	ND (0.00015)	ND (0.00013)	ND (0.00016)
1,1,2-Trichloroethane	mg/kg	-	-	-	ND (0.21)	ND (0.00015)	ND (0.00015)	ND (0.00022)	ND (0.00015)	ND (0.00015)	ND (0.00015)	ND (0.00016)	ND (0.00013)	ND (0.00013)	ND (0.00014)	ND (0.00017)	ND (0.00013)	ND (0.00014)	ND (0.00013)	ND (0.00015)
Trichloroethene	mg/kg	0.47	10	21	ND (0.22)	0.0019	0.001	0.0045	0.0073	0.00041 J	ND (0.00015)	ND (0.00016)	ND (0.00013)	ND (0.00013)	ND (0.00014)	ND (0.00017)	ND (0.00013)	ND (0.00014)	ND (0.00013)	ND (0.00015)
Trichlorofluoromethane	mg/kg	-	-	-	ND (0.43)	ND (0.00026)	ND (0.00026)	ND (0.00037)	ND (0.00025)	ND (0.00025)	ND (0.00025)	ND (0.00026)	ND (0.00021)	ND (0.00022)	ND (0.00023)	ND (0.00029)	ND (0.00022)	ND (0.00025)	ND (0.00022)	ND (0.00026)
Vinyl chloride	mg/kg	0.02	0.21	0.9	ND (0.15)	ND (0.00020)	ND (0.00020)	ND (0.00029)	ND (0.00020)	ND (0.00020)	ND (0.00019)	ND (0.00021)	ND (0.00017)	ND (0.00017)	ND (0.00018)	ND (0.00023)	ND (0.00018)	ND (0.00019)	ND (0.00018)	ND (0.00021)
m,p-Xylene	mg/kg	0.26	100	100	ND (0.38)	ND (0.00036)	ND (0.00037)	ND (0.00052)	ND (0.00036)	ND (0.00036)	ND (0.00035)	ND (0.00037)	ND (0.00030)	ND (0.00031)	ND (0.00033)	ND (0.00040)	ND (0.00032)	ND (0.00035)	ND (0.00032)	ND (0.00037)
o-Xylene	mg/kg	0.26	100	100	ND (0.17)	ND (0.00028)	ND (0.00028)	ND (0.00041)	ND (0.00028)	ND (0.00028)	ND (0.00027)	ND (0.00029)	ND (0.00024)	ND (0.00024)	ND (0.00026)	ND (0.00031)	ND (0.00025)	ND (0.00027)	ND (0.00025)	ND (0.00029)
Xylene (total)	mg/kg	0.26	100	100	ND (0.17)	ND (0.00028)	ND (0.00028)	ND (0.00041)	ND (0.00028)	ND (0.00028)	ND (0.00027)	ND (0.00029)	ND (0.00024)	ND (0.00024)	ND (0.00026)	ND (0.00031)	ND (0.00025)	ND (0.00027)	ND (0.00025)	ND (0.00029)

ded cells show detected compounds

Table 1
SVOCs in Soil

Client Sample ID:		NY SCO - Unrestricted Use (6 NYCRR 375-6 12/06)	NY SCO - Residential w/CP-51 (10/10) (6 NYCRR 375-6 12/06)	NY SCO - Restricted Residential w/CP-51 (10/10) (6 NYCRR 375-6 12/06)	FB-1	SB-1 (0'-2')	SB-1 (2'-4')	SB-2 (0'-2')	SB-2 (2'-4')	SB-3 (0'-2')	SB-3 (12'-14')	SB-4 (0'-2')	SB-4 (12'-14')	SB-401 (12'-14')	SB-5 (0'-2')	SB-5 (12'-14')	SB-6 (0'-2')	SB-6 (12'-14')	SB-7 (0'-2')	SB-7 (12'-14')
Lab Sample ID:					JC7112-10	JC7278-1	JC7278-2	JC7278-3	JC7278-4	JC7278-5	JC7278-6	JC7112-5	JC7112-6	JC7112-7	JC7112-1	JC7112-2	JC7112-3	JC7112-4	JC7112-8	JC7112-9
Date Sampled:					10/26/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015
Matrix:					Field Blank	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
					Soil															
SVOCs in Soil																				
2-Chlorophenol	mg/kg	-	100		ND (1.3)	ND (0.028)	ND (0.032)	ND (0.026)	ND (0.026)	ND (0.030)	ND (0.025)	ND (0.028)	ND (0.026)	ND (0.024)	ND (0.027)	ND (0.026)	ND (0.025)	ND (0.026)	ND (0.026)	ND (0.024)
4-Chloro-3-methyl phenol	mg/kg	-	-	-	ND (1.3)	ND (0.034)	ND (0.039)	ND (0.032)	ND (0.033)	ND (0.036)	ND (0.031)	ND (0.034)	ND (0.031)	ND (0.030)	ND (0.034)	ND (0.032)	ND (0.031)	ND (0.032)	ND (0.031)	ND (0.029)
2,4-Dichlorophenol	mg/kg	-	100		ND (1.6)	ND (0.030)	ND (0.034)	ND (0.028)	ND (0.029)	ND (0.032)	ND (0.027)	ND (0.030)	ND (0.028)	ND (0.026)	ND (0.030)	ND (0.028)	ND (0.027)	ND (0.028)	ND (0.028)	ND (0.026)
2,4-Dimethylphenol	mg/kg	-	-	-	ND (1.8)	ND (0.069)	ND (0.079)	ND (0.065)	ND (0.066)	ND (0.074)	ND (0.062)	ND (0.069)	ND (0.063)	ND (0.060)	ND (0.068)	ND (0.065)	ND (0.063)	ND (0.064)	ND (0.063)	ND (0.059)
2,4-Dinitrophenol	mg/kg	-	100		ND (6.5)	ND (0.16)	ND (0.19)	ND (0.16)	ND (0.16)	ND (0.18)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.14)	ND (0.16)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.14)
4,6-Dinitro-o-cresol	mg/kg	-	-	-	ND (1.3)	ND (0.071)	ND (0.082)	ND (0.067)	ND (0.068)	ND (0.077)	ND (0.065)	ND (0.071)	ND (0.066)	ND (0.062)	ND (0.071)	ND (0.067)	ND (0.065)	ND (0.067)	ND (0.066)	ND (0.061)
2-Methylphenol	mg/kg	0.33	100	100	ND (1.3)	ND (0.054)	ND (0.062)	ND (0.052)	ND (0.052)	ND (0.058)	ND (0.049)	ND (0.054)	ND (0.050)	ND (0.048)	ND (0.054)	ND (0.051)	ND (0.050)	ND (0.051)	ND (0.050)	ND (0.046)
3&4-Methylphenol	mg/kg	-	-	-	ND (1.1)	ND (0.036)	ND (0.041)	ND (0.034)	ND (0.034)	ND (0.039)	ND (0.033)	ND (0.036)	ND (0.033)	ND (0.031)	ND (0.036)	ND (0.034)	ND (0.033)	ND (0.034)	ND (0.033)	ND (0.031)
2-Nitrophenol	mg/kg	-			ND (1.9)	ND (0.035)	ND (0.040)	ND (0.033)	ND (0.033)	ND (0.037)	ND (0.031)	ND (0.035)	ND (0.032)	ND (0.030)	ND (0.034)	ND (0.033)	ND (0.032)	ND (0.032)	ND (0.032)	ND (0.030)
4-Nitrophenol	mg/kg	-			ND (0.91)	ND (0.064)	ND (0.073)	ND (0.060)	ND (0.061)	ND (0.069)	ND (0.058)	ND (0.064)	ND (0.059)	ND (0.056)	ND (0.063)	ND (0.060)	ND (0.058)	ND (0.060)	ND (0.059)	ND (0.054)
Pentachlorophenol	mg/kg	0.8	2.4	6.7	ND (1.4)	ND (0.092)	ND (0.10)	ND (0.087)	ND (0.088)	ND (0.098)	ND (0.083)	ND (0.092)	ND (0.085)	ND (0.080)	ND (0.091)	ND (0.086)	ND (0.083)	ND (0.086)	ND (0.085)	ND (0.078)
Phenol	mg/kg	0.33	100	100	ND (0.55)	ND (0.028)	ND (0.032)	ND (0.027)	ND (0.027)	ND (0.030)	ND (0.025)	ND (0.028)	ND (0.026)	ND (0.025)	ND (0.028)	ND (0.026)	ND (0.026)	ND (0.026)	ND (0.026)	ND (0.024)
2,3,4,6-Tetrachlorophenol	mg/kg	-	-	-	ND (1.4)	ND (0.035)	ND (0.040)	ND (0.033)	ND (0.034)	ND (0.038)	ND (0.032)	ND (0.035)	ND (0.033)	ND (0.031)	ND (0.035)	ND (0.033)	ND (0.032)	ND (0.033)	ND (0.033)	ND (0.030)
2,4,5-Trichlorophenol	mg/kg	-	100		ND (1.7)	ND (0.034)	ND (0.039)	ND (0.032)	ND (0.032)	ND (0.036)	ND (0.031)	ND (0.034)	ND (0.031)	ND (0.030)	ND (0.034)	ND (0.032)	ND (0.031)	ND (0.032)	ND (0.031)	ND (0.029)
2,4,6-Trichlorophenol	mg/kg	-			ND (1.5)	ND (0.030)	ND (0.035)	ND (0.029)	ND (0.029)	ND (0.032)	ND (0.027)	ND (0.030)	ND (0.028)	ND (0.026)	ND (0.030)	ND (0.028)	ND (0.028)	ND (0.028)	ND (0.028)	ND (0.026)
Acenaphthene	mg/kg	20	100	100	ND (0.30)	ND (0.035)	ND (0.040)	ND (0.033)	ND (0.034)	ND (0.038)	ND (0.032)	ND (0.035)	ND (0.033)	ND (0.031)	0.17	ND (0.033)	ND (0.032)	ND (0.033)	0.0838	ND (0.030)
Acenaphthylene	mg/kg	100	100	100	ND (0.20)	ND (0.0039)	ND (0.0045)	0.0645	ND (0.0038)	ND (0.0042)	ND (0.0036)	0.0269 J	ND (0.0036)	ND (0.0035)	0.128	ND (0.0037)	0.0198 J	ND (0.0037)	0.122	ND (0.0034)
Acetophenone	mg/kg	-	-	-	ND (0.36)	ND (0.0064)	ND (0.0073)	ND (0.0060)	ND (0.0061)	ND (0.0069)	ND (0.0058)	ND (0.0064)	ND (0.0059)	ND (0.0056)	ND (0.0063)	ND (0.0060)	ND (0.0058)	ND (0.0060)	ND (0.0059)	ND (0.0054)
Anthracene	mg/kg	100	100	100	ND (0.19)	ND (0.0032)	0.0281 J	0.122	ND (0.0031)	ND (0.0035)	ND (0.0029)	0.101	ND (0.0030)	ND (0.0028)	0.487	ND (0.0030)	0.1	ND (0.0030)	0.363	ND (0.0028)
Atrazine	mg/kg	-	-	-	ND (0.42)	ND (0.015)	ND (0.018)	ND (0.015)	ND (0.015)	ND (0.017)	ND (0.014)	ND (0.015)	ND (0.014)	ND (0.013)	ND (0.015)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.013)
Benzaldehyde	mg/kg	1	1	1	ND (0.67)	0.0153 J	0.137	0.569	ND (0.0069)	0.0323 J	ND (0.0066)	0.288	ND (0.0067)	ND (0.0063)	**1.39**	ND (0.0068)	0.293	ND (0.0068)	**1.15**	ND (0.0062)
Benzo(a)anthracene	mg/kg	1	1	1	ND (0.22)	ND (0.0080)	0.149	0.571	ND (0.0077)	0.0346 J	ND (0.0072)	0.273	ND (0.0074)	ND (0.0070)	**1.25**	ND (0.0075)	0.263	ND (0.0075)	**1.08**	ND (0.0068)
Benzo(a)pyrene	mg/kg	1	1	1	ND (0.24)	0.0261 J	0.178	0.681	ND (0.0074)	0.0475	ND (0.0070)	0.343	ND (0.0071)	ND (0.0068)	**1.62**	ND (0.0073)	0.302	ND (0.0072)	**1.39**	ND (0.0066)
Benzo(b)fluoranthene	mg/kg	100	100	100	ND (0.22)	ND (0.011)	0.0991	0.382	ND (0.011)	0.0247 J	ND (0.010)	0.177	ND (0.010)	ND (0.0099)	0.843	ND (0.011)	0.147	ND (0.011)	0.765	ND (0.0096)
Benzo(g,h,i)perylene	mg/kg	0.8	1	3.9	ND (0.31)	ND (0.0084)	0.0554	0.256	ND (0.0080)	0.0212 J	ND (0.0076)	0.125	ND (0.0077)	ND (0.0073)	0.572	ND (0.0079)	0.123	ND (0.0078)	0.442	ND (0.0071)
Benzo(k)fluoranthene	mg/kg	-	-	-	ND (0.22)	ND (0.0086)	ND (0.0098)	ND (0.0081)	ND (0.0082)	ND (0.0092)	ND (0.0078)	ND (0.0086)	ND (0.0079)	ND (0.0075)	ND (0.0085)	ND (0.0080)	ND (0.0078)	ND (0.0080)	ND (0.0079)	ND (0.0073)
4-Bromophenyl phenyl ether	mg/kg	-	100		ND (0.25)	ND (0.020)	ND (0.023)	ND (0.019)	ND (0.019)	ND (0.022)	ND (0.018)	0.0389 J	ND (0.019)	ND (0.018)	0.174	ND (0.019)	ND (0.018)	ND (0.019)	0.274	ND (0.017)
Butyl benzyl phthalate	mg/kg	-			ND (0.22)	0.0153 J	ND (0.0079)	ND (0.0066)	ND (0.0067)	ND (0.0075)	ND (0.0063)	ND (0.0069)	ND (0.0064)	ND (0.0061)	ND (0.0069)	ND (0.0065)	ND (0.0063)	ND (0.0065)	ND (0.0064)	ND (0.0059)
1,1'-Biphenyl	mg/kg	-	-	-	ND (0.27)	ND (0.0094)	ND (0.011)	ND (0.0089)	ND (0.0090)	ND (0.010)	ND (0.0085)	ND (0.0094)	ND (0.0087)	ND (0.0082)	ND (0.0093)	ND (0.0088)	ND (0.0085)	ND (0.0088)	ND (0.0087)	ND (0.0080)
2-Chloronaphthalene	mg/kg	-	-	-	ND (0.34)	ND (0.0054)	ND (0.0061)	ND (0.0051)	ND (0.0051)	ND (0.0058)	ND (0.0049)	ND (0.0054)	ND (0.0050)	ND (0.0047)	ND (0.0053)	ND (0.0050)	ND (0.0049)	ND (0.0050)	ND (0.0050)	ND (0.0046)
4-Chloroaniline	mg/kg	-	100		ND (0.30)	ND (0.010)	ND (0.011)	ND (0.0094)	ND (0.0095)	ND (0.011)	ND (0.0090)	ND (0.010)	ND (0.0092)	ND (0.0087)	ND (0.0099)	ND (0.0093)	ND (0.0091)	ND (0.0093)	ND (0.0092)	ND (0.0085)
Carbazole	mg/kg	-	-	-	ND (0.17)	ND (0.0042)	ND (0.0048)	0.0371 J	ND (0.0040)	ND (0.0045)	ND (0.0038)	0.0223 J	ND (0.0039)	ND (0.0036)	0.268	ND (0.0039)	0.0450 J	ND (0.0039)	0.131	ND (0.0036)
Caprolactam	mg/kg	-	-	-	ND (0.41)	ND (0.024)	ND (0.028)	0.0546 J	ND (0.023)	ND (0.026)	ND (0.022)	ND (0.024)	ND (0.022)	ND (0.021)	ND (0.024)	ND (0.023)	ND (0.022)	ND (0.023)	ND (0.022)	ND (0.021)
Chrysene	mg/kg	1	1	3.9	ND (0.16)	0.0234 J	0.141	0.539	ND (0.0058)	0.0317 J	ND (0.0055)	0.268	ND (0.0056)	ND (0.0053)	**1.31**	ND (0.0057)	0.288	ND (0.0057)	**1.15**	ND (0.0052)
bis(2-Chloroethoxy) methane	mg/kg	-	-	-	ND (0.42)	ND (0.0085)	ND (0.0097)	ND (0.0081)	ND (0.0082)	ND (0.0092)	ND (0.0077)	ND (0.0085)	ND (0.0079)	ND (0.0075)	ND (0.0085)	ND (0.0080)	ND (0.0078)	ND (0.0080)	ND (0.0079)	ND (0.0073)
bis(2-Chloroethyl)ether	mg/kg	-	-	-	ND (0.43)	ND (0.016)	ND (0.018)	ND (0.015)	ND (0.015)	ND (0.017)	ND (0.014)	ND (0.016)	ND (0.014)	ND (0.014)	ND (0.016)	ND (0.015)	ND (0.014)	ND (0.015)	ND (0.014)	ND (0.013)

Table 1
SVOCs in Soil

Client Sample ID:		NY SCO - Unrestricted Use (6 NYCRR 375-6 12/06)	NY SCO - Residential w/CP-51 (10/10) (6 NYCRR 375-6 12/06)	NY SCO - Restricted Residential w/CP-51 (10/10) (6 NYCRR 375-6 12/06)	FB-1	SB-1 (0'-2')	SB-1 (2'-4')	SB-2 (0'-2')	SB-2 (2'-4')	SB-3 (0'-2')	SB-3 (12'-14')	SB-4 (0'-2')	SB-4 (12'-14')	SB-401 (12'-14')	SB-5 (0'-2')	SB-5 (12'-14')	SB-6 (0'-2')	SB-6 (12'-14')	SB-7 (0'-2')	SB-7 (12'-14')
Lab Sample ID:					JC7112-10	JC7278-1	JC7278-2	JC7278-3	JC7278-4	JC7278-5	JC7278-6	JC7112-5	JC7112-6	JC7112-7	JC7112-1	JC7112-2	JC7112-3	JC7112-4	JC7112-8	JC7112-9
Date Sampled:					10/26/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015
Matrix:					Field Blank	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
					Soil															
bis(2-Chloroisopropyl)ether	mg/kg	-	-	-	ND (0.41)	ND (0.0086)	ND (0.0098)	ND (0.0081)	ND (0.0082)	ND (0.0092)	ND (0.0078)	ND (0.0086)	ND (0.0079)	ND (0.0075)	ND (0.0085)	ND (0.0081)	ND (0.0078)	ND (0.0081)	ND (0.0079)	ND (0.0073)
4-Chlorophenyl phenyl ether	mg/kg	-	-	-	ND (0.38)	ND (0.0071)	ND (0.0081)	ND (0.0067)	ND (0.0068)	ND (0.0076)	ND (0.0064)	ND (0.0071)	ND (0.0065)	ND (0.0062)	ND (0.0070)	ND (0.0066)	ND (0.0064)	ND (0.0066)	ND (0.0065)	ND (0.0060)
2,4-Dinitrotoluene	mg/kg	-	-	-	ND (0.32)	ND (0.0071)	ND (0.0081)	ND (0.0067)	ND (0.0068)	ND (0.0076)	ND (0.0064)	ND (0.0071)	ND (0.0065)	ND (0.0062)	ND (0.0070)	ND (0.0066)	ND (0.0064)	ND (0.0066)	ND (0.0065)	ND (0.0060)
2,6-Dinitrotoluene	mg/kg	-	1.03		ND (0.26)	ND (0.0097)	ND (0.011)	ND (0.0092)	ND (0.0093)	ND (0.010)	ND (0.0088)	ND (0.0097)	ND (0.0089)	ND (0.0085)	ND (0.0096)	ND (0.0091)	ND (0.0088)	ND (0.0091)	ND (0.0089)	ND (0.0083)
3,3'-Dichlorobenzidine	mg/kg	-	-	-	ND (0.56)	ND (0.025)	ND (0.028)	ND (0.023)	ND (0.024)	ND (0.026)	ND (0.022)	ND (0.025)	ND (0.023)	ND (0.021)	ND (0.024)	ND (0.023)	ND (0.022)	ND (0.023)	ND (0.023)	ND (0.021)
1,4-Dioxane	mg/kg	0.1	9.8	13	ND (0.72)	ND (0.025)	ND (0.029)	ND (0.024)	ND (0.024)	ND (0.027)	ND (0.023)	ND (0.025)	ND (0.023)	ND (0.022)	ND (0.025)	ND (0.024)	ND (0.023)	ND (0.024)	ND (0.023)	ND (0.022)
Dibenzo(a,h)anthracene	mg/kg	0.33	0.33	0.33	ND (0.28)	ND (0.013)	0.0272 J	0.0988	ND (0.013)	ND (0.014)	ND (0.012)	0.0536	ND (0.012)	ND (0.012)	0.235	ND (0.013)	0.041	ND (0.013)	0.202	ND (0.011)
Dibenzofuran	mg/kg	7	14	59	ND (0.23)	ND (0.0052)	ND (0.0060)	0.0175 J	ND (0.0050)	ND (0.0056)	ND (0.0047)	ND (0.0052)	ND (0.0048)	ND (0.0046)	0.116	ND (0.0049)	0.0223 J	ND (0.0049)	0.0477 J	ND (0.0045)
Di-n-butyl phthalate	mg/kg	-	100		ND (0.58)	ND (0.0044)	ND (0.0051)	ND (0.0042)	ND (0.0042)	ND (0.0048)	ND (0.0040)	ND (0.0044)	ND (0.0041)	ND (0.0039)	ND (0.0044)	ND (0.0042)	ND (0.0040)	ND (0.0042)	0.228	ND (0.0038)
Di-n-octyl phthalate	mg/kg	-	100		ND (0.25)	ND (0.0051)	ND (0.0058)	ND (0.0048)	ND (0.0049)	ND (0.0054)	ND (0.0046)	ND (0.0051)	ND (0.0047)	ND (0.0044)	ND (0.0050)	ND (0.0048)	ND (0.0046)	ND (0.0048)	ND (0.0047)	ND (0.0043)
Diethyl phthalate	mg/kg	-	100		ND (0.23)	ND (0.0048)	ND (0.0055)	ND (0.0045)	ND (0.0046)	ND (0.0051)	ND (0.0043)	ND (0.0048)	ND (0.0044)	ND (0.0042)	ND (0.0047)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0044)	ND (0.0041)
Dimethyl phthalate	mg/kg	-	100		ND (0.26)	ND (0.0054)	ND (0.0061)	ND (0.0051)	ND (0.0051)	ND (0.0058)	ND (0.0049)	ND (0.0054)	ND (0.0050)	ND (0.0047)	ND (0.0053)	ND (0.0050)	ND (0.0049)	ND (0.0050)	ND (0.0050)	ND (0.0046)
bis(2-Ethylhexyl)phthalate	mg/kg	-	50		ND (0.55)	ND (0.013)	ND (0.015)	ND (0.012)	ND (0.013)	ND (0.014)	ND (0.012)	0.0671 J	ND (0.012)	ND (0.011)	0.0789	ND (0.012)	ND (0.012)	ND (0.012)	0.577	ND (0.011)
Fluoranthene	mg/kg	100	100	100	ND (0.16)	0.0255 J	0.317	1.1	ND (0.0044)	0.0423	ND (0.0042)	0.487	ND (0.0042)	ND (0.0040)	2.89	ND (0.0043)	0.541	ND (0.0043)	2.14	ND (0.0039)
Fluorene	mg/kg	30	100	100	ND (0.27)	ND (0.0045)	ND (0.0051)	0.0249 J	ND (0.0043)	ND (0.0048)	ND (0.0040)	0.0199 J	ND (0.0041)	ND (0.0039)	0.188	ND (0.0042)	0.0344	ND (0.0042)	0.0972	ND (0.0038)
Hexachlorobenzene	mg/kg	0.33	0.41	1.2	ND (0.46)	ND (0.0074)	ND (0.0085)	ND (0.0070)	ND (0.0071)	ND (0.0079)	ND (0.0067)	ND (0.0074)	ND (0.0068)	ND (0.0065)	ND (0.0073)	ND (0.0069)	ND (0.0067)	ND (0.0069)	ND (0.0068)	ND (0.0063)
Hexachlorobutadiene	mg/kg	-	-	-	ND (0.39)	ND (0.010)	ND (0.011)	ND (0.0094)	ND (0.0095)	ND (0.011)	ND (0.0090)	ND (0.010)	ND (0.0092)	ND (0.0087)	ND (0.0099)	ND (0.0093)	ND (0.0091)	ND (0.0093)	ND (0.0092)	ND (0.0085)
Hexachlorocyclopentadiene	mg/kg	-			ND (0.48)	ND (0.060)	ND (0.068)	ND (0.056)	ND (0.057)	ND (0.064)	ND (0.054)	ND (0.060)	ND (0.055)	ND (0.052)	ND (0.059)	ND (0.056)	ND (0.054)	ND (0.056)	ND (0.055)	ND (0.051)
Hexachloroethane	mg/kg	-	-	-	ND (0.29)	ND (0.012)	ND (0.014)	ND (0.012)	ND (0.012)	ND (0.013)	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.010)
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	0.5	0.5	ND (0.40)	ND (0.019)	0.0947	0.407	ND (0.019)	0.0325 J	ND (0.018)	0.186	ND (0.018)	ND (0.017)	**0.957**	ND (0.018)	0.164	ND (0.018)	**0.817**	ND (0.017)
Isophorone	mg/kg	-	100		ND (0.34)	ND (0.0070)	ND (0.0080)	ND (0.0066)	ND (0.0067)	ND (0.0075)	ND (0.0064)	ND (0.0070)	ND (0.0065)	ND (0.0061)	ND (0.0070)	ND (0.0066)	ND (0.0064)	ND (0.0066)	ND (0.0065)	ND (0.0060)
2-Methylnaphthalene	mg/kg	-	0.41		ND (0.29)	ND (0.0070)	ND (0.0080)	ND (0.0066)	ND (0.0067)	ND (0.0075)	ND (0.0064)	ND (0.0070)	ND (0.0065)	ND (0.0061)	0.0466 J	ND (0.0066)	ND (0.0064)	ND (0.0066)	0.0235 J	ND (0.0060)
2-Nitroaniline	mg/kg	-			ND (0.32)	ND (0.0085)	ND (0.0097)	ND (0.0081)	ND (0.0082)	ND (0.0092)	ND (0.0077)	ND (0.0085)	ND (0.0079)	ND (0.0075)	ND (0.0085)	ND (0.0080)	ND (0.0078)	ND (0.0080)	ND (0.0079)	ND (0.0073)
3-Nitroaniline	mg/kg	-			ND (0.26)	ND (0.011)	ND (0.012)	ND (0.010)	ND (0.010)	ND (0.011)	ND (0.0097)	ND (0.011)	ND (0.0099)	ND (0.0093)	ND (0.011)	ND (0.010)	ND (0.0097)	ND (0.010)	ND (0.0098)	ND (0.0091)
4-Nitroaniline	mg/kg	-	-	-	ND (0.30)	ND (0.013)	ND (0.014)	ND (0.012)	ND (0.012)	ND (0.013)	ND (0.011)	ND (0.013)	ND (0.012)	ND (0.011)	ND (0.012)	ND (0.012)	ND (0.011)	ND (0.012)	ND (0.012)	ND (0.011)
Naphthalene	mg/kg	12	100	100	ND (0.27)	ND (0.0060)	ND (0.0069)	0.0319 J	ND (0.0058)	ND (0.0065)	ND (0.0054)	ND (0.0060)	ND (0.0056)	ND (0.0053)	0.089	ND (0.0056)	0.0186 J	ND (0.0056)	0.0352	ND (0.0051)
Nitrobenzene	mg/kg	-	3.7	15	ND (0.52)	ND (0.012)	ND (0.014)	ND (0.011)	ND (0.011)	ND (0.013)	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.010)	ND (0.012)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.010)
N-Nitroso-di-n-propylamine	mg/kg	-	-	-	ND (0.38)	ND (0.011)	ND (0.013)	ND (0.011)	ND (0.011)	ND (0.012)	ND (0.010)	ND (0.011)	ND (0.010)	ND (0.0098)	ND (0.011)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.0095)
N-Nitrosodiphenylamine	mg/kg	-			ND (0.21)	ND (0.020)	ND (0.023)	ND (0.019)	ND (0.019)	ND (0.021)	ND (0.018)	ND (0.020)	ND (0.018)	ND (0.017)	ND (0.020)	ND (0.019)	ND (0.018)	ND (0.019)	ND (0.018)	ND (0.017)
Phenanthrene	mg/kg	100	100	100	ND (0.19)	0.0222 J	0.173	0.441	ND (0.0040)	0.0235 J	ND (0.0038)	0.242	ND (0.0039)	ND (0.0036)	2.08	ND (0.0039)	0.421	ND (0.0039)	1.31	ND (0.0036)
Pyrene	mg/kg	100	100	100	ND (0.19)	0.0212 J	0.232	1.03	ND (0.0045)	0.0300 J	ND (0.0043)	0.449	ND (0.0043)	ND (0.0041)	2.37	ND (0.0044)	0.575	ND (0.0044)	2.01	ND (0.0040)
1,2,4,5-Tetrachlorobenzene	mg/kg	-	-	-	ND (0.44)	ND (0.0090)	ND (0.010)	ND (0.0085)	ND (0.0086)	ND (0.0097)	ND (0.0082)	ND (0.0090)	ND (0.0083)	ND (0.0079)	ND (0.0089)	ND (0.0085)	ND (0.0082)	ND (0.0084)	ND (0.0083)	ND (0.0077)

Shaded cells show detected compounds

Shaded cells indciate and exceedance of the regulatory limit

Table 1
Pesticides/PCBS/Metals in Soil

Client Sample ID:		NY SCO - Unrestricted Use (6 NYCRR 375-6 12/06)	NY SCO - Residential w/CP-51 (10/10) (6 NYCRR 375-6 12/06)	NY SCO - Restricted Residential w/CP-51 (10/10) (6 NYCRR 375-6 12/06)	FB-1	SB-1 (0'-2')	SB-1 (2'-4')	SB-2 (0'-2')	SB-2 (2'-4')	SB-3 (0'-2')	SB-3 (12'-14')	SB-4 (0'-2')	SB-4 (12'-14')	SB-401 (12'-14')	SB-5 (0'-2')	SB-5 (12'-14')	SB-6 (0'-2')	SB-6 (12'-14')	SB-7 (0'-2')	SB-7 (12'-14')
Lab Sample ID:					JC7112-10	JC7278-1	JC7278-2	JC7278-3	JC7278-4	JC7278-5	JC7278-6	JC7112-5	JC7112-6	JC7112-7	JC7112-1	JC7112-2	JC7112-3	JC7112-4	JC7112-8	JC7112-9
Date Sampled:					10/26/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015
Matrix:					Field Blank	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
					Soil															
Pesticides in Soil																				
Aldrin	mg/kg	0.005	0.019	0.097	ND (0.0042)	ND (0.00066)	ND (0.00072)	ND (0.00063)	ND (0.00065)	ND (0.00069)	ND (0.00062)	ND (0.00067)	ND (0.00063)	ND (0.00061)	ND (0.00066)	ND (0.00064)	ND (0.00064)	ND (0.00063)	ND (0.00059)	ND (0.00059)
alpha-BHC	mg/kg	0.02	0.097	0.48	ND (0.0065)	ND (0.00049)	ND (0.00054)	ND (0.00047)	ND (0.00049)	ND (0.00051)	ND (0.00046)	ND (0.00050)	ND (0.00047)	ND (0.00046)	ND (0.00049)	ND (0.00048)	ND (0.00048)	ND (0.00047)	0.00069 [a]	ND (0.00044)
beta-BHC	mg/kg	0.036	0.072	0.36	ND (0.0086)	ND (0.00045)	ND (0.00050)	ND (0.00043)	ND (0.00045)	ND (0.00047)	ND (0.00043)	ND (0.00046)	ND (0.00044)	ND (0.00042)	ND (0.00046)	ND (0.00044)	ND (0.00044)	ND (0.00044)	ND (0.00041)	ND (0.00041)
delta-BHC	mg/kg	0.04	100	100	ND (0.0064)	ND (0.00029)	ND (0.00032)	ND (0.00028)	ND (0.00029)	ND (0.00030)	ND (0.00027)	ND (0.00030)	ND (0.00028)	ND (0.00027)	ND (0.00029)	ND (0.00028)	ND (0.00028)	ND (0.00028)	0.00094 [a]	ND (0.00026)
gamma-BHC (Lindane)	mg/kg	0.1	0.28	1.3	ND (0.0052)	ND (0.00034)	ND (0.00037)	ND (0.00032)	ND (0.00033)	ND (0.00035)	ND (0.00032)	ND (0.00034)	ND (0.00032)	ND (0.00031)	ND (0.00034)	ND (0.00033)	ND (0.00032)	ND (0.00032)	ND (0.00030)	ND (0.00030)
alpha-Chlordane	mg/kg	0.094	0.91	4.2	ND (0.0061)	ND (0.00039)	ND (0.00043)	ND (0.00038)	ND (0.00039)	ND (0.00041)	ND (0.00037)	0.0131 [a]	ND (0.00038)	ND (0.00036)	ND (0.00039)	ND (0.00038)	ND (0.00038)	ND (0.00038)	0.0113 [a]	ND (0.00035)
gamma-Chlordane	mg/kg	-	0.54		ND (0.0050)	ND (0.00056)	ND (0.00062)	ND (0.00054)	ND (0.00056)	ND (0.00059)	ND (0.00053)	0.010 [a]	ND (0.00054)	ND (0.00052)	ND (0.00056)	ND (0.00055)	ND (0.00054)	ND (0.00054)	0.0069 [a]	ND (0.00050)
Dieldrin	mg/kg	0.005	0.039	0.2	ND (0.0050)	ND (0.00058)	ND (0.00063)	ND (0.00055)	ND (0.00057)	ND (0.00060)	ND (0.00054)	**0.0092**	ND (0.00055)	ND (0.00053)	ND (0.00058)	ND (0.00056)	0.0016	ND (0.00055)	**0.0076** [a]	ND (0.00052)
4,4'-DDD	mg/kg	0.0033	2.6	13	ND (0.0065)	ND (0.00027)	ND (0.00030)	ND (0.00026)	ND (0.00027)	ND (0.00028)	ND (0.00026)	ND (0.00028)	ND (0.00026)	ND (0.00025)	ND (0.00027)	ND (0.00027)	ND (0.00026)	ND (0.00026)	**0.0038**	ND (0.00024)
4,4'-DDE	mg/kg	0.0033	1.8	8.9	ND (0.0061)	ND (0.00025)	ND (0.00027)	ND (0.00023)	ND (0.00024)	ND (0.00026)	ND (0.00023)	ND (0.00025)	ND (0.00024)	ND (0.00023)	ND (0.00025)	ND (0.00024)	ND (0.00024)	ND (0.00024)	0.0016 [a]	ND (0.00022)
4,4'-DDT	mg/kg	0.0033	1.7	7.9	ND (0.0051)	ND (0.00028)	ND (0.00031)	0.0017	ND (0.00028)	ND (0.00029)	ND (0.00027)	**0.0049** [a]	ND (0.00027)	ND (0.00026)	**0.0041** [a]	ND (0.00027)	**0.0094** [a]	ND (0.00027)	**0.0369**	ND (0.00025)
Endrin	mg/kg	0.014	2.2	11	ND (0.0045)	ND (0.00026)	ND (0.00029)	ND (0.00025)	ND (0.00026)	ND (0.00027)	ND (0.00025)	ND (0.00027)	ND (0.00025)	ND (0.00024)	ND (0.00026)	ND (0.00025)	ND (0.00025)	ND (0.00025)	ND (0.00023)	ND (0.00023)
Endosulfan sulfate	mg/kg	2.4	4.8	24	ND (0.0073)	ND (0.00042)	ND (0.00046)	ND (0.00040)	ND (0.00042)	ND (0.00044)	ND (0.00039)	ND (0.00043)	ND (0.00040)	ND (0.00039)	ND (0.00042)	ND (0.00041)	ND (0.00041)	ND (0.00040)	0.0013 [a]	ND (0.00038)
Endrin aldehyde	mg/kg	-	-	-	ND (0.0073)	ND (0.00055)	ND (0.00060)	ND (0.00052)	ND (0.00054)	ND (0.00057)	ND (0.00052)	ND (0.00056)	ND (0.00053)	ND (0.00051)	ND (0.00055)	ND (0.00053)	ND (0.00053)	ND (0.00053)	ND (0.00049)	ND (0.00049)
Endrin ketone	mg/kg	2.4	4.8	24	ND (0.0047)	ND (0.00024)	ND (0.00027)	ND (0.00023)	ND (0.00024)	ND (0.00025)	ND (0.00023)	ND (0.00025)	ND (0.00023)	ND (0.00022)	ND (0.00024)	ND (0.00024)	ND (0.00023)	ND (0.00023)	ND (0.00022)	ND (0.00022)
Endosulfan-I	mg/kg	2.4	4.8	24	ND (0.0064)	ND (0.00070)	ND (0.00076)	ND (0.00067)	ND (0.00069)	ND (0.00073)	ND (0.00066)	ND (0.00071)	ND (0.00067)	ND (0.00065)	ND (0.00070)	ND (0.00068)	ND (0.00067)	ND (0.00067)	ND (0.00063)	ND (0.00063)
Endosulfan-II	mg/kg	0.042	0.42	2.1	ND (0.0066)	ND (0.00061)	ND (0.00066)	ND (0.00058)	ND (0.00060)	ND (0.00063)	ND (0.00057)	ND (0.00062)	ND (0.00058)	ND (0.00056)	ND (0.00061)	ND (0.00059)	ND (0.00059)	ND (0.00058)	ND (0.00055)	ND (0.00054)
Heptachlor	mg/kg	-	0.077		ND (0.0049)	ND (0.00030)	ND (0.00033)	ND (0.00029)	ND (0.00030)	ND (0.00032)	ND (0.00029)	ND (0.00031)	ND (0.00029)	ND (0.00028)	ND (0.00030)	ND (0.00030)	ND (0.00029)	ND (0.00029)	0.0037 [a]	ND (0.00027)
Heptachlor epoxide	mg/kg	-	100		ND (0.0082)	ND (0.00041)	ND (0.00045)	ND (0.00039)	ND (0.00041)	ND (0.00043)	ND (0.00039)	ND (0.00042)	ND (0.00039)	ND (0.00038)	ND (0.00041)	ND (0.00040)	ND (0.00040)	ND (0.00039)	ND (0.00037)	ND (0.00037)
Methoxychlor	mg/kg	-	-	-	ND (0.0072)	0.0048	ND (0.00042)	ND (0.00037)	ND (0.00038)	ND (0.00040)	ND (0.00036)	ND (0.00039)	ND (0.00037)	ND (0.00036)	ND (0.00039)	ND (0.00038)	ND (0.00037)	ND (0.00037)	ND (0.00035)	ND (0.00035)
Toxaphene	mg/kg	-	-	-	ND (0.15)	ND (0.013)	ND (0.014)	ND (0.012)	ND (0.013)	ND (0.013)	ND (0.012)	ND (0.013)	ND (0.012)	ND (0.012)	ND (0.013)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.011)
PCBs in Soil																				
Aroclor 1016	mg/kg	0.1	1	1	ND (2.0)	ND (0.012)	ND (0.013)	ND (0.011)	ND (0.012)	ND (0.012)	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.011)
Aroclor 1221	mg/kg	0.1	1	1	ND (3.1)	ND (0.022)	ND (0.024)	ND (0.021)	ND (0.022)	ND (0.023)	ND (0.020)	ND (0.022)	ND (0.021)	ND (0.020)	ND (0.022)	ND (0.021)	ND (0.021)	ND (0.021)	ND (0.020)	ND (0.019)
Aroclor 1232	mg/kg	0.1	1	1	ND (2.6)	ND (0.012)	ND (0.013)	ND (0.012)	ND (0.012)	ND (0.013)	ND (0.011)	ND (0.012)	ND (0.012)	ND (0.011)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.011)	ND (0.011)
Aroclor 1242	mg/kg	0.1	1	1	ND (2.1)	ND (0.017)	ND (0.018)	ND (0.016)	ND (0.017)	ND (0.017)	ND (0.016)	ND (0.017)	ND (0.016)	ND (0.015)	ND (0.017)	ND (0.016)	ND (0.016)	ND (0.016)	ND (0.015)	ND (0.015)
Aroclor 1248	mg/kg	0.1	1	1	ND (2.5)	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.010)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.010)	ND (0.010)
Aroclor 1254	mg/kg	0.1	1	1	ND (0.66)	ND (0.016)	ND (0.018)	ND (0.016)	ND (0.016)	ND (0.017)	ND (0.015)	ND (0.017)	ND (0.016)	ND (0.015)	ND (0.016)	ND (0.016)	ND (0.016)	ND (0.016)	**0.269**	ND (0.015)
Aroclor 1260	mg/kg	0.1	1	1	ND (1.5)	ND (0.016)	ND (0.017)	ND (0.015)	ND (0.015)	ND (0.016)	ND (0.015)	ND (0.016)	ND (0.015)	ND (0.014)	ND (0.016)	ND (0.015)	ND (0.015)	ND (0.015)	**0.227**	ND (0.014)
Aroclor 1268	mg/kg	0.1	1	1		ND (0.011)	ND (0.012)	ND (0.011)	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.010)	ND (0.010)
Aroclor 1262	mg/kg	0.1	1	1		ND (0.010)	ND (0.011)	ND (0.0099)	ND (0.010)	ND (0.011)	ND (0.0098)	ND (0.011)	ND (0.010)	ND (0.0096)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.0094)	ND (0.0093)
Metals in Soil																				
Aluminum	mg/kg	-			<200	8540	11200	4440	12600	13900	4030	10200	5110	5780	13000	5310	5860	6010	5850	4220
Antimony	mg/kg	-			<6.0	<2.3	<2.7	<2.2	<2.2	<2.4	<2.1	<2.3	<2.1	<2.1	<2.2	<2.3	<2.2	<2.2	<2.2	<2.0
Arsenic	mg/kg	13	16	16	<3.0	3.2	3.5	4	4	3.9	<2.1	6.1	<2.1	<2.1	5.5	<2.3	5.5	<2.2	5.5	<2.0
Barium	mg/kg	350	350	400	<200	52.3	58.2	39.7	45.3	80.7	21.4	113	28.3	40	97.6	24.4	86.2	27.9	62.3	<20
Beryllium	mg/kg	7.2	14	72	<1.0	0.36	0.55	0.26	0.56	0.78	0.25	0.3	0.32	0.31	0.51	0.31	0.25	0.4	0.23	0.25
Cadmium	mg/kg	2.5	2.5	4.3	<3.0	<0.57	<0.68	<0.54	<0.55	<0.60	<0.51	1.1	<0.52	<0.53	0.72	<0.57	0.65	<0.54	<0.54	<0.51
Calcium	mg/kg	-			7950	55600	3680	13500	1350	1840	942	17500	1210	1680	9270	799	56500	1350	41600	910
Chromium	mg/kg	-	-	-	<10	12.8	22.4	14.1	20.1	19.2	11.1	23.8	13.4	12.4	23.8	15	17	14.3	14.4	9.1
Cobalt	mg/kg	-	30		<50	<5.7	8.1	<5.4	8.4	6.8	<5.1	<5.7	<5.2	<5.3	7.3	<5.7	<5.4	<5.4	<5.4	<5.1
Copper	mg/kg	50	270	270	<10	13.4	18.9	15.1	28.1	12.5	6.6	40.3	12.6	13.6	**50.4**	10.7	45.4	10.8	27.1	6.8
Iron	mg/kg	-	2000		<100	**9560**	**20500**	**9600**	**23100**	**17300**	**7740**	**19500**	**16000**	**11900**	**20600**	**12500**	**10900**	**16200**	**10300**	**7640**
Lead	mg/kg	63	400	400	<3.0	**392**	51.2	**65.6**	13.5	40.1	3	**267**	3.9	3.8	**370**	4.2	**253**	4.6	**100**	2.7

Table 1
Pesticides/PCBS/Metals in Soil

Client Sample ID:		NY SCO - Unrestricted Use (6 NYCRR 375-6 12/06)	NY SCO - Residential w/CP-51 (10/10) (6 NYCRR 375-6 12/06)	NY SCO - Restricted Residential w/CP-51 (10/10) (6 NYCRR 375-6 12/06)	FB-1	SB-1 (0'-2')	SB-1 (2'-4')	SB-2 (0'-2')	SB-2 (2'-4')	SB-3 (0'-2')	SB-3 (12'-14')	SB-4 (0'-2')	SB-4 (12'-14')	SB-401 (12'-14')	SB-5 (0'-2')	SB-5 (12'-14')	SB-6 (0'-2')	SB-6 (12'-14')	SB-7 (0'-2')	SB-7 (12'-14')
Lab Sample ID:					JC7112-10	JC7278-1	JC7278-2	JC7278-3	JC7278-4	JC7278-5	JC7278-6	JC7112-5	JC7112-6	JC7112-7	JC7112-1	JC7112-2	JC7112-3	JC7112-4	JC7112-8	JC7112-9
Date Sampled:					10/26/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015
Matrix:					Field Blank Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Magnesium	mg/kg	-	-	-	18700	4540	2110	1170	2120	1900	1500	7380	1700	1860	2860	1850	7440	1720	11600	1460
Manganese	mg/kg	1600	2000	2000	62.6	226	556	274	336	539	203	168	198	162	332	177	268	389	180	243
Mercury	mg/kg	0.18	0.81	0.81	<0.20	**0.97**	**0.42**	**0.33**	<0.035	0.07	<0.032	**0.27**	0.038	<0.030	**0.44**	<0.033	**0.24**	<0.035	0.11	<0.029
Nickel	mg/kg	30	140	310	<10	9	14.5	8.2	12.8	15.5	11.9	23.5	9	10	17.7	9.9	16	12.3	11.7	11
Potassium	mg/kg	-	-	-	14200	<1100	<1400	<1100	1380	<1200	<1000	1110	<1000	<1100	1110	<1100	1110	<1100	<1100	<1000
Selenium	mg/kg	3.9	36	180	<10	<2.3	<2.7	<2.2	<2.2	<2.4	<2.1	<2.3	<2.1	<2.1	<2.2	<2.3	<2.2	<2.2	<2.2	<2.0
Silver	mg/kg	2	36	180	<10	<0.57	<0.68	<0.54	<0.55	<0.60	<0.51	0.79	<0.52	<0.53	<0.55	<0.57	0.81	<0.54	<0.54	<0.51
Sodium	mg/kg	-	-	-	17500	<1100	<1400	<1100	<1100	<1200	<1000	<1100	<1000	<1100	<1100	<1100	<1100	<1100	<1100	<1000
Thallium	mg/kg	-			<2.0	<1.1	<1.4	<1.1	<1.1	<1.2	<1.0	<1.1	<1.0	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.0
Vanadium	mg/kg	-	100		<50	18.8	31.4	14.6	28.6	28.3	12.3	35.5	21.1	22.9	33.7	21.2	26.9	24.9	29.9	11.7
Zinc	mg/kg	109	2200	10000	<20	29.4	40.5	29.3	34.3	36.6	15.3	**184**	18.1	19.3	**115**	32.3	**133**	20.4	80.8	13.3
General Chemistry																				
Solids, Percent	%	-	-	-		88.7	76.4	91.1	86.9	80.8	95.4	87.6	93.6	95.7	89.1	90.9	92.3	94.1	95.8	99.4

Shaded cells show detected compounds

Shaded cells indciate and exceedance of the regulatory limit

Table 2
Groundwater Analytical Data Summary

Client Sample ID:		NY TOGS Class	MW-4	MW-4	MW-3	MW-3	FB-1	FB-1	MW-201	MW-201	MW-2	MW-2	MW-1	MW-1	TRIP BLANK
Lab Sample ID:		GA GW Standards (NYSDEC 6/2004)[1]	JC12052-1	JC12052-1F	JC12052-2	JC12052-2F	JC12052-3	JC12052-3F	JC12052-4	JC12052-4F	JC12052-5	JC12052-5F	JC12052-6	JC12052-6F	JC12052-7
Date Sampled:			01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016
Matrix:			Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Field Blank Water	Field Blank Filtered	Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Trip Blank Water
GC/MS Volatiles (SW846 8260C)															
Acetone	ug/l	-	ND (3.3)	-	ND (3.3)	-	ND (3.3)	-	ND (3.3)	-	ND (3.3)	-	ND (0.93)	-	-
Benzene	ug/l	1	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	ND (1.4)	-	-
Bromochloromethane	ug/l	5	ND (0.37)	-	ND (0.37)	-	ND (0.37)	-	ND (0.37)	-	ND (0.37)	-	ND (1.3)	-	-
Bromodichloromethane	ug/l	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (1.3)	-	-
Bromoform	ug/l	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (1.1)	-	-
Bromomethane	ug/l	5	ND (0.42)	-	ND (0.42)	-	ND (0.42)	-	ND (0.42)	-	ND (0.42)	-	ND (0.87)	-	-
2-Butanone (MEK)	ug/l	-	ND (5.6)	-	ND (5.6)	-	ND (5.6)	-	ND (5.6)	-	ND (5.6)	-	ND (0.82)	-	-
Carbon disulfide	ug/l	60	ND (0.25)	-	ND (0.25)	-	ND (0.25)	-	ND (0.25)	-	ND (0.25)	-	ND (0.67)	-	-
Carbon tetrachloride	ug/l	5	ND (0.22)	-	ND (0.22)	-	ND (0.22)	-	ND (0.22)	-	ND (0.22)	-	ND (1.4)	-	-
Chlorobenzene	ug/l	5	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (1.1)	-	-
Chloroethane	ug/l	5	ND (0.34)	-	ND (0.34)	-	ND (0.34)	-	ND (0.34)	-	ND (0.34)	-	ND (1.4)	-	-
Chloroform	ug/l	7	3	-	4.2	-	ND (0.19)	-	2.1	-	2.3	-	ND (0.31)	-	-
Chloromethane	ug/l	5	ND (0.41)	-	ND (0.41)	-	ND (0.41)	-	ND (0.41)	-	ND (0.41)	-	ND (1.4)	-	-
Cyclohexane	ug/l	-	ND (0.28)	-	ND (0.28)	-	ND (0.28)	-	ND (0.28)	-	ND (0.28)	-	ND (1.5)	-	-
1,2-Dibromo-3-chloropropane	ug/l	0.04	ND (0.99)	-	ND (0.99)	-	ND (0.99)	-	ND (0.99)	-	ND (0.99)	-	ND (1.4)	-	-
Dibromochloromethane	ug/l	-	ND (0.15)	-	ND (0.15)	-	ND (0.15)	-	ND (0.15)	-	ND (0.15)	-	ND (0.29)	-	-
1,2-Dibromoethane	ug/l	0.0006	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.24)	-	-
1,2-Dichlorobenzene	ug/l	3	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (0.28)	-	-
1,3-Dichlorobenzene	ug/l	3	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.25)	-	-
1,4-Dichlorobenzene	ug/l	3	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.42)	-	-
Dichlorodifluoromethane	ug/l	5	ND (0.90)	-	ND (0.90)	-	ND (0.90)	-	ND (0.90)	-	ND (0.90)	-	ND (0.34)	-	-
1,1-Dichloroethane	ug/l	5	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.32)	-	-
1,2-Dichloroethane	ug/l	0.6	ND (0.18)	-	ND (0.18)	-	ND (0.18)	-	ND (0.18)	-	ND (0.18)	-	ND (0.33)	-	-
1,1-Dichloroethene	ug/l	5	ND (0.51)	-	1.1	-	ND (0.51)	-	0.57 J	-	0.53 J	-	ND (0.32)	-	-
cis-1,2-Dichloroethene	ug/l	5	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	0.51 J	-	0.61 J	-	ND (0.41)	-	-
trans-1,2-Dichloroethene	ug/l	5	ND (0.65)	-	ND (0.65)	-	ND (0.65)	-	ND (0.65)	-	ND (0.65)	-	ND (0.37)	-	-
1,2-Dichloropropane	ug/l	1	ND (0.39)	-	ND (0.39)	-	ND (0.39)	-	ND (0.39)	-	ND (0.39)	-	ND (0.37)	-	-
cis-1,3-Dichloropropene	ug/l	-	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.27)	-	-
trans-1,3-Dichloropropene	ug/l	-	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (0.26)	-	-
Ethylbenzene	ug/l	5	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.30)	-	-
Freon 113	ug/l	5	ND (0.52)	-	ND (0.52)	-	ND (0.52)	-	ND (0.52)	-	ND (0.52)	-	ND (0.23)	-	-
2-Hexanone	ug/l	-	ND (1.7)	-	ND (1.7)	-	ND (1.7)	-	ND (1.7)	-	ND (1.7)	-	ND (0.29)	-	-
Isopropylbenzene	ug/l	5	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.43)	-	-
Methyl Acetate	ug/l	-	ND (1.9)	-	ND (1.9)	-	ND (1.9)	-	ND (1.9)	-	ND (1.9)	-	ND (0.35)	-	-
Methylcyclohexane	ug/l	-	ND (0.22)	-	ND (0.22)	-	ND (0.22)	-	ND (0.22)	-	ND (0.22)	-	ND (0.26)	-	-
Methyl Tert Butyl Ether	ug/l	10	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	ND (0.34)	-	-
4-Methyl-2-pentanone(MIBK)	ug/l	-	ND (1.0)	-	ND (1.0)	-	ND (1.0)	-	ND (1.0)	-	ND (1.0)	-	ND (0.28)	-	-
Methylene chloride	ug/l	5	ND (0.73)	-	ND (0.73)	-	ND (0.73)	-	ND (0.73)	-	ND (0.73)	-	ND (0.27)	-	-
Styrene	ug/l	5	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.26)	-	-
1,1,2,2-Tetrachloroethane	ug/l	5	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.32)	-	-
Tetrachloroethene	ug/l	5	**64.7**	-	**30**	-	ND (0.40)	-	**57.2**	-	**58**	-	ND (0.53)	-	-
Toluene	ug/l	5	ND (0.16)	-	ND (0.16)	-	ND (0.16)	-	ND (0.16)	-	ND (0.16)	-	ND (0.72)	-	-
1,2,3-Trichlorobenzene	ug/l	5	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.37)	-	-
1,2,4-Trichlorobenzene	ug/l	5	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.27)	-	-
1,1,1-Trichloroethane	ug/l	5	0.31 J	-	0.80 J	-	ND (0.25)	-	0.74 J	-	0.64 J	-	ND (0.79)	-	-
1,1,2-Trichloroethane	ug/l	1	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.29)	-	-
Trichloroethene	ug/l	5	**5.8**	-	3.4	-	ND (0.22)	-	**9.2**	-	**8.7**	-	ND (0.24)	-	-
Trichlorofluoromethane	ug/l	5	ND (0.43)	-	ND (0.43)	-	ND (0.43)	-	ND (0.43)	-	ND (0.43)	-	ND (0.31)	-	-
Vinyl chloride	ug/l	2	ND (0.15)	-	ND (0.15)	-	ND (0.15)	-	ND (0.15)	-	ND (0.15)	-	1.5 J	-	-
m,p-Xylene	ug/l	-	ND (0.38)	-	ND (0.38)	-	ND (0.38)	-	ND (0.38)	-	ND (0.38)	-	ND (0.23)	-	-
o-Xylene	ug/l	5	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.29)	-	-
Xylene (total)	ug/l	5	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.42)	-	-
												-	ND (0.36)	-	-
GC/MS Semi-volatiles (SW846 8270D)												-	ND (0.29)	-	-
												-	ND (0.22)	-	-
2-Chlorophenol	ug/l	-	ND (0.94)	-	ND (0.96)	-	ND (0.93)	-	ND (0.93)	-	ND (0.93)	-	ND (0.38)	-	-
4-Chloro-3-methyl phenol	ug/l	-	ND (1.4)	-	ND (1.4)	-	ND (1.4)	-	ND (1.4)	-	ND (1.4)	-	ND (0.29)	-	-
2,4-Dichlorophenol	ug/l	1	ND (1.3)	-	ND (1.3)	-	ND (1.3)	-	ND (1.3)	-	ND (1.3)	-	ND (0.29)	-	-

Table 2
Groundwater Analytical Data Summary

Client Sample ID:		NY TOGS Class	MW-4	MW-4	MW-3	MW-3	FB-1	FB-1	MW-201	MW-201	MW-2	MW-2	MW-1	MW-1	TRIP BLANK
Lab Sample ID:		GA GW Standards	JC12052-1	JC12052-1F	JC12052-2	JC12052-2F	JC12052-3	JC12052-3F	JC12052-4	JC12052-4F	JC12052-5	JC12052-5F	JC12052-6	JC12052-6F	JC12052-7
Date Sampled:		(NYSDEC 6/2004)[1]	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016
Matrix:			Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Field Blank Water	Field Blank Filtered	Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Trip Blank Water
2,4-Dimethylphenol	ug/l	1	ND (1.3)	-	ND (1.3)	-	ND (1.3)	-	ND (1.3)	-	ND (1.3)	-	ND (0.21)	-	-
2,4-Dinitrophenol	ug/l	1	ND (1.1)	-	ND (1.1)	-	ND (1.1)	-	ND (1.1)	-	ND (1.1)	-	ND (0.24)	-	-
4,6-Dinitro-o-cresol	ug/l	-	ND (0.88)	-	ND (0.90)	-	ND (0.87)	-	ND (0.87)	-	ND (0.87)	-	ND (0.34)	-	-
2-Methylphenol	ug/l	-	ND (0.83)	-	ND (0.84)	-	ND (0.82)	-	ND (0.82)	-	ND (0.82)	-	ND (0.28)	-	-
3&4-Methylphenol	ug/l	-	ND (0.68)	-	ND (0.69)	-	ND (0.67)	-	ND (0.67)	-	ND (0.67)	-	ND (0.46)	-	-
2-Nitrophenol	ug/l	-	ND (1.4)	-	ND (1.5)	-	ND (1.4)	-	ND (1.4)	-	ND (1.4)	-	ND (0.31)	-	-
4-Nitrophenol	ug/l	-	ND (1.1)	-	ND (1.1)	-	ND (1.1)	-	ND (1.1)	-	ND (1.1)	-	ND (0.29)	-	-
Pentachlorophenol	ug/l	1	ND (1.5)	-	ND (1.5)	-	ND (1.4)	-	ND (1.4)	-	ND (1.4)	-	ND (0.23)	-	-
Phenol	ug/l	1	ND (0.32)	-	ND (0.32)	-	ND (0.31)	-	ND (0.31)	-	ND (0.31)	-	ND (0.34)	-	-
2,3,4,6-Tetrachlorophenol	ug/l	-	ND (1.4)	-	ND (1.5)	-	ND (1.4)	-	ND (1.4)	-	ND (1.4)	-	ND (0.36)	-	-
2,4,5-Trichlorophenol	ug/l	-	ND (1.5)	-	ND (1.5)	-	ND (1.5)	-	ND (1.5)	-	ND (1.5)	-	ND (1.5)	-	-
2,4,6-Trichlorophenol	ug/l	-	ND (1.5)	-	ND (1.5)	-	ND (1.4)	-	ND (1.4)	-	ND (1.4)	-	ND (1.4)	-	-
Acenaphthene	ug/l	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	-
Acenaphthylene	ug/l	-	ND (0.24)	-	ND (0.25)	-	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	-
Acetophenone	ug/l	-	ND (0.28)	-	ND (0.28)	-	ND (0.28)	-	ND (0.28)	-	ND (0.28)	-	ND (0.28)	-	-
Anthracene	ug/l	-	ND (0.25)	-	ND (0.25)	-	ND (0.25)	-	ND (0.25)	-	ND (0.25)	-	ND (0.25)	-	-
Atrazine	ug/l	7.5	ND (0.42)	-	ND (0.43)	-	ND (0.42)	-	ND (0.42)	-	ND (0.42)	-	ND (0.42)	-	-
Benzaldehyde	ug/l	-	ND (0.34)	-	ND (0.35)	-	ND (0.34)	-	ND (0.34)	-	ND (0.34)	-	ND (0.34)	-	-
Benzo(a)anthracene	ug/l	-	ND (0.32)	-	ND (0.32)	-	ND (0.32)	-	ND (0.32)	-	ND (0.32)	-	ND (0.32)	-	-
Benzo(a)pyrene	ug/l	ND	ND (0.34)	-	ND (0.34)	-	ND (0.33)	-	ND (0.33)	-	ND (0.33)	-	ND (0.33)	-	-
Benzo(b)fluoranthene	ug/l	-	ND (0.32)	-	ND (0.33)	-	ND (0.32)	-	ND (0.32)	-	ND (0.32)	-	ND (0.32)	-	-
Benzo(g,h,i)perylene	ug/l	-	ND (0.41)	-	ND (0.42)	-	ND (0.41)	-	ND (0.41)	-	ND (0.41)	-	ND (0.41)	-	-
Benzo(k)fluoranthene	ug/l	-	ND (0.37)	-	ND (0.38)	-	ND (0.37)	-	ND (0.37)	-	ND (0.37)	-	ND (0.37)	-	-
4-Bromophenyl phenyl ether	ug/l	-	ND (0.37)	-	ND (0.38)	-	ND (0.37)	-	ND (0.37)	-	ND (0.37)	-	ND (0.37)	-	-
Butyl benzyl phthalate	ug/l	-	ND (0.27)	-	ND (0.28)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	-
1,1'-Biphenyl	ug/l	5	ND (0.26)	-	ND (0.26)	-	ND (0.26)	-	ND (0.26)	-	ND (0.26)	-	ND (0.26)	-	-
2-Chloronaphthalene	ug/l	-	ND (0.30)	-	ND (0.31)	-	ND (0.30)	-	ND (0.30)	-	ND (0.30)	-	ND (0.30)	-	-
4-Chloroaniline	ug/l	5	ND (0.23)	-	ND (0.24)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	-
Carbazole	ug/l	-	ND (0.30)	-	ND (0.30)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	-
Caprolactam	ug/l	-	ND (0.43)	-	ND (0.44)	-	ND (0.43)	-	ND (0.43)	-	ND (0.43)	-	ND (0.43)	-	-
Chrysene	ug/l	-	ND (0.35)	-	ND (0.36)	-	ND (0.35)	-	ND (0.35)	-	ND (0.35)	-	ND (0.35)	-	-
bis(2-Chloroethoxy)methane	ug/l	5	ND (0.26)	-	ND (0.27)	-	ND (0.26)	-	ND (0.26)	-	ND (0.26)	-	ND (0.26)	-	-
bis(2-Chloroethyl)ether	ug/l	1	ND (0.35)	-	ND (0.35)	-	ND (0.34)	-	ND (0.34)	-	ND (0.34)	-	ND (0.34)	-	-
bis(2-Chloroisopropyl)ether	ug/l	5	ND (0.29)	-	ND (0.29)	-	ND (0.28)	-	ND (0.28)	-	ND (0.28)	-	ND (0.28)	-	-
4-Chlorophenyl phenyl ether	ug/l	-	ND (0.27)	-	ND (0.28)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	-
2,4-Dinitrotoluene	ug/l	5	ND (0.27)	-	ND (0.27)	-	ND (0.26)	-	ND (0.26)	-	ND (0.26)	-	ND (0.26)	-	-
2,6-Dinitrotoluene	ug/l	5	ND (0.33)	-	ND (0.33)	-	ND (0.32)	-	ND (0.32)	-	ND (0.32)	-	ND (0.32)	-	-
3,3'-Dichlorobenzidine	ug/l	5	ND (0.54)	-	ND (0.55)	-	ND (0.53)	-	ND (0.53)	-	ND (0.53)	-	ND (0.53)	-	-
1,4-Dioxane	ug/l	-	ND (0.73)	-	ND (0.74)	-	ND (0.72)	-	ND (0.72)	-	ND (0.72)	-	ND (0.72)	-	-
Dibenzo(a,h)anthracene	ug/l	-	ND (0.37)	-	ND (0.38)	-	ND (0.37)	-	ND (0.37)	-	ND (0.37)	-	ND (0.37)	-	-
Dibenzofuran	ug/l	-	ND (0.27)	-	ND (0.28)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	ND (0.27)	-	-
Di-n-butyl phthalate	ug/l	50	ND (0.79)	-	ND (0.81)	-	ND (0.79)	-	ND (0.79)	-	ND (0.79)	-	ND (0.79)	-	-
Di-n-octyl phthalate	ug/l	-	ND (0.29)	-	ND (0.30)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	-
Diethyl phthalate	ug/l	-	ND (0.25)	-	ND (0.25)	-	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	-
Dimethyl phthalate	ug/l	-	ND (0.32)	-	ND (0.32)	-	ND (0.31)	-	ND (0.31)	-	ND (0.31)	-	ND (0.31)	-	-
bis(2-Ethylhexyl)phthalate	ug/l	5	ND (0.78)	-	1.4 J	-	ND (0.77)	-	ND (0.77)	-	3.8	-	1.5 J	-	-
Fluoranthene	ug/l	-	ND (0.23)	-	ND (0.24)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	-
Fluorene	ug/l	-	ND (0.30)	-	ND (0.30)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	-
Hexachlorobenzene	ug/l	0.04	ND (0.43)	-	ND (0.44)	-	ND (0.42)	-	ND (0.42)	-	ND (0.42)	-	ND (0.42)	-	-
Hexachlorobutadiene	ug/l	0.5	ND (0.37)	-	ND (0.38)	-	ND (0.36)	-	ND (0.36)	-	ND (0.36)	-	ND (0.36)	-	-
Hexachlorocyclopentadiene	ug/l	5	ND (0.30)	-	ND (0.30)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	-
Hexachloroethane	ug/l	5	ND (0.22)	-	ND (0.23)	-	ND (0.22)	-	ND (0.22)	-	ND (0.22)	-	ND (0.22)	-	-
Indeno(1,2,3-cd)pyrene	ug/l	-	ND (0.39)	-	ND (0.40)	-	ND (0.38)	-	ND (0.38)	-	ND (0.38)	-	ND (0.38)	-	-
Isophorone	ug/l	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	-
2-Methylnaphthalene	ug/l	-	ND (0.29)	-	ND (0.30)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	-
2-Nitroaniline	ug/l	5	ND (0.21)	-	ND (0.22)	-	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	ND (0.21)	-	-
3-Nitroaniline	ug/l	5	ND (0.24)	-	ND (0.25)	-	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	ND (0.24)	-	-
4-Nitroaniline	ug/l	5	ND (0.35)	-	ND (0.35)	-	ND (0.34)	-	ND (0.34)	-	ND (0.34)	-	ND (0.34)	-	-
Naphthalene	ug/l	-	ND (0.29)	-	ND (0.29)	-	ND (0.28)	-	ND (0.28)	-	ND (0.28)	-	ND (0.28)	-	-
Nitrobenzene	ug/l	0.4	ND (0.47)	-	ND (0.48)	-	ND (0.46)	-	ND (0.46)	-	ND (0.46)	-	ND (0.46)	-	-
N-Nitroso-di-n-propylamine	ug/l	-	ND (0.32)	-	ND (0.32)	-	ND (0.31)	-	ND (0.31)	-	ND (0.31)	-	ND (0.31)	-	-
N-Nitrosodiphenylamine	ug/l	-	ND (0.30)	-	ND (0.30)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	ND (0.29)	-	-
Phenanthrene	ug/l	-	ND (0.23)	-	ND (0.24)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	ND (0.23)	-	-

Table 2
Groundwater Analytical Data Summary

Client Sample ID:		NY TOGS Class	MW-4	MW-4	MW-3	MW-3	FB-1	FB-1	MW-201	MW-201	MW-2	MW-2	MW-1	MW-1	TRIP BLANK
Lab Sample ID:		GA GW Standards (NYSDEC 6/2004)[1]	JC12052-1	JC12052-1F	JC12052-2	JC12052-2F	JC12052-3	JC12052-3F	JC12052-4	JC12052-4F	JC12052-5	JC12052-5F	JC12052-6	JC12052-6F	JC12052-7
Date Sampled:			01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016
Matrix:			Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Field Blank Water	Field Blank Filtered	Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Trip Blank Water
Pyrene	ug/l	-	ND (0.34)	-	ND (0.35)	-	ND (0.34)	-	ND (0.34)	-	ND (0.34)	-	ND (0.34)	-	-
1,2,4,5-Tetrachlorobenzene	ug/l	5	ND (0.37)	-	ND (0.37)	-	ND (0.36)	-	ND (0.36)	-	ND (0.36)	-	ND (0.36)	-	-
GC Semi-volatiles (SW846 8081B)															
Aldrin	ug/l	ND	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	-
alpha-BHC	ug/l	0.01	ND (0.0023)	-	ND (0.0023)	-	ND (0.0023)	-	ND (0.0023)	-	ND (0.0023)	-	ND (0.0023)	-	-
beta-BHC	ug/l	0.04	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	-
delta-BHC	ug/l	0.04	ND (0.0032)	-	ND (0.0032)	-	ND (0.0032)	-	ND (0.0032)	-	ND (0.0032)	-	ND (0.0032)	-	-
gamma-BHC (Lindane)	ug/l	0.05	ND (0.0028)	-	ND (0.0028)	-	ND (0.0028)	-	ND (0.0028)	-	ND (0.0028)	-	ND (0.0028)	-	-
alpha-Chlordane	ug/l	-	ND (0.0025)	-	ND (0.0025)	-	ND (0.0025)	-	ND (0.0025)	-	ND (0.0025)	-	ND (0.0025)	-	-
gamma-Chlordane	ug/l	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	-
Dieldrin	ug/l	0.004	ND (0.0020)	-	ND (0.0020)	-	ND (0.0020)	-	ND (0.0020)	-	ND (0.0020)	-	ND (0.0020)	-	-
4,4'-DDD	ug/l	0.3	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	-
4,4'-DDE	ug/l	0.2	ND (0.0027)	-	ND (0.0027)	-	ND (0.0027)	-	ND (0.0027)	-	ND (0.0027)	-	ND (0.0027)	-	-
4,4'-DDT	ug/l	0.2	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	-
Endrin	ug/l	ND	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	-
Endosulfan sulfate	ug/l	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	-
Endrin aldehyde	ug/l	5	ND (0.0032)	-	ND (0.0032)	-	ND (0.0032)	-	ND (0.0032)	-	ND (0.0032)	-	ND (0.0032)	-	-
Endrin ketone	ug/l	5	ND (0.0023)	-	ND (0.0023)	-	ND (0.0023)	-	ND (0.0023)	-	ND (0.0023)	-	ND (0.0023)	-	-
Endosulfan-I	ug/l	-	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	-
Endosulfan-II	ug/l	-	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	-
Heptachlor	ug/l	0.04	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	ND (0.0029)	-	-
Heptachlor epoxide	ug/l	0.03	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	ND (0.0026)	-	-
Methoxychlor	ug/l	35	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	ND (0.0022)	-	-
Toxaphene	ug/l	0.06	ND (0.088)	-	ND (0.088)	-	ND (0.088)	-	ND (0.088)	-	ND (0.088)	-	ND (0.088)	-	-
GC Semi-volatiles (SW846 8082A)															
Aroclor 1016	ug/l	0.09	ND (0.12)	-	ND (0.12)	-	ND (0.12)	-	ND (0.12)	-	ND (0.12)	-	ND (0.12)	-	-
Aroclor 1221	ug/l	0.09	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	ND (0.19)	-	-
Aroclor 1232	ug/l	0.09	ND (0.16)	-	ND (0.16)	-	ND (0.16)	-	ND (0.16)	-	ND (0.16)	-	ND (0.16)	-	-
Aroclor 1242	ug/l	0.09	ND (0.13)	-	ND (0.13)	-	ND (0.13)	-	ND (0.13)	-	ND (0.13)	-	ND (0.13)	-	-
Aroclor 1248	ug/l	0.09	ND (0.15)	-	ND (0.15)	-	ND (0.15)	-	ND (0.15)	-	ND (0.15)	-	ND (0.15)	-	-
Aroclor 1254	ug/l	0.09	ND (0.040)	-	ND (0.040)	-	ND (0.040)	-	ND (0.040)	-	ND (0.040)	-	ND (0.040)	-	-
Aroclor 1260	ug/l	0.09	ND (0.092)	-	ND (0.092)	-	ND (0.092)	-	ND (0.092)	-	ND (0.092)	-	ND (0.092)	-	-
Aroclor 1268	ug/l	0.09	ND (0.074)	-	ND (0.074)	-	ND (0.074)	-	ND (0.074)	-	ND (0.074)	-	ND (0.074)	-	-
Aroclor 1262	ug/l	0.09	ND (0.12)	-	ND (0.12)	-	ND (0.12)	-	ND (0.12)	-	ND (0.12)	-	ND (0.12)	-	-
Metals Analysis															
Aluminum	ug/l	-	622	<200	4120	<200	<200	<200	1000	<200	1480	<200	988	<200	-
Antimony	ug/l	3	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	-
Arsenic	ug/l	25	8	3.7	7.9	4.2	<3.0	<3.0	4.3	5.2	6.1	3.9	5.4	4.8	-
Barium	ug/l	1000	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	-
Beryllium	ug/l	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
Cadmium	ug/l	5	3.4	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	-
Calcium	ug/l	-	78700	76200	53700	49800	<5000	<5000	66000	63400	64500	60800	71000	72000	-
Chromium	ug/l	50	<10	<10	13.6	<10	<10	<10	<10	<10	<10	<10	<10	<10	-
Cobalt	ug/l	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-
Copper	ug/l	200	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-
Iron	ug/l	300	**1010**	<100	**5930**	<100	<100	<100	**2340**	<100	**2890**	<100	**1740**	153	-
Lead	ug/l	25	5.5	<3.0	10.6	<3.0	<3.0	<3.0	6.2	<3.0	5.9	<3.0	4.4	<3.0	-
Magnesium	ug/l	-	25500	26100	12800	11900	<5000	<5000	21200	21700	21000	21100	27000	27600	-
Manganese	ug/l	300	**952**	**849**	**828**	**567**	<15	<15	239	136	234	130	**304**	290	-
Mercury	ug/l	0.7	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
Nickel	ug/l	100	10.9	<10	12.8	<10	<10	<10	<10	<10	<10	<10	<10	<10	-
Potassium	ug/l	-	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	-
Selenium	ug/l	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**12**	-
Silver	ug/l	50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-
Sodium	ug/l	20000	**124000**	**122000**	**48700**	**46100**	<10000	<10000	**105000**	**105000**	**105000**	**100000**	**71700**	**71700**	-
Thallium	ug/l	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-
Vanadium	ug/l	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-

Table 2

Groundwater Analytical Data Summary

Client Sample ID:		NY TOGS Class	MW-4	MW-4	MW-3	MW-3	FB-1	FB-1	MW-201	MW-201	MW-2	MW-2	MW-1	MW-1	TRIP BLANK
Lab Sample ID:		GA GW Standards (NYSDEC 6/2004)[1]	JC12052-1	JC12052-1F	JC12052-2	JC12052-2F	JC12052-3	JC12052-3F	JC12052-4	JC12052-4F	JC12052-5	JC12052-5F	JC12052-6	JC12052-6F	JC12052-7
Date Sampled:			01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016	01/05/2016
Matrix:			Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Field Blank Water	Field Blank Filtered	Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Ground Water	Groundwater Filtered	Trip Blank Water
Zinc	ug/l	-	<20	<20	23.8	<20	<20	<20	<20	<20	<20	<20	<20	<20	-

Regulatory limits listed in this document have been obtained from the latest version of the regulations cited and are used for advisory purposes only. Accutest assumes no responsibility for errors in regulatory documents or changes to criteria detailed in later versions of the referenced regulation. It is the responsibility of the user to verify these limits before using or reporting any data.

30 results exceeded regulatory criteria.

[1] NOTE: The above contain the following criteria that must be evaluated manually by the user:

Sum of Aldicarb and Methomyl at 0.35 ug/l.

Sum of Iron and Manganese at 500 ug/l.

Sum of Parathion and Methyl parathion at 1.5 ug/l.

Sum of Phenolic compounds (total phenols) at 1 ug/l.

Sum of Phenols, total chlorinated at 1 ug/l.

Sum of Phenols, total unchlorinated at 1 ug/l.

Principal organic contaminant at 5 ug/l defined as "any and every individual substance, whether listed in this Table or not, that is in one of the principal organic contaminant classes as defined in section 700.1 of this Title" unless listed elsewhere in this table.

Hit	**Exceed**

Table 3
Soil Vapor Analytical Summary

Client Sample ID:			SG-1	SG-2	SG-3	SG-4	SG-5	SG-6	SS-10	SS-11	SS-12	SS-13	SS-14
Lab Sample ID:			JC7272-4	JC7272-5	JC7272-6	JC7272-2	JC7272-1	JC7272-3	JC11091-1	JC11091-2	JC11091-5	JC11091-4	JC11091-3
Date Sampled:		NYS DOH	10/28/2015	10/28/2015	10/28/2015	10/28/2015	10/28/2015	10/28/2015	12/172015	12/172015	12/172015	12/172015	12/172015
Matrix:			Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.
GC/MS Volatiles (TO-15) - ug/m3													
Acetone	ug/m3		54.6	109	31.6	110	208	54.6					
1,3-Butadiene	ug/m3		ND (0.27)	ND (0.27)	ND (0.27)	ND (0.27)	ND (0.27)	ND (0.27)					
Benzene	ug/m3		2.1 J	2.7	2.6	5.1	24	4.8					
Bromodichloromethane	ug/m3		ND (0.87)	ND (0.87)	ND (0.87)	ND (0.87)	ND (0.87)	ND (0.87)					
Bromoform	ug/m3		ND (0.85)	ND (0.85)	ND (0.85)	ND (0.85)	ND (0.85)	ND (0.85)					
Bromomethane	ug/m3		ND (0.34)	ND (0.34)	ND (0.34)	ND (0.34)	ND (0.34)	ND (0.34)					
Bromoethene	ug/m3		ND (0.35)	ND (0.35)	ND (0.35)	ND (0.35)	ND (0.35)	ND (0.35)					
Benzyl Chloride	ug/m3		ND (0.52)	ND (0.52)	ND (0.52)	ND (0.52)	ND (0.52)	ND (0.52)					
Carbon disulfide	ug/m3		ND (0.34)	3.4	2.2 J	10	12	1.6 J					
Chlorobenzene	ug/m3		ND (0.60)	ND (0.60)	ND (0.60)	ND (0.60)	ND (0.60)	ND (0.60)					
Chloroethane	ug/m3		ND (0.23)	ND (0.23)	ND (0.23)	ND (0.23)	ND (0.23)	ND (0.23)					
Chloroform	ug/m3		34	59.1	14	ND (0.59)	ND (0.59)	ND (0.59)					
Chloromethane	ug/m3		ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)					
3-Chloropropene	ug/m3		ND (0.34)	ND (0.34)	ND (0.34)	ND (0.34)	ND (0.34)	ND (0.34)					
2-Chlorotoluene	ug/m3		ND (0.67)	ND (0.67)	ND (0.67)	ND (0.67)	ND (0.67)	ND (0.67)					
Carbon tetrachloride	ug/m3	5	2.6 J	2.6 J	ND (0.62)	ND (0.62)	ND (0.62)	ND (0.62)					
Cyclohexane	ug/m3		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)					
1,1-Dichloroethane	ug/m3		19	31	5.3	ND (0.49)	ND (0.49)	ND (0.49)					
1,1-Dichloroethylene	ug/m3		76.1	181	90.8	ND (0.44)	ND (0.44)	ND (0.44)					
1,2-Dibromoethane	ug/m3		ND (1.1)	5.3 J	ND (1.1)	43	ND (1.1)	ND (1.1)					
1,2-Dichloroethane	ug/m3		ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)					
1,2-Dichloropropane	ug/m3		ND (0.92)	ND (0.92)	ND (0.92)	ND (0.92)	ND (0.92)	ND (0.92)					
1,4-Dioxane	ug/m3		ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)					
Dichlorodifluoromethane	ug/m3		3.2 J	3.4 J	4	4.2	3.1 J	5.4					
Dibromochloromethane	ug/m3		ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)					
trans-1,2-Dichloroethylene	ug/m3		3.8	5.9	ND (0.32)	ND (0.32)	ND (0.32)	ND (0.32)					
cis-1,2-Dichloroethylene	ug/m3		101	233	12	ND (0.39)	ND (0.39)	ND (0.39)					
cis-1,3-Dichloropropene	ug/m3		ND (0.64)	ND (0.64)	ND (0.64)	ND (0.64)	ND (0.64)	ND (0.64)					
m-Dichlorobenzene	ug/m3		ND (0.66)	ND (0.66)	ND (0.66)	ND (0.66)	ND (0.66)	ND (0.66)					
o-Dichlorobenzene	ug/m3		ND (0.72)	ND (0.72)	ND (0.72)	ND (0.72)	ND (0.72)	ND (0.72)					
p-Dichlorobenzene	ug/m3		ND (0.46)	ND (0.46)	ND (0.46)	ND (0.46)	ND (0.46)	ND (0.46)					
trans-1,3-Dichloropropene	ug/m3		ND (0.37)	ND (0.37)	ND (0.37)	ND (0.37)	ND (0.37)	ND (0.37)					
Ethanol	ug/m3		40.3	33.2	14	14	14	9.6					
Ethylbenzene	ug/m3		ND (0.83)	3.0 J	6.9	2.1 J	6.1	1.7 J					
Ethyl Acetate	ug/m3		ND (0.90)	ND (0.90)	ND (0.90)	3.4	ND (0.90)	ND (0.90)					
4-Ethyltoluene	ug/m3		ND (0.43)	ND (0.43)	ND (0.43)	ND (0.43)	ND (0.43)	ND (0.43)					
Freon 113	ug/m3		ND (0.84)	ND (0.84)	ND (0.84)	ND (0.84)	ND (0.84)	ND (0.84)					
Freon 114	ug/m3		ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)					
Heptane	ug/m3		142	1.7 J	ND (0.49)	5.3	126	ND (0.49)					
Hexachlorobutadiene	ug/m3		ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)					
Hexane	ug/m3		3.9	3.3	3.9	11	277	2.1 J					
2-Hexanone	ug/m3		ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)					
Isopropyl Alcohol	ug/m3		3.9	3.2	1.7 J	2.7	2.9	1.8 J					
Methylene chloride	ug/m3		5.2	4.5	4.9	4.2	3.3	3.4					

Table 3
Soil Vapor Analytical Summary

Methyl ethyl ketone	ug/m3		3.8	20	2.9	16	49.3	5.6					
Methyl Isobutyl Ketone	ug/m3		ND (0.45)	6.6	2.1 J	ND (0.45)	ND (0.45)	ND (0.45)					
Methyl Tert Butyl Ether	ug/m3		ND (0.36)	ND (0.36)	8.7	ND (0.36)	ND (0.36)	ND (0.36)					
Methylmethacrylate	ug/m3		ND (0.49)	ND (0.49)	ND (0.49)	ND (0.49)	ND (0.49)	ND (0.49)					
Propylene	ug/m3		6.4	22.3	22	129	3990	4					
Styrene	ug/m3		ND (0.43)	ND (0.43)	ND (0.43)	ND (0.43)	ND (0.43)	ND (0.43)					
1,1,1-Trichloroethane	ug/m3	100	213	278	73.7	21	17	69.3	ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)
1,1,2,2-Tetrachloroethane	ug/m3		ND (0.82)	ND (0.82)	ND (0.82)	ND (0.82)	ND (0.82)	ND (0.82)					
1,1,2-Trichloroethane	ug/m3		ND (0.76)	ND (0.76)	ND (0.76)	ND (0.76)	ND (0.76)	ND (0.76)					
1,2,4-Trichlorobenzene	ug/m3		ND (1.3)	ND (1.3)	ND (1.3)	ND (1.3)	ND (1.3)	ND (1.3)					
1,2,4-Trimethylbenzene	ug/m3		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)					
1,3,5-Trimethylbenzene	ug/m3		ND (0.59)	ND (0.59)	ND (0.59)	ND (0.59)	ND (0.59)	ND (0.59)					
2,2,4-Trimethylpentane	ug/m3		377	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)					
Tertiary Butyl Alcohol	ug/m3		8.8	7.3	4.2	4.5	ND (0.61)	5.8					
Tetrachloroethylene	ug/m3	100	656	2870	739	85.4	55	142	ND (0.64)	7.3	5.8	0.75 J	2
Tetrahydrofuran	ug/m3		ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)					
Toluene	ug/m3		5.3	4.5	4.9	7.2	31	4.9					
Trichloroethylene	ug/m3	5	1980	3510	688	21	21	135	31	23	3.4	18	28
Trichlorofluoromethane	ug/m3		27	57.9	116	39	9.6	33					
Vinyl chloride	ug/m3		ND (0.33)	ND (0.33)	ND (0.33)	ND (0.33)	ND (0.33)	ND (0.33)					
Vinyl Acetate	ug/m3		ND (0.77)	ND (0.77)	ND (0.77)	ND (0.77)	ND (0.77)	ND (0.77)					
m,p-Xylene	ug/m3		3.0 J	11	26	6.1	13	4.3					
o-Xylene	ug/m3		ND (0.43)	4.3	15	2.5 J	4.8	1.7 J					
Xylenes (total)	ug/m3		3.0 J	15	41	8.7	18	6.1					

Shaded cells are contaminants of concern and where their results exceed the regulatory limit.

APPENDIX A

Proposed Development Plan

Applicant: LPC Development Group LLC
Address: 105 S. 5th Street, Brooklyn, NY 11249
Date: January 20, 2016
Section: II, 4

PROJECT DESCRIPTION

The project sponsor is seeking construction financing from the City of New York Department of Housing Preservation & Development (HPD) to facilitate the development of a mixed use commercial and affordable residential housing building on three adjacent and currently vacant, City owned properties (the "project site") in North Side – South Side neighborhood of the Brooklyn, Community District 1. HPD has received and will receive disposition approval from the project site from the City Council. The project site would be conveyed to the project sponsor at closing.

The project site is located at 99-101 South 5th Street aka 337 Berry Street (Block 2443; Lots 6, 37 & 41). The proposed project involves the demolition of an existing building and new construction of one 11-story building with a height 120' above ground level. In total, the planned development consists of a new 64,333 square foot building, including residential, retail, a roof garden for residents and a community facility. The project will be 100% affordable residential housing for families making no more than 60% of the area median income. The 55 apartments units will consist of (12) Studios, (15) 1BR's, (27) 2 BR's and (1) 3 BR. The ground floor will include frontage on South 5th Street with 4,221 square foot of retail space and a 1,139 square foot community facility. Areas of the property not improved by the building will be improved either with a paved, 14 space parking lot or landscaping.

The proposed development would help to address the continuing need for affordable housing in New York City. The Remedial Action Program would likely start in April or May of 2016 and the Certificate of Completion is anticipated October or November 2017.

APPENDIX B

Construction Health and Safety Plan

Project Name: 105 South 5th Street
Project Number: 2014074

EQUITY ENVIRONMENTAL ENGINEERING, LLC
227 Route 206, Building 1, Suite 6
Flanders, New Jersey 07836

SITE-SPECIFIC HEALTH AND SAFETY PLAN

Address: 105 South 5th Street Brooklyn, New York 11201

Plan Revisions

Number	Date	Initials
1	5/6/15	RLJ
2		
3		
4		

Faron Moser _____ _____
Site Supervisor (SS) Date

Robert Jackson _____ _____
Project Manager (PM) Date
Health and Safety Officer
Plan Preparer

Neha Gautam _____ _____
Alternate Health & Safety Officer Date

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Sampling Log
Heat Stress Monitoring Log
Daily Sign In/Sign Out
Daily Safety Meeting Log
Accident Injury Report
Vehicle Accident Report
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Introduction

This Site-Specific Health and Safety Plan (HASP) has been prepared by Equity Environmental Engineering, LLC (Equity) to summarize the work related health and safety hazards at the subject site (105 South 5th Street, Brooklyn, New York) and the requirements and procedures to protect its employees from them. This plan meets or exceeds the requirements of Occupational Safety and Health Administration (OSHA), 29 CFR 1910.120, for a site-specific health and safety plan.

This plan was designed to reduce the potential for occupational illness or injury resulting from working at this site. The purpose of the HASP is to inform Equity's employees of the health and safety risks present at this site, and the proper methods of protecting themselves from those risks. Each worker must be fully aware of the risks associated with the work to be accomplished, and be dedicated to completing that work safely.

Existing and potential hazards at this site have been identified. As new information becomes available, this HASP will be revised. Standard practices and procedures of industrial hygiene, occupational health, safety, and environmental protection are prescribed in this plan, which was prepared and reviewed by experienced professionals.

Equity employees who work on this site must read the HASP and sign the form included in this plan, to indicate that they understand the plan's contents, and agree to comply with its provisions. Anyone who cannot, or will not comply with this HASP will be excluded from on-site activities. Violations of this HASP or any applicable federal, state, or local health and safety regulations should be reported immediately to the Site Supervisor (SS), or to Equity's Health & Safety Officer (HSO).

This HASP will be readily available so workers can reference it when necessary.

Site Information

Location: 105 South 5th Street, Brooklyn, NY 11201

Current Site Information:

The subject property currently consists of a multi-story building located at 105 South 5th Street (Block 2443 /Lots 6, 37 and 41) in Brooklyn. This is an initial investigation of the subject property.

Location/Class: [X] Industrial [ ] Commercial [ ] Urban/Residential
[ ] Suburban [ ] Rural

Site Regulatory Status: [ ] CERCLA/SARA [ ] US EPA [ ] NYCDEP
[ ] NPL [ ] RCRA [ ] NJ ISRA
[X] Other (OER) [ ] Not Regulated

Operations or Tasks to be Performed, and Approximate Duration of Each:

1- **Subsurface geophysics survey**
2- **Installation and sampling of soil borings, soil-gas points and monitoring wells.**

Surrounding Population/Structures:

The area surrounding the subject property is mixed residential and commercial/industrial.

Site and Surrounding Topography:

The topography is generally flat.

Known or Suspected Pathways of Contaminant Dispersion:

None

Emergency Shower, Eyewash and First Aid Equipment Located at:

Eyewash and emergency shower will be available.

First aid provided by emergency services (911).

Personnel On-Site trained in First Aid:

1. N. Gautam
2. F. Moser
3. B. Jackson
4. P. Jaran
5.
6.
7.
8.

Emergency Medical Care

Hospital

Hospital Name: SUNY Downstate Medical Center Telephone #: 888-270-7869

Address: 450 Clarkson Ave, Brooklyn, NY 11203

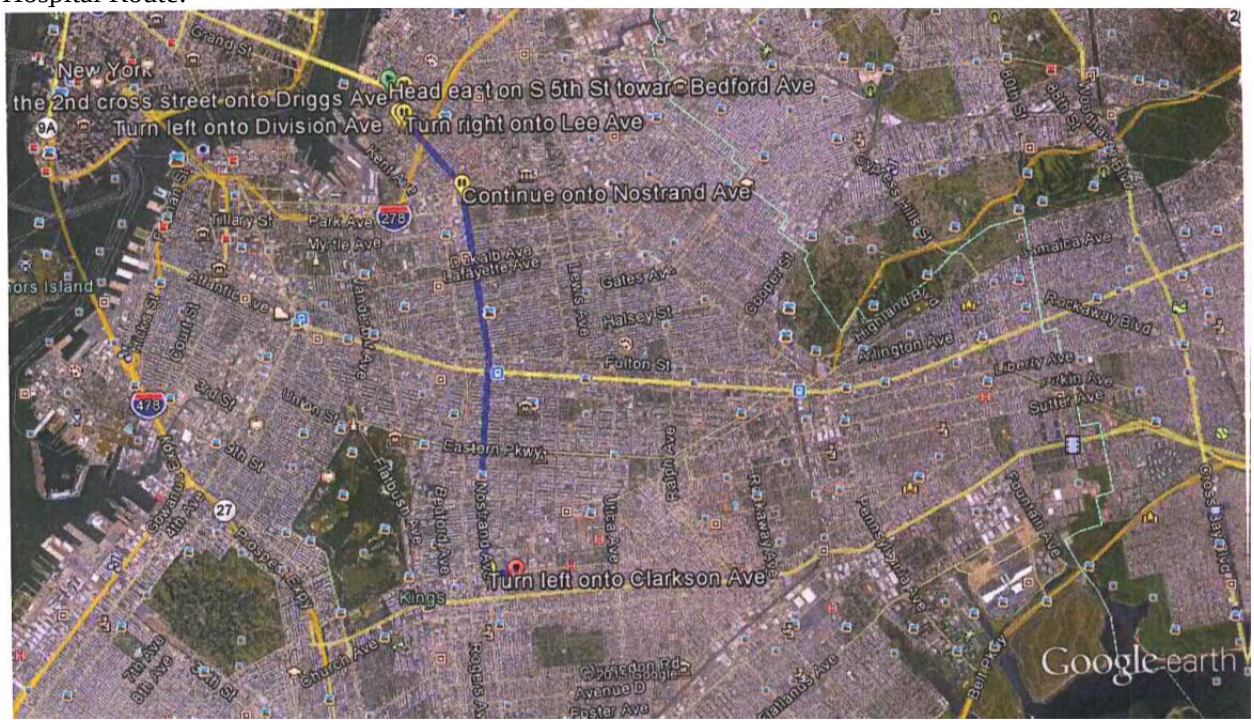
Contact: Operator Telephone #: 888-270-7869

Type of Service (X) Physical Trauma Only

( ) Physical Trauma and Chemical Exposure

( ) Available 24 Hours

Hospital Route:



1. Head east on S 5th St 0.1 mi
2. Turn right onto Driggs Ave 0.2 mi
3. Turn left onto Division Ave 0.2 mi
4. Turn right onto Lee Ave 0.7 mi
5. Continue onto Nostrand Ave 3.1 mi
6. Turn left onto Clarkson Ave – 0.2 mi

Hospital route information has been provided to satisfy OSHA requirements (29 CFR 1910.120). **However, where 911-emergency service and/or transport is available, Equity personnel are strictly prohibited from transporting accident victims in either company or personal vehicles.

Transporting the injured in non-emergency vehicles increases the potential for motor vehicle accidents during transit to the hospital and further injury to the victim. Also, the victims' condition can worsen during transit. As a result, transportation in non-emergency vehicles can delay or even prevent treatment by trained emergency personnel during a critical time. Employees must remain at the site of the accident, administer appropriate first aid, and await the arrival of **trained emergency and/or rescue personnel.**

Emergency Contacts

	Town	**Phone**
Fire Department	NYC	911
Police Department	NYC	911 / (212) 334-0611
Site Contact	Equity Personnel	(973) 641-0825
Site Telephone	Equity Personnel	(973) 641-0825
Nearest Telephone	Equity Personnel	TBD
First Aid/EMS	NYC	911
Federal Agency Representative	NA	NA
State Agency Representative	NA	NA
Local Agency Representative	NA	NA
Pesticide Poisoning	NA	(800) 845-7633
NY Poison Control Center	State-wide	(212) 764-7667
CHEM TREC	Washington, DC	(800) 424-9300
Utility	**Company Name**	**Phone**
Water Supply	NYC DEP	*
Sewer	NYC DEP	*
Power	Con Edison	*
Telephone	*	*
Gas	National Grid	*
NY One Call	NY	811

* NY One Call will supply this information

Equity Environmental Engineering LLC Emergency Contact List
Cell Phone Numbers

Peter Jaran	(973) 479-2381
Bob Jackson	(973) 641-0825
Faron Moser	(201) 341-1323
Neha Gautam	(201) 916-3416

Key Project Personnel

The following describes the project position assignments, associated responsibilities, and reporting relationships.

Position	Job Description	Interactions
Project Manager (PM)	Responsible for technical and administrative performance of the project. Supports Site Supervisor and is available to him at all times. Will visit the site periodically, or as necessary. Reports progress of project on a regular basis. Assigns key personnel, and identifies, requests, secures, and monitors use of resources for project. Approves program expenditures and invoices.	Reports directly to Managing Director. Works closely with Site Supervisor.
Site Supervisor (SS)	Acts as point of contact for client and client's representative(s). Supervises all on-site personnel and subcontractors. Coordinates daily site-specific work efforts, and ensures all activities are in strict compliance with site-specific health and safety plan. Has authority to suspend all work that possesses any health and safety risk. Briefs subordinate technical personnel on task requirements. Identifies and resolves technical problems. Provides periodic review of project progress.	Reports directly to Project Manager.
Health & Safety Officer (HSO)	Develops, implements, and enforces the on-site safety program. Oversees all health and safety aspects of project, conducts periodic audits to ensure compliance. Available at all times to discuss project progress and health and safety related issues.	Reports directly to Managing Director. Works closely with Project Manager, and Site Supervisor.
Onsite Health Physicist	Implementing the radiation safety at the Site with authorization to stop work due to unsafe acts, unsafe conditions, non-compliance and/or non-implementation of the Safety Plan and/or applicable safety and health requirements; performs the proper operation of radiation monitoring equipment; conducts radiation surveys; and notifies anomalies to the site supervisor.	Reports directly to Site Supervisor.

Equity is the entity responsible for managing health and safety for its employees at this site. Key project personnel are as follows:

Project Manager:	Robert Jackson	973-527-7451/974-641-0825
HSO	Name	Telephone / Cellular Number
Site Supervisor:	Faron Moser	973-527-7451/201-341-1323
	Name	Telephone / Cellular Number
Alternate SSO:	Neha Gautam	973-527-7451/201-916-3416
		Telephone / Cellular Number

Medical Surveillance and Training Dates for Authorized Personnel

Employee	Medical Exam	OSHA 8-Hr.	Site Supervisor Training	Respirator Fit Test
Bob Jackson	12/12/14	11/11/2013	9/27/2004	12/13/2012
Peter Jaran	12/16/14	11/11/2013		12/13/2012
Faron Moser	4/1/2014	1/28/2014		
Neha Gautam	3/4/2014	6/25/2013		

Task Identification

Tasks covered under this plan:

Task #	Description
1	Surface geophysics Survey
2	Installation of soil borings, soil-gas points and monitoring wells
3	Collection of soil, soil-gas and groundwater samples.

Off-site tasks planned? No

Describe:

Chemical Hazards

Task No.(s)	Chemical Name (or class)	PEL	TLV	Other Pertinent Limits (specify)	Primary Hazard			SDS Attached (Y/N)
					Ingestion	Dermal	Inhalation	
2, 3	Isobutylene (PID Calibration Gas)	250 ppm	250 ppm					Y

PEL – OSHA Permissible Exposure Limit: the maximum allowable 8-hour time weighted average (TWA) exposure concentration.
TLV – ACGIH Threshold Limit Value: the recommended 8-hour TWA exposure concentration.
STEL – ACGIH or OSHA Short-term Exposure Limit: the maximum allowable 15-minute TWA exposure concentration.
Ceiling – OSHA and Cal-OSHA Ceiling Limit: the maximum exposure concentration above, which an employee shall not be exposed during any period without respiratory protection.
IDLH – Immediately Dangerous to Life and Health: the concentration at which one could be exposed for 30 minutes without experiencing escape-impairing or irreversible health effects.

Physical and Biological Hazards

Hazard	Yes	No	Task No.(s)	Hazard	Yes	No	Task No.(s)
Electrical (overhead lines)		X	1,2,3	Uneven Terrain		X	
Electrical (underground lines)	X		1,2,3	Unstable Surfaces	X		1,2,3
Gas Lines	X		1,2,3	Elevated Surfaces		X	
Water Lines	X		1,2,3	Lightning	X		1,2,3
Drilling Equipment	X		1,2,3	Rain	X		1,2,3
Excavation Equipment	X		1,2,3	Snow	X		1,2,3
Power Tools	X		1,2,3	Liquefied/Pressurized Gases		X	
Heat Exposure	X		1,2,3	Lifting Equipment		X	
Cold Exposure	X		1,2,3	Vermin	X		1,2,3
Oxygen Deficiency		X		Insects	X		1,2,3
Confined Spaces		X		Disease-causing organisms	X		1,2,3
Noise	X		1,2,3	Others, e.g., marine sampling (specify)		X	
Ionizing Radiation		X					
Non-Ionizing Radiation		X					
Fire	X		1,2,3				
Explosive Atmospheres		X					
Shoring	X		1,2,3				
Scaffolding		X					
Holes/Ditches	X		1,2,3				
Steep Grades		X					
Slippery Surfaces	X		1,2,3				

Risk Analysis

Task #	Substance	Concentration (if known)	Risk*
1,2,3	Isobutylene (PID Calibration Gas)		1

*Risk
0 – No Risk
1 – Slight Risk
2 – Moderate Risk
3 – Dangerous Conditions/Caution
4 – High Risk
5 – Extremely Dangerous

General Safety Rules

1. If an employee must work alone, he/she must call his/her supervisor twice a day. If the supervisor is unavailable, that supervisor's supervisor must be contacted.

2. Workers must wear all personal protective equipment required for the tasks to be performed.

3. Horseplay or practical jokes are forbidden on the job.

4. Compressed air must not be used to blow dirt from clothing, or played with or blown at another person.

5. Drinking of alcoholic beverages or the use of drugs on the job is prohibited. Their use will cause immediate dismissal from the site.

6. All areas must be continually cleaned to maintain good housekeeping. Trash is to be piled neatly and removed promptly. All tools and work areas are to be kept in clean and safe condition.

7. Competent workers must do welding and cutting.

8. Ladders are to be of proper design and tied off while in use. Do not go up or down a ladder without the free use of both hands. Use a rope to lift or lower materials or tools. Always face a ladder when climbing or descending.

9. Every work site must have a complete first aid kit.

10. **ALL** accidents must be investigated and reported. Use the Accident Investigation Form in the back section of this plan.

11. Injuries sustained while on duty must be reported to supervisor immediately, or as soon as possible after injury is sustained.

12. Explosives must be handled and transported by licensed people only.

13. All tools and electrical equipment must be in proper working order.

14. Clothing appropriate to the duties performed shall be worn by all workers. Large pockets, loose jewelry, cuffed trousers and loose or torn clothing are dangerous and should not be worn around machinery, or when climbing ladders, or working on structures.

Heat Stress

Site employees will be trained to recognize signs of heat stress. The Site Supervisor will maintain a log of all site employees exposed to temperature extremes, showing the work and rest times as well as worker monitoring results. Appropriate rest periods will be provided to help site workers accommodate to temperature extremes.

Signs and Symptoms of Heat Stress

- **Heat rash** may result from continuous exposure to heat or humid air.
- **Heat cramps** are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include:
  - muscle spasms
  - pain in the hands, feet and abdomen
- **Heat exhaustion** occurs from increased stress on various body organs, including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms are:
  - pale, cool, moist skin
  - heavy sweating
  - dizziness
  - nausea
  - fainting
- **Heat stroke** is the most serious form of heat stress. Temperature regulation fails and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occurs. Competent medical help must be obtained. Signs and symptoms are:
  - red, hot, usually dry skin
  - lack of reduced perspiration
  - nausea
  - dizziness and confusion
  - strong, rapid pulse
  - coma

Measures to Avoid Heat Stress

- Establish work-rest cycles (short and frequent are more beneficial than long and seldom).
- Identify a shaded, cool rest area.
- Rotate personnel, alternate job functions.
- Water intake should be equal to the sweat produced. Most workers exposed to hot conditions drink less fluids than needed because of an insufficient thirst. DO NOT DEPEND ON THIRST TO SIGNAL WHEN AND HOW MUCH TO DRINK. For an 8-hour workday, 50 ounces of fluids should be drunk.
- Eat lightly salted foods or drink salted drinks such as Gatorade to replace lost salt.
- Save most strenuous tasks for non-peak hours, such as the early morning or at night.
- Avoid alcohol during prolonged periods of heat. Alcohol will cause additional dehydration.

Site personnel should monitor their pulse rate as an indicator of heat strain by the following method:

At the beginning of the rest period, count the radial pulse during a 30-second period. If the rate exceeds 110 beats per minute, lengthen the rest period by one-third. If the heart rate still exceeds 110 beats per minute at the end of the rest period, shorten the next work cycle by one-third.

Cold Stress

Equity will provide appropriate rest periods to help site workers accommodate to temperature extremes. Site employees will be trained to recognize signs of cold stress.

Measures to Avoid Cold Stress

- Wear multi-layer clothing (the outer most layer should be of wind-resistant fabric)
- Drink warm fluids
- Work in pairs
- Avoid heavy sweating

Cooling Power of Wind on Exposed Flesh Expressed as Equivalent Temperature (under calm conditions)*

Estimated Wind Speed (in mph)	Equivalent Chill Temperature (°F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-195
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
(Wind speeds greater than 40 mph have little additional effect).	LITTLE DANGER In <hr. with dry skin. Maximum danger of false sense of security.				INCREASING DANGER Danger from freezing of exposed flesh within one minute.				GREAT DANGER Flesh may freeze within 30 seconds.			
	Trench foot and immersion foot may occur at any point on this chart											

* Developed by U.S. Army Research Institute of Environmental Medicine, Natick, MA

The Site Supervisor will maintain a log of all site employees exposed to temperature extremes, showing the work and rest times as well as environmental monitoring results.

Employee Training Program

All personnel performing work in areas on this site covered by this HASP must have completed the appropriate training requirements specified in 29 CFR 1910.120(e). Each individual must have completed an 8-hour refresher-training course and/or initial 40-hour training course within the last two years prior to performing any intrusive work on this site covered by this HASP. Records that demonstrate that all persons subject to the training requirements have actually met them will be maintained either on site or in the project file. The Project Manager and/or Supervisor are responsible for verifying compliance of the project team with these rules.

Prior to commencement of on-site activities, a site safety meeting will be held to review the specific information and requirements of this HASP. HASP sign-off sheets will be collected at the end of this meeting.

Site Specific Training (when applicable) will include:

- Explanation of the overall site HASP.
- Health and safety personnel and organization.
- Brief site history.
- Special attention to signs and symptoms of overexposure to known and suspected site contaminants.
- Health effects of site contaminants.
- Air monitoring description.
- Physical hazards associated with the project.
- Selection, use and limitations of available safety.
- Personal hygiene and decontamination.
- Respirator face-piece fit testing.
- PPE use and maintenance.
- Site rules and regulations.
- Work zone establishment and markings.
- Site communication.
- Emergency preparedness procedures.
- Equipment decontamination.
- Medical monitoring procedures.
- Contingency plan.

Prior to work, each Equity employee will attend the contractor's health and safety orientation, if applicable. In addition, Equity's employees will review health and safety items specific to the tasks to be performed that were not covered in the contractor's orientation.

Site Health and Safety Meetings

In addition, the Site Supervisor will meet daily with all Equity employees prior to beginning work on site. The agenda of the meeting will include a review of important elements of this plan, any special safety items, and a discussion of the emergency response procedures. Also, everyone will agree on a schedule for periodic meetings, (for example, before beginning work each day), to review the effectiveness of this plan and make changes as necessary. If significant changes at the site occur, special meetings will be scheduled.

Training Records

The Site Supervisor will complete a report of the daily safety meetings, using the form in the back section of this plan, and all attending the meeting will sign the Daily Safety Meeting Log.

The training status of contractor and subcontractor employees will be verified that their training criteria meets the requirements specified in 29 CFR 1910.120(e). A copy of all training certificates will be kept for Equity personnel working at the site.

Personal Protective Equipment (PPE) Requirements

Task No.(s)	Level of Protection (A – D)*	Level of Upgrade	PPE Suit	PPE Gloves	PPE Feet	PPE Head	PPE Eye	PPE Ear	PPE Respirator	Additional PPE for Upgrade
1,2,3	D	NA	Std	N	Steel	HH	Glasses	Plugs	NA	

SUIT

Std = Standard Work Clothes
Tyvek = Uncoated Tyvek Disposal Coverall
PE Tyvek = Polyethylene-coated Tyvek
Saranex = Saranex-laminated Tyvek
PVC Suite = PVC Raingear

GLOVES

Work = Work Gloves (canvas, leather)
Neo = Neoprene Gloves
PVC = PVC Gloves
N = Nitrile Gloves
V = Vinyl Gloves
L = Latex Gloves

FEET

Steel = Steel-toe shoes or boots
Steel+ = Steel-toe shoes or boots & PVC boots
Booties = PVC booties

HEAD

HH = Hardhat

EYE

Glasses = Safety glasses
Goggles = Goggles
Shield = Face shield

EAR

Plugs = Earplugs
Muff = Ear muffs

RESPIRATOR

APR = Air purifying respirator
Full APR = Full face APR
Half APR = Half face APR
SAR = Airline supplied air respirator
SCBA = Self-contained breathing apparatus
Escape = Escape SCBA
OV = Organic Vapor Cartridge
AG = Acid Gas Cartridge
OV/AG = Organic Vapor/Acid Gas Cartridge
AM = Ammonia Cartridge
Dust/Mist = Dust/Mist pre-filter and cover for cartridge
HEPA = High efficiency particulate air filter cartridge

* For unspecified volatile organics (based on 1-minute breathing zone measurement using PID or OVA):

Up to 1 ppm above background	Level D
1 – 5 ppm above background	Level C
5 – 500 ppm above background	Level B
500 ppm above background	Level A

** Earplugs will be available on-site, but are not required

Suggested Levels of Protection

Level "D" Protection

1. Coveralls (optional)
2. Gloves
3. Boots/shoes – steel toe
4. Boots (outer) chemical resistant (disposable- if required)
5. Safety glasses or chemical splash goggles
6. Hard hat (safety shield if required)

Level "C" Protection

1. Full-face, air-purifying, canister-equipped respirator (NIOSH/MSHA approved)
2. Chemical resistant clothing (coveralls; hooded, two-piece, chemical splash suit; chemical resistant hood & apron; disposable, chemical-resistant coveralls)
3. Coveralls
4. Gloves (outer) chemical-resistant
5. Gloves (inner) chemical-resistant
6. Boots (outer) chemical-resistant
7. Boots (inner) steel toe
8. Hard hat (face shield)
9. Escape mask
10. Two-way radio

Level "B" Protection

1. Pressure/Demand SCBA (MSHA-NIOSH approved)
2. Chemical resistant clothing (overalls and long-sleeved jacket; coveralls; hooded, one- or two-piece chemical splash suite; disposable, chemical-resistant coveralls)
3. Coveralls
4. Gloves (outer) chemical-resistant
5. Gloves (inner) chemical-resistant
6. Boots (outer) chemical-resistant
7. Boots (inner) steel toe
8. Hard hat (face shield)
9. Two-way radio

Level "A" Protection (Equity does not perform work in Level A PPE)

1. Pressure/Demand SCBA (MSHA-NIOSH approved)
2. Fully encapsulating, chemical-resistant suit
3. Coveralls
4. Gloves (outer) chemical-resistant
5. Gloves (inner) chemical-resistant
6. Boots, chemical-resistant, steel toe (depending on suit construction, work over or under suit boot)
7. Hard hat (under suit)
8. Two-way radio

Medical Surveillance

Requirements

All Equity employees covered by this HASP, who engage in site activities governed by 29 CFR 1910.120 for 30 or more days per year, must meet the medical surveillance requirements specified in 1910.120(f). Therefore, such personnel must have completed occupational medical baseline or surveillance examination, performed by a licensed physician, within the last 24 months. The medical examination includes the following components:

- Personal Medical Questionnaire
- Occupational Exposure History
- Physical Examination
- Vision Testing
- Spirometry
- Audiometry
- Blood Chemistry Panel (e.g., SMAC-20)
- Complete Blood Count with Differential
- Urinalysis
- Chest X-Ray (every two years at a minimum)
- Electrocardiogram (at physician's discretion)

Examinations are required upon hiring, termination, and exposure to substances at or above the PEL.

Results of the examinations are communicated directly from the physician to the employee. Medical records for Equity's employees are kept by the Company and the employee

Monitoring Requirements

Monitoring is to be conducted by the Site Supervisor, or his/her designee. Copies of monitoring results and calibration logs will be filed with the HASP.

Monitoring is designed to assess exposure to employees during site activities, and to determine if PPE is required and adequate to assure protection. Because investigation and remediation activities at hazardous waste sites are of an inconsistent nature, it is not possible to assign a monitoring protocol that excludes, or is not directly dependent upon, professional judgment in determining when monitoring is required to assess exposure. Thus, the following generic protocol must be followed at a minimum, and should be modified to be more conservative (e.g., require more monitoring) if deemed necessary by the Site Supervisor or HSO. Under no conditions will the required frequency be decreased.

At a minimum, air monitoring will be conducted before and during each task or activities for which air monitoring has been designated. If airborne concentrations of contaminants reach action levels based on observations with the direct reading instruments, then the appropriate PPE upgrade or work stoppage order will be enforced by the Site Supervisor. In case a work stoppage order is given, the area must be cleared of all personnel immediately.

The use of action levels and the basis for the selection of monitoring equipment is explained as follows:

Action levels determine:

(1) the PPE to be used by site workers
(2) their ability to remain and work in the exclusion zone

The selection of the specified monitoring equipment is based on

(1) the nature of the contaminants
(2) the likely concentrations of the contaminants
(3) the probable duration of exposure
(4) the relative sensitivity of the monitoring equipment to the specific contaminants

The following summarizes the calibration requirements for the air monitoring instruments used at the site:

Instrument	Calibration Frequency
PID: Mini RAE-3000 (or equivalent)	Beginning of each work shift

Air Monitoring and Contaminant Action Levels

Task No.(s)	Location	Contaminant	Monitoring Equipment	Monitoring Frequency	Action Level Concentration	
					Mandatory Respirator Use	Mandatory Work Stoppage
1,2,3	Work Areas	Volatile Organic	PID: Mini-Rae	Periodically during all tasks/activities.	NA	10 ppm above background in breathing zone

PID = Photoionization Detector (e.g., Multi-Rae, Mini-Rae, HNU, TIP, OVM)
FID = Flame Ionization Detector (e.g., OVA)
LEL-O_2 = Explosivity and Oxygen Meter

Name(s) of individual(s) responsible for performing the monitoring, and certifying the results:
All Equity personnel

Type, make and model of instruments used: Mini-Rae 3000 (or equivalent) PID Gas Monitor

Method and frequency of calibration:

- 100 ppm isobutylene-calibration gas. Calibrated prior to each day's use according to manufacturer's instruction.
- The calibration of all radiation survey instrumentation will be conducted using calibration standards traceable to the National Bureau of Standards, All instruments used for surveys will be calibrated every six months and after instrument repair when required. All instrument calibrations will be performed by the original manufacturer or a qualified vendor. Instruments will be response checked to a known source of radiation prior to and after field use.

Procedures for Handling Anticipated Wastes

Waste Generation

Anticipated: Yes X No ____

Types: Liquid X Solid X Sludge _____ Gas _____

Quantity: Expected volume of each type: Field determined

This project ____ will X will not generate hazardous wastes. These wastes will be:
_____ stored _____ treated
__ transported ___ manifested in accordance with NYS and federal regulations.

Any soil and/or groundwater produced from sampling activities will remain onsite.

Packaging requirements for waste material:

Spill Prevention and Response

Potentially hazardous spill situations can be mitigated by using containment devices and materials in work areas. If site conditions are suitable, earthen berms will be constructed around specific areas. If site conditions are not suitable for this, or the potential spill is smaller, barriers will be constructed with sorbent materials such as "speedi-dry", sorbent booms and/or straw bales. Dikes and berms will also be used to divert stormwater run-on and run-off away from critical zones.

Because a spill cleanup must be conducted under crisis conditions, it is important that the methods used for dealing with a spill be thought out beforehand. However, the steps followed cannot be inflexible, because no two spills are identical. Factors that will be assessed in the event of any and all spills include:

1. The volume of the hazardous substance released and the rate of release.
2. The nature of the spill material.
3. What danger exists to personnel in the immediate area.
4. Nature of damage and possibilities of repair.
5. If the transfer of material to an alternate containment is advisable.
6. Feasibility of the construction of a containment dike.
7. Nature of spill area.
8. Whether the spilled substance has reached a watercourse or sewer.
9. Danger of explosion or fire.
10. Equipment and supplies necessary to confine the material and carry out the cleanup.

In most cases, the success of a cleanup operation is dependent upon the time it takes to contain the spill. Therefore, Equity's first attempt at spill containment will be at the point of discharge. This can often be accomplished by closing valves, reinforcing or repairing damaged containers, moving or changing the position of fallen or ruptured containers, or emptying the container by pumping to a temporary storage or holding vessel. Pumps, suction hoses and containers will be available to recover spilled materials when directed to do so by the Site Supervisor.

Handling and transport of drummed waste always must be conducted in a controlled and safe manner, which will minimize damage to structurally sound drums, repacks and overpacks. If leakage or spillage of waste occurs, the drum must immediately be placed within an overpack unit. Overpack units must be provided at each staging area, at areas of existing drums, and along all site roadways.

Task/Work Area	Potential Spill or Discharge	Equipment, Materials, and Procedures for Spill Cleanup
Soil excavation	Hydraulic fluid from drill rig	Pads/Speedy Dry

Emergency Procedures

Potential emergencies that may arise are most likely to be associated with physical hazards from heavy equipment operation and/or lifting and loading of debris. Emergency response will, in most cases, be performed in Level D protection.

Modifications to these emergency procedures may be necessary after the actual site set-up, based on prevailing conditions. Periodic reviews of these procedures will be performed by the Site Supervisor to ensure that they are appropriate for all anticipated emergencies.

Responsibilities

The Site Supervisor has the authority and responsibility to commit company resources to appropriately respond to an emergency, and to exclude all personnel not directly responding to the emergency.

Prior to beginning work at the site, Equity will designate an employee, usually the Site Supervisor, to be responsible for initiating any emergency response actions. In the event an injury or illness requires more than first aid treatment, the Site Supervisor (or alternate) will accompany the injured person to the hospital, and will remain with the person until release, admittance is decided, or another Equity staff relieves them of this responsibility.

Evacuation Plan

The basic elements of an emergency evacuation plan include employee training, escape routes, escape procedures, critical operations or equipment, rescue and medical duty assignments, designation of responsible parties, emergency reporting procedures and methods to account for all employees after evacuation.

When appropriate, wind direction will be discussed during the daily safety briefing to all on-site personnel by the Site Supervisor to indicate possible routes of upwind escape. Work-area entrance and exit routes will be planned, and emergency escape routes will be delineated by the Site Supervisor. The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated, will result in the evacuation of the team and a re-evaluation of the hazard and the level of protection required. This re-evaluation will be conducted by appropriate on-site health and safety personnel in coordination with the HSO

In the highly unlikely event that barrels, canisters, or chemical gases or vapors are uncovered during site work, the following procedures shall be followed:

1) In the event that barrels, canisters, or any other vessels are encountered during excavation, all work shall immediately cease and all workers to be removed from the area. The Site Supervisor shall be immediately notified, and he/she shall identify vessel contents, handling procedures and storage and disposal techniques prior to starting work.

2) In the event that high concentrations of gases or vapors are detected, the following actions will be taken:

    - Remove all workers from the area
    - Monitor gas or vapor concentrations to determine the type of respiratory protection that will be required before workers reenter the area.

3) In the highly unlikely event of a major leak of toxic gas, such as might occur if a compressed gas cylinder were ruptured during excavation or drilling, all on-site personnel will be evacuated to a safe distance. The HSO and Emergency services will be contacted immediately and the risk will be assessed prior to restarting work.

Training

Employees will be instructed in the specific aspects of emergency evaluation applicable to the site as part of the site safety meeting prior to the commencement of all on-site activities. On-site refresher or update training is required anytime escape routes or procedures are modified or personnel assignments are changed. During the site safety meeting, all employees will be trained in, and reminded of the location of this plan, the procedures outlined in this plan, and the communication systems and evacuation routes used during an emergency.

On a continuous basis, individual employees should be constantly alert for indicators of potentially hazardous situations, and for signs and symptoms in themselves and others that warn of hazardous conditions and exposures. Rapid recognition of dangerous situations can avert an emergency. In the event of any emergency that necessitates an evaluation of the site, on-site personnel will be notified by the use of car horns sounded in regularly spaced, repeated blasts, as detailed in the next section of this procedure. The Site Supervisor will control the site until the appropriate local or state agency representatives arrive, if required. He will also contact the HSO.

Alarm Systems Emergency Signals

The simplest and most effective emergency communication system, in any situation, is direct voice communications. Voice communications will be supplemented anytime voices cannot be clearly perceived above ambient noise levels (e.g., noise from heavy equipment, drilling rigs or backhoes0, and anytime a clear line-of-sight cannot be easily maintained among all site personnel because of distance, terrain, or other obstructions. When voice communications must be supplemented, the following emergency signals, using car horns, will be used.

- One Horn Blast: General Warning

One blast is used to signal relatively minor, but important events on site. An example would be a minor chemical spill where there is no immediate damage to life or health, yet personnel working on site should be aware of the situation so unnecessary problems are avoided. If one horn blast is sounded, personnel must stop all activity and equipment on site and await further instruction from the Site Supervisor.

- Two Horn Blasts: Medical Emergency

Two blasts are used to signal a medical emergency where immediate first aid or emergency medical care is required. If two horn blasts are sounded, all first aid and CPR trained personnel should respond, as appropriate. All other activity and equipment should stop, and personnel should await further instructions from the Site Supervisor.

- Three Horn Blasts Followed by One Continuous Blast: Immediate Danger to Life or Health

Three blasts followed by another extended or continuous horn blast signals a situation that could present an immediate danger to the life or health (IDLH) to all employees on site. Examples of possible IDLH situations could include fires, explosions, hazardous chemical spills or releases, hurricanes, tornadoes, blizzards or floods. If three horn blasts followed by a continuous blast are sounded, all activity and equipment must stop, and all personnel must evacuate the site to an appropriately designated site located outside the site gate, or further off site if necessary. (Note: unless otherwise specified, all decontamination procedures must be implemented.) All personnel must be accounted for by the Site Supervisor, and other response actions determined by the Site Supervisor must be followed.

Employees on site will use the "buddy" system (pairs). Buddies should pre-arrange hand signals or other means of emergency communication in case radios cannot be used, or if the radios no longer operate. The following had signals are suggested:

1. Hand gripping throat: out of air, can't breathe.
2. Grip partner's wrist or place both hands around waste: leave area immediately, no debate.
3. Hand on top of head: need assistance.
4. Thumbs up: OK, I'm alright, I understand.
5. Thumbs down: No, negative.

Visual contact will be maintained between employee pairs. Team members will remain in close proximity to each other in order to provide assistance in case of emergencies, and will inform each other of any of the following effects of exposure to site contamination:

- headaches
- dizziness
- blurred vision
- cramps
- irritation of eyes, skin or respiratory tract

If any member of the work crew experiences any adverse symptoms while on site, the entire work crew will immediately stop work and follow the instructions provided by the Site Supervisor.

Medical Treatment/First Aid

Community emergency services (EMS, fire, and police) will be notified immediately if their resources are needed on site. If necessary, the injured or sick party shall be taken to the nearest hospital.

Emergency Reporting

Any incident (other than minor first aid treatment) resulting in injury, illness or property damage will be reported to Equity. An incident investigation will be initiated as soon as emergency conditions are under control. The purpose of this investigation is not to attribute blame but to determine the pertinent facts so that repeat or similar occurrences can be avoided.

The investigations will begin while details are fresh in the mind of all involved. The person administering first aid may be able to start the fact gathering process if the injured are able to speak. Pertinent facts must be determined. Questions beginning with who, what, when, where, and how are usually most effective to discover ways to improve job performance in terms of efficiency, quality of work, as well as safety and health concerns.

On-Site Evacuation Plan –A series of repeated blasts is the signal for all Equity personnel and subcontractors to evacuate the site and assemble at:

To be determined at the beginning of each field event

The criteria for activating the alarm will be the first sign of any serious problem that requires assistance or evacuation. Should either a fire or explosion occur, all personnel will proceed immediately to the evacuation assembly point and await further instructions. At that time a personnel check will be conducted to determine if anyone is missing, and the local fire and police departments will be called for assistance. Once on site, the acting officer of the fire department and the Site Supervisor will determine if further evacuations are necessary. No Equity personnel will re-enter the site without clearance from the fire/police department and Site Supervisor. Subcontractor

Safety It has been and shall continue to be the policy of Equity that employees of all subcontractors are required to adhere to all applicable company, local, state, and federal safety rules and regulations.

When an infraction of a local, state, federal, or company safety regulation is observed, the Site Supervisor will request verbally that the subcontractor's supervisory personnel correct the infraction immediately. If correction is not made, then the project manager will request in writing that proper corrective action be taken. Subcontractors who continue to ignore proper safety procedures will have payments withheld until compliance is achieved or be terminated.

Subcontractors are required to hold safety meetings for their employees when they are working on Equity projects, and submit documentation of such meetings to the Project Manager. At a minimum they shall have specific safety procedures for proper use of all heavy equipment such as excavators, drilling rigs, etc., on site during the project. Subcontractor employees are required to attend Equity's safety meetings.

Forms

Job Safety & Health Protection

The Occupational Safety and Health Act of 1970 provides job safety and health protection for workers by promoting safe and healthful working conditions throughout the Nation. Provisions of the Act include the following:

Employers

All employers must furnish to employees' employment and a place of employment free from recognized hazards that are causing or are likely to cause death or serious harm to employees. Employers must comply with occupational safety and health standards issued under the Act.

Employees

Employees must comply with all occupational safety and health standards, rules, regulations and orders issued under the Act that apply to their own actions and conduct on the job.

The Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor has the primary responsibility for administering the Act. OSHA issues occupational salary and health standards, and its Compliance Safety and Health Officers conduct job site inspections to help ensure compliance with the Act.

Inspection

The Act requires that a representative of the employer and a representative authorized by the employees be given an opportunity to accompany the OSHA inspector for the purpose of aiding the inspection.

Complaint

Employees or their representatives have the right to file a complaint with the nearest OSHA office requesting an inspection. If they believe unsafe or unhealthful conditions exist in their workplace. OSHA will withhold, on request, names of employees complaining.

The Act provides that employees may not be discharged or discriminated against in any way for filing safety and health complaints or for otherwise exercising their rights under the Act.

Employees who believe they have been discriminated against may file a complaint with their nearest OSHA office within 30 days of the alleged discriminatory action.

Citation

If upon inspection OSHA believes an employer has violated the Act, a citation alleging such violations will be issued to the employer. Each citation will specify a time period with which the alleged violation must be corrected.

The OSHA citation must be prominently displayed at or near the place of alleged violation for three days, or until it is corrected, whichever is later, to warn employees of dangers that may exist there.

Proposed Penalty

The Act provides for mandatory penalties against employers of up to $1,000 for each serious violation and for optional penalties of up to $1,000 for each non-serious violation. Penalties of up to $1,000 per day may be proposed for failure to correct violations within the proposed time period. Also, any employer who willfully or repeatedly violates the Act may be assessed penalties of up to $10,000 for each such violation.

There are also provisions for central penalties. Any willful violation resulting in death of an employee, upon conviction, is punishable by a fine of up to $250,000 (or $500,000 if the employer is a corporation), or by imprisonment for up to six months or both. A second conviction of an employer doubles the possible term of imprisonment.

Voluntary Activity

While providing penalties for violation, the Act also encourages efforts by labor and management before an OSHA inspection, to reduce workplace hazards voluntarily and to develop and improve safety and health programs in all workplaces and industries. OSHA's Voluntary Protection Programs recognize outstanding efforts of this nature.

OSHA has published Safety and Health Program Management Guidelines to assist employers in establishing or perfecting programs to prevent or control employee exposure to workplace hazards. There are many public and private organizations that can provide information and assistance in this effort if requested. Also, your local OSHA office can provide considerable help and advice on saving safety and health problems or can refer you to other sources for help such as training.

Consultation

Free assistance in identifying and correcting hazards and in improving safety and health management is available to employers, without citation or penalty, through OSHA-supported programs in each State. These programs are usually administered by the State of Labor or Health Department or a State University.

Under provisions of Title 29, Code of Federal Regulations, part 1903.2(s)(1) employers must post this notice (or facsimile) in a conspicuous place where notices to employees are customarily posted.

HASP Sign-Off Form

INSTRUCTIONS: Site personnel are required to read, understand, and agree to the provision of the plan. Personnel are required to sign this form indicating agreement. The original of this form is maintained by the Project Manager, and becomes part of the permanent site project files upon completion of site work.

Site Name: South 5th Street

Location: 105 South 5th Street, Brooklyn, New York

Project Name and Number: 2014074

I have read, understand, and agree to comply with the provisions of this HASP for work activities on this site.

Name	Signature	Company/Agency	Date

Equipment Calibration Log

Operator Name:_____ Instrument Notice:_____

Signature:_____ Serial Number:_____

Date	Time	Concentration	Comments

Sampling Log

Operator Name:_____ Instrument Notice:_____

Signature:_____ Serial Number:_____

Was the equipment calibrated? _____ Yes _____ No

Date	Time	Concentration	Comments

Heat Stress Monitoring Log

Employee Name							
Start Time							
Measurement 1 Pulse Work Minutes Rest Minutes							
Measurement 2 Pulse Work Minutes Rest Minutes							
Measurement 3 Pulse Work Minutes Rest Minutes							
Measurement 4 Pulse Work Minutes Rest Minutes							
Measurement 5 Pulse Work Minutes Rest Minutes							
Measurement 6 Pulse Work Minutes Rest Minutes							
Measurement 7 Pulse Work Minutes Rest Minutes							
Measurement 8 Pulse Work Minutes Rest Minutes							

Signature of Site Supervisor (or designee) Date

Daily Sign In/Sign Out Form

(to be completed on site)

Site Name: South 5th Street

Location: South 5th St, Brooklyn, New York

Employee Name	Company Name	Purpose	Time In	Time Out	Date

Signature of Site Supervisor (or designee) Date

Daily Safety Meeting Log

(to be completed on site)

Site Name South 5th St.

Location South 5th St, Brooklyn, New York

Weather _____

Topics _____

_____

_____

_____

_____

_____

_____

Employee Names: Signatures

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Signature of Site Supervisor (or designee) Date

ACCIDENT INVESTIGATION REPORT

Place Accident Occurred:		Name of Person Involved:	
Site Location		Age / Sex	Job Title
		Yrs in This Job	Yrs with Company
Date & Time of Incident AM ___/___/_____:___ PM		Date & Time of Investigation AM ___/___/_____:___ PM	
Date Incident Reported ___/___/	Reported to Whom	Investigated By:	
Regulatory Agencies or Insurance Carriers Contacted:		Witness(es):	
Description from injured or witnesses (use reverse side of form for more space): Signature Date			

Select one or more in each column. Don't hesitate to write in your own words (continue on reverse side, if necessary).

When completing the following task:
- ☐Operating (what machine)_____
- ☐Using (what tool)_____
- ☐Handling (what material)_____
- ☐Maintenance or repair (of what)_____
- ☐Office or sales task_____
- ☐Other -- Provide details_____

The following occurred:
- ☐Amputation (total or partial)_____
- ☐Burn (thermal)_____
- ☐Burn (chemical)_____
- ☐Electric shock_____
- ☐Concussion/unconscious_____
- ☐Crushing injury (contusion, crush, bruise) -- intact skin_____
- ☐Cut, laceration, puncture, abrasion_____
- ☐Fracture or dislocation_____
- ☐Sprain/strain_____
- ☐Cumulative trauma_____
- ☐Occupational illness or disease_____
- ☐Internal injuries_____
- ☐None -- Near accident_____
- ☐Other -- Provide details_____
- ☐Respiratory_____

To the (explain details):
- ☐Head, face, neck_____
- ☐Eye_____
- ☐Trunk, abdomen_____
- ☐Back (upper, lower)_____
- ☐Arm, shoulder_____
- ☐Fingers_____
- ☐Leg, hip, knee_____
- ☐Ankle, foot_____
- ☐Toes_____
- ☐Internal Injuries_____
- ☐Body System:_____
- ☐Circulatory_____
- ☐Digestive_____
- ☐Musculoskeletal_____
- ☐Nervous_____
- ☐Other_____
- ☐Other (specify)_____

Person was, or got:
- ☐Struck against (not including falls)_____
- ☐Struck by_____
- ☐Fell from (from a higher level)_____
- ☐Slipped, tripped, fell on (in the same level)_____
- ☐Foreign body in eye_____
- ☐Contacted electrical energy from_____
- ☐Exposure to (substance)_____
  - from inhalation_____
  - ingestion_____
  - skin absorption_____
- ☐Vehicle accident_____
- ☐Caught in, under or between_____
- ☐Repetitive_____
- ☐Other_____

While (taking what position) Where (or What):
- ☐Carrying_____
- ☐Climbing_____
- ☐Bending_____
- ☐Driving_____
- ☐Jumping_____
- ☐Kneeling_____
- ☐Lifting - below waist, give weight)_____
- ☐Lifting - above waist, give weight)_____
- ☐Pulling_____
- ☐Pushing_____
- ☐Reaching or stretching_____
- ☐Riding_____
- ☐Running_____
- ☐Sitting_____
- ☐Standing_____
- ☐Throwing_____
- ☐Twisting or turning_____
- ☐Walking_____
- ☐Other_____

Medical Treatment (check as many as apply)
- ☐The injured employee was able to return to work the same day.
- ☐The injured employee was sent home
- ☐The injured employee was sent to a doctor/ clinic; list the doctor/clinic name, address, and phone:_____

_____

_____

_____

- ☐The employee was hospitalized.

List name and address of hospital:

_____

_____

_____

Attending physician:_____

_____

What conditions contributed
- ☐Awkward job procedure
- ☐Inadequate guard/safety device
- ☐Inadequate warning/labeling system
- ☐Fire/explosion hazard
- ☐Not secured against moving
- ☐Poor housekeeping
- ☐Protruding object
- ☐Close clearance/congestion
- ☐Hazardous arrangement/storage
- ☐Defective tools/equipment
- ☐Inadequate ventilation
- ☐Atmospheric condition: gases,

What unsafe procedures contributed
- ☐Operating without training/authority
- ☐Failure to follow proper procedure
- ☐Failure to secure
- ☐Operating at unsafe speed
- ☐Failure to warn/signal
- ☐Congestion
- ☐Used defective equipment
- ☐Used equipment improperly/unsafely
- ☐Improper loading or placement
- ☐Horseplay/distraction
- ☐Improper protective equipment
- ☐Improper lifting or carrying

The underlying causes of the incident are:
- ☐Unaware of job hazards
- ☐Inattention to hazard
- ☐Unaware of how to avoid incident
- ☐Not enough time to act
- ☐Person motivated to use unsafe procedure
- ☐Emotional/mental/physical stress
- ☐Equipment failed to perform as expected
- ☐Intoxicant/drugs
- ☐Failure to report/correct unsafe condition
- ☐Illness/medical condition
- ☐Work procedure not ergonomically correct
- ☐Substandard design

Classification (check as many as apply)
- ☐Fatality
- ☐Medical treatment other than First Aid
- ☐Occupation illness or disease
- ☐First Aid
- ☐Environmental Release
- ☐Property Damage
- ☐Near-accident

dusts, fumes, vapors
☐Repetitive motion
☐Illumination/noise hazard
☐Other

☐Taking unsafe or awkward position
☐Servicing moving equipment
☐Other

☐Other

ACCIDENT DESCRIPTION (continued):

What steps have already been taken to prevent similar incidents?_____

What else can be done (engineering controls, training, enforcement, process changes) to eliminate the hazard?_____

_____
Site Supervisor Signature Date

Health and Safety Review: Is proposed action appropriate? Yes ☐ No ☐ Comments_____

_____
HSO Signature Date

VEHICLE ACCIDENT REPORT

EMPLOYEE NAME:_____ DRV LIC NO.:_____

COMPANY ADDRESS:_____ INSURANCE COMPANY_____

POLICY NO.:_____

DESCRIPTION OF ACCIDENT

DATE:_____ TIME:_____ SPEED LIMIT_____:

LOCATION:_____

DIRECTION OF TRAVEL:_____

HOW DID IT HAPPEN?_____

_____

USE SPACE BELOW TO INDICATE VEHICLE PATHS - INDICATE NORTH BY ARROW

POLICE REPORT

NAME OF OFFICER: _____ BADGE #:_____

DEPARTMENT:_____ LOCATION:_____

SUMMONS ISSUED? Y [ ] N [ ] TO WHOM?_____

YOUR VEHICLE

YEAR/MAKE:_____ REGIST #:_____

DRIVEN BY:_____ AGE:____ TEL #:_____

ADDRESS:_____ CITY:_____ STATE:_____

NATURE OF DAMAGE:_____

OTHER DRIVER
(continue below for additional drivers and witnesses)

NAME:_____ DRV LIC NO.:_____

ADDRESS:_____ VEHICLE REGISTRATION:_____

_____ INSURANCE COMPANY_____

POLICY NO.:_____

Safety Data Sheets

SAFETY DATA SHEET

Isobutylene

Section 1. Identification

GHS product identifier : Isobutylene

Chemical name : 2-methylpropene

Other means of identification : 1-Propene, 2-methyl-; Isobutene; Isobutylene; 1-Propene, 2-methyl- (isobutene)

Product use : Synthetic/Analytical chemistry.

Synonym : 1-Propene, 2-methyl-; Isobutene; Isobutylene; 1-Propene, 2-methyl- (isobutene)

SDS # : 001031

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

Emergency telephone number (with hours of operation) : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE GASES - Category 1
GASES UNDER PRESSURE - Liquefied gas

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Extremely flammable gas.
Contains gas under pressure; may explode if heated.
May cause frostbite.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

Prevention : Never Put cylinders into unventilated areas of passenger vehicles. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use and store only outdoors or in a well ventilated place.

Response : Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage : Protect from sunlight. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Section 2. Hazards identification

Disposal : Not applicable.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : 2-methylpropene

Other means of identification : 1-Propene, 2-methyl-; Isobutene; Isobutylene; 1-Propene, 2-methyl- (isobutene)

CAS number/other identifiers

CAS number : 115-11-7

Product code : 001031

Ingredient name	%	CAS number
2-methylpropene	100	115-11-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Section 4. First aid measures

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
2-methylpropene	**ACGIH TLV (United States, 3/2012).** TWA: 250 ppm 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Liquefied compressed gas.]

Color : Colorless.

Molecular weight : 56.12 g/mole

Molecular formula : C4-H8

Boiling/condensation point : -6.9°C (19.6°F)

Melting/freezing point : -140.7°C (-221.3°F)

Critical temperature : 144.75°C (292.6°F)

Odor : Characteristic.

Odor threshold : Not available.

pH : Not available.

Flash point : Closed cup: -76.1°C (-105°F)

Burning time : Not applicable.

Burning rate : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.

Lower and upper explosive (flammable) limits : Lower: 1.8%
Upper: 9.6%

Section 9. Physical and chemical properties

Vapor pressure : 24.3 (psig)

Vapor density : 1.94 (Air = 1)

Specific Volume (ft ^{3}/lb) : 6.6845

Gas Density (lb/ft ^{3}) : 0.1496 (25°C / 77 to °F)

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : 0.263 g/l

Partition coefficient: n-octanol/water : 2.34

Auto-ignition temperature : 465°C (869°F)

Decomposition temperature : Not available.

SADT : Not available.

Viscosity : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatibility with various substances : Extremely reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-methylpropene	LC50 Inhalation Vapor	Rat	550000 mg/m³	4 hours

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Section 11. Toxicological information

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Section 11. Toxicological information

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
2-methylpropene	2.34	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1055	UN1055	UN1055	UN1055	UN1055
UN proper shipping name	ISOBUTYLENE	ISOBUTYLENE	ISOBUTYLENE	ISOBUTYLENE	ISOBUTYLENE
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 

Section 14. Transport information

Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	**Limited quantity** Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: Forbidden. **Cargo aircraft** Quantity limitation: 150 kg **Special provisions** 19, T50	**Explosive Limit and Limited Quantity Index** 0.125 **ERAP Index** 3000 **Passenger Carrying Ship Index** Forbidden **Passenger Carrying Road or Rail Index** Forbidden **Special provisions** 29	-	-	**Passenger and Cargo Aircraft** Quantity limitation: 0 Forbidden **Cargo Aircraft Only** Quantity limitation: 150 kg

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act (CAA) 112 regulated flammable substances: 2-methylpropene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Sudden release of pressure

Section 15. Regulatory information

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
2-methylpropene	100	Yes.	Yes.	No.	No.	No.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

Canada inventory : This material is listed or exempted.

International regulations

International lists : **Australia inventory (AICS)**: This material is listed or exempted.
China inventory (IECSC): This material is listed or exempted.
Japan inventory: This material is listed or exempted.
Korea inventory: This material is listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted.
Philippines inventory (PICCS): This material is listed or exempted.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

Canada

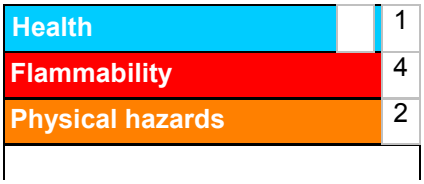
WHMIS (Canada) : Class A: Compressed gas.
Class B-1: Flammable gas.

CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.
Class B-1: Flammable gas.

Hazardous Material Information System (U.S.A.)



Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing : 10/15/2014.

Date of issue/Date of revision : 10/15/2014.

Date of previous issue : 10/6/2014.

Version : 0.02

Key to abbreviations :
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United NationsACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
CAS – Chemical Abstract Services
CEPA – Canadian Environmental Protection Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CFR – United States Code of Federal Regulations
CPR – Controlled Products Regulations
DSL – Domestic Substances List
GWP – Global Warming Potential
IARC – International Agency for Research on Cancer
ICAO – International Civil Aviation Organisation
Inh – Inhalation
LC – Lethal concentration
LD – Lethal dosage
NDSL – Non-Domestic Substances List
NIOSH – National Institute for Occupational Safety and Health

Section 16. Other information

TDG – Canadian Transportation of Dangerous Goods Act and Regulations
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act
WEEL – Workplace Environmental Exposure Level
WHMIS – Canadian Workplace Hazardous Material Information System

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

APPENDIX C

Sample of Non-Hazardous Soil Disposal Manifest

	NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Doc No.	2. Page 1 of 1	
GENERATOR	3. Generator's Name and Mailing Address 4. Generator's Phone (including area code)				
	5. Transporter 1 Company Name	6. US EPA ID Number		A. Transporter's Phone	
	7. Transporter 2 Company Name	8. US EPA ID Number		B. Transporter's Phone	
	9. Designated Facility Name and Site Address	10. US EPA ID Number		C. Facility's Phone	

	11. Waste Shipping Name and Description	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol
GENERATOR	a.				
	b.				
	c.				
	d.				

	D. Additional Descriptions for Materials Listed Above	E. Handling Codes for Wastes Listed Above
GENERATOR		

	15. Special Handling Instructions and Additional Information
GENERATOR	

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

	Printed/Typed Name	Signature	Month	Day	Year
GENERATOR					

	17. Transporter 1 Acknowledgement of Receipt of Materials				
TRANSPORTER	Printed/Typed Name	Signature	Month	Day	Year

	18. Transporter 2 Acknowledgement of Receipt of Materials				
TRANSPORTER	Printed/Typed Name	Signature	Month	Day	Year

	19. Discrepancy Indication Space
FACILITY	

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

	Printed/Typed Name	Signature	Month	Day	Year
FACILITY					

ORIGINAL - RETURN TO GENERATOR

APPENDIX D

Citizen Participation Plan

APPENDIX E

Cost Estimation (To be provided)

APPENDIX F

Significant Threat Determination

(To Be Provided)

APPENDIX G

Resumes

Peter Jaran, P.E., LSRP

equity environmental engineering

500 International Drive, Suite 150, Mount Olive, NJ 07828

Experience Summary

Mr. Jaran is a senior environmental engineer and project manager with 32 years of professional experience that includes site characterization and remediation, RCRA closure action, remedial design experience with soil, sediment and groundwater remediation and UST removal. Mr. Jaran has been a project manager on various types of engineering projects. He is fully familiar with Federal and State Environment Regulations and Guidance in the states of New Jersey, New York, Pennsylvania, Massachusetts, and Connecticut.

Years of Experience:

32 years

Education

B.S., Biology, 1980, State University College of Oneonta, New York.
M.S., Sanitary Engineering, 1984**,** Syracuse University, New York.

Special Training

40-hour OSHA Course
8-hour OSHA Refresher
First Aid/CPR

Registrations

Registered Professional Engineer: New York; License Number 066090

Registered Professional Engineer: New Jersey; License Number GE43335

Registered Professional Engineer: Alabama; License Number 27223-E

Subsurface Evaluator Certification: New Jersey, 2002, No. 0025125

NJDEP Clean Up Star Certification: New Jersey, 2004

NJDEP Unregulated Heating Oil Tank Certification: New Jersey 2007

NJDEP Licensed Site Remediation Professional No. 594628

Primary Experience

January 2004 – Present Equity Environmental Engineering, LLC. **Managing Director** Mr. Jaran's primary expertise is in site characterization and remediation, with secondary expertise in regulatory compliance and strategy development. Mr. Jaran manages projects for industrial, commercial, government and residential clients. The projects primarily involve strategy development, negotiations with regulatory agencies, implementation of work plans, reporting, design, construction of remedial systems, permitting, and operation and maintenance.

1999-January 2004 Parsons. **Principal Project Engineer**. Mr. Jaran managed projects for industrial and government clients while at Parsons. The type of projects included: Remedial Investigations, Remedial Design, Construction, Permitting, Remedial Activities, Land Use Management, Wetlands Delineation, and Environmental Studies. While at Parsons, he was the Program Manager for a Program addressing the investigation and remediation of a portfolio of sites contaminated with chromium.
Mr. Jaran was the Somerset Deputy Office Manager for 6 months and the Office Manager for 18 months. While in responsible charge, Mr. Jaran increased staff numbers from four to thirty staff.

1985-1999 CH2M HILL. While a member of CH2M HILL's Energy, Environment and Systems Group, Mr. Jaran gained professional experience with industry and both federal and state government agencies. He managed projects in the fields of hazardous materials and hazardous waste, solid waste, wastewater treatment, water supply, and flood control. He managed a staff of 20 professionals, where he had responsibility

for staffing, career development, workload, and performance review.

Mr. Jaran was the Client Service Manager for industrial clients with numerous sites in different regions of the country for eight years. He successfully managed over 80 remediation projects.

Mr. Jaran actively participated in site assessments including government and private client lead projects, environmental audits, aboveground tank system design, design of remedial treatment systems, remedial construction, Resource Conservation and Recovery Act (RCRA) Corrective Action Programs, SPCC Plan projects, and underground tank projects, including tests, removals, designs, and installations. He was a project manager on various site characterization and remediation (SC&R), RCRA Corrective Action, environmental audit, and underground tank projects. He assisted in the design of aboveground tank systems, underground tank systems, and soil and groundwater remediation systems.

He was actively involved in numerous feasibility studies. In his role as the Program Manager for a voluntary RCRA Corrective Action Program in Connecticut, he was responsible for coordinating, reviewing, and choosing the best alternatives from a number of feasibility studies for different areas and environmental matrices of an industrial facility.

Mr. Jaran prepared numerous environmental documents used to meet the requirements of the National Environmental Policy Act. The primary elements in document formulation included field investigation, literature search, document preparation, finalization, public notification, and final document release.

Remedial Investigations and/or Feasibility Studies

- Program Manager for a portfolio of sites contaminated with chromium waste in New Jersey. The investigation included soil, groundwater, and sediment investigation, and the evaluation of remedial alternatives for soils and sediments at the sites.
- Program Manager for fast-track voluntary Resource Conservation and Recovery Act (RCRA) Corrective Action Program in Connecticut. He managed three other consultant's staff in addition to his staff to investigate and remediate site in 18 months. The program consisted of parallel tracks of investigation and remediation to meet client's objectives. Investigation involved groundwater, soil, surface water, and sediment monitoring; remediation focused on groundwater and soil.
- Project Manager for Morton International, Inc. at an industrial coatings manufacturer for RI/FS under the requirements of the Massachusetts Contingency Plan (MCP). This project involved a Preliminary Assessment (PA), a Phase I Limited Site Investigation (LSI), and a Phase II Comprehensive Site Assessment (CSA). The site, located in Western Massachusetts, exhibited ground-water and soil contaminated with volatile organic compounds. Unique to this project were neighboring wetlands, residential properties adjacent and down gradient to the site, and involvement of the local Conservation Commission.
- Project Manager for a confidential paper company at a box manufacturing facility in Western Massachusetts for an RI/FS under the MCP. An initial environmental audit at this facility showed the presence of six underground storage tanks. After preparing contract documents for the removal, design, and replacement of the tanks, some soil contamination was discovered.

  Upon notification to the Massachusetts Department of Environmental Protection (MADEP), a PA was conducted, a waiver was granted, and a LSI and CSA were completed on the site. The Phase III feasibility study addressed the issue of remedial alternatives for a waste pond.
- Project Manager for numerous industrial Remedial Investigation/Feasibility Study (RI/FS) projects in New Jersey, Connecticut, Rhode Island, and Massachusetts, all involving groundwater and soil investigations. Project elements included feasibility studies, risk assessments, and remediation.
- Project Manager and project engineer participating in New Jersey's ISRA, including preparation of Site Evaluation Submissions (SES) for clients, preparation of Remedial Investigation sampling plans, implementation of reme-

dial investigations, interpretation of analytical data, and preparation of remediation plans. He has been involved in client contact and representation; worked closely on ISRA cases with New Jersey Department of Environmental Protection. He has prepared proposals and cost estimates for various ISRA cases, and prepared contract documents for various activities.

Remedial Design

- Design Engineer for numerous vapor mitigation systems in New Jersey, Pennsylvania, and New York. The systems were constructed at residential, commercial, and industrial properties. For a number of the projects, Mr. Jaran was active in the construction observation and certification portions of the projects.
- Project Engineer for the design and operation of a vacuum extraction system for recovery of jet fuel from the terminal side of Newark International Airport. Vacuum trucks were fitted with a manifold system to allow for the extraction from 5 wells simultaneously. A treatment system consisted of a holding tank for total fluids, a diaphragm pump, an oil/water separator, a series of bag filters, a series of carbon vessels, and a product tank.
- Project Manager for the design of a soil removal and capping project for a confidential chemical company in New Jersey. The design included the exaction of 2,200 tons of chromium contaminated soil and the placement and capping of the soil in a one acre area. The site was the location of an urban brownfields project to create a nature park.
- Project Manager for the construction of a series of new Underground Fuel Tanks at Newark International Airport for a major airline. The project included the removal of several existing tanks and the installation of new tanks. The tank locations were spread across various active portions of the airport, including both air and road portions. The project included regular interactions with the Port Authority of New York/New Jersey.
- Project Manager for construction of a combined Soil Vapor Extraction/Air Sparge/Groundwater Depression System for an industrial client in New Jersey.
- Project Manager for design of a remedial system to capture, pump, separate, and store floating product at an active chemical manufacturing plant for Morton International. For an industrial client, this project included designing the collection system, the piping system, the separation system, and the instrumentation and control system.
- Project Manager for a remedial cost estimate project for a petroleum client. The project involved developing a detailed cost estimate for remediation of a 110 year old refinery in Pennsylvania. The remediation cost estimate included remediation of surface water/wetlands, groundwater, soil, and sediment.
- Project Manager for an industrial client remedial design/construct project involving the use of a reactive barrier to de-chlorinate DNAPLs in a shallow aquifer, and the removal of a source of contamination on site through soil removal.
- Project Manager for a private client project involving the design of a soil remediation and a groundwater recovery system to remediate an offsite plume of LNAPL. Design included soil removal, solidification, and disposal, and a french drain with a manhole sump connected to the facilities treatment system.
- Program Manager for a voluntary RCRA Corrective Action program in Connecticut, involving design of remedial systems for both soil and groundwater. As program manager, he was responsible for assigning the design responsibilities, checking the design activities, conveying the information to the client, reviewing the design specifications and drawings, and observing the construction and startup of remedial systems. Soil remedial technologies employed included soil vapor extraction and carbon absorption, and soil aeration. Groundwater remedial technologies included air sparging, coupled with SVE, dual

extraction removal, and treatment involving aeration followed by air stripping.

- For a confidential box manufacturer, Mr. Jaran, as Project Manager, prepared contract drawings and specifications to excavate and dispose of petroleum contaminated soil as part of an UST removal project.
- He was a Project engineer assisting in the design of a water/groundwater treatment system for a fire training facility at Boston - Logan Airport. This project included the design and permitting of a carbon absorption treatment system for a facility that utilized various fuels and suppressant foams during fire training operations.
- Project engineer for various projects for a major soft drink bottling company, involving remedial design of UST, soil remediation, and groundwater remediation systems.
- For a major chemical industrial client in New Jersey, Mr. Jaran assisted on various remedial designs, including UST removal, removal of soil contaminated with solvents and petroleum located adjacent to the main facility building, pilot testing of a groundwater removal system used to capture a layer of floating oil, and closure of an active surface impoundment.
- As project engineer, Mr. Jaran designed and implemented through field oversight, remedial projects for UST removal, lagoon closure, and removal of soil contaminated with solvents and heavy metals for a boiler cleaning operation for a confidential chemical manufacturer in Central New Jersey.

Compliance Audits

- Auditor for a series of EH&S audits for an alcoholic beverage manufacturer. The audit addressed both government and internal requirements for air, water, waste water, solid waste, hazardous waste, stormwater, recycling, and beneficial environmental activities.
- Project Engineer for Environmental Compliance Audits for a confidential petroleum company. Involved site visits, regulatory review, and interviews to conduct a series of audits of disposal facilities for this client. The types of facilities audited included: recyclers, waste oil recovery facilities, hot mix asphalt batching plants, and landfills. These audits were conducted on a rapid turnaround basis, and used by the client in their evaluation of potential disposal options.
- Project Engineer for Environmental Compliance Audit of a paper manufacturing facility under the requirements of a Consent Order. The audit reviewed the facility's compliance with RCRA, CERCLA, CWA, CAA, NPDES, TSCA, SARA Title III, and UST regulations.
- Project Manager for a major electric utility for an environmental compliance audit program. The project addressed environ-mental regulations in the areas of RCRA, CERCLA, TSCA, CAA, CWA, SWDA, UST, state and Federal regulations. Twenty different facilities were audited during the project.

Industrial Waste Treatment

- Environmental engineer in siting and design for hazardous waste storage and pest management facility project for the US Army. Prepared federal and state permit applications for wastewater treatment facilities operations, along with applications for hazardous material and hazardous waste transport, treatment, storage, disposal, and generation.

Regulations and Permitting

- Project manager for a Highlands Act Permit project for a single family house construction that included the delineation of extensive wetlands.
- Project engineer for U.S. Army preparing regulations for use at major command, including Installation Spill Prevention, Control, and Countermeasures Plan and Installation Spill Contingency Plan.

Hazardous Waste Management

- Responsible for hazardous waste management program that included material inventory, waste identification, recordkeeping, transporting, turn-in, packaging, permitting, monitoring, and disposal of hazardous material and

hazardous waste for major command of U.S. Army. Program provided guidance to generators of hazardous waste to ensure proper storage, labeling, and movement of hazardous material. Managed proper maintenance, inspection, removal, and disposal of PCB transformers and capacitors.

- Contract officer representative for government contract to facilitate proper handling and packaging of hazardous material.

Remedial Action/Construction Engineering/Construction Management

- Quality Control Engineer for the construction of a capping system for the United States Military Academy. A 12-acre landfill did not have a cap. The project included earthwork, grading, placement of a multi-layer cap, installation of a leachate collection system and storage tank, access road construction and stormwater conveyance system construction. The construction occurred over a 6-month period. Responsibilities included contractor oversight, agency interaction, submittal review, and report preparation.
- Project Manager for the construction management of a soil cap construction site in a wetlands for a confidential chemical manufacturer. The effort included the sampling of sediment to determine the impact of the nearby contamination, the purchase and banking of wetlands credits, and the permitting of the work with the State of New Jersey and the US Army Corps of Engineers. The construction occurred over a 3-month period. Responsibilities included contractor oversight, submittal review, and reporting. Project manager for the construction management of two chromium contaminated soil excavation and disposal projects.
- Certifying Engineer for the construction of a landfill relocation and cover for real estate developer. The construction occurred over a 12-month period. Responsibilities included submittal review, drawing review, and reporting.

Other Experience

1983-1985 US Department of the Army. **Environmental Engineer.** Responsible for managing the hazardous materials/hazardous waste program for a Major Army Command. Other responsibilities included: preparation of permit applications/modifications, preparing environ-mental documents (environmental assessments, Spill Prevention and Countermeasures Control Plan, Installation Spill Response Plan, US Army regulations and policies), contract officer for hazardous waste and PCB removal, asbestos inventory, design of a pest management and hazardous waste storage facility.

1983 New York State Department of Environmental Conservation. **Environmental Engineer.** Responsible for Region 3 dam safety and flood control programs. Other responsibilities included review and approval of operation and maintenance manuals for wastewater treatment plants and inspection of the plants.

Professional Affiliations

American Society of Civil Engineers
Society of American Military Engineers

Papers and Presentations

Documenting Professional Judgment. Presented at the New Jersey Commerce and Industry's Environmental Business Council Technical Conference, March 2014.

Assessing the Bioavailability of Chromium with the Use of Diffusion Water Samplers. The 3rd International Conference on Contaminated Sediments. January 2005.

"The Trend of Enforcement Activities." The Hanover Report. Volume 2, No. 3. November 1993.

"The Use of Gas Chromatography in Contaminated Soil Excavation." Presented at the 2nd Annual Conference on Real Estate Assessments and Environmental Audits. Sturbridge, Massachusetts, December 1989.

With S. W. Effler et al. "Interaction between Industrial Pollution and P Cycling in Onondaga Lake." Water, Air, and Soil Pollution. Vol. 24. 1985.

"Interactions of Calcium and Phosphorus and Their Effect on the Biota of Onondaga Lake." Master's Thesis. Syracuse University. 1983.

With S. W. Effler and C. Canter. "Onondaga Lake and Dissolved Oxygen in the Seneca River." Journal of Environmental Engineering, ASCE. August 1983.

"Inorganic Fractions in Settling Phosphorus in Onondaga Lake, New York." Presented at the 45th Annual American Society of Limnology and Oceanography Conference. Raleigh, North Carolina. June 1982.

With S. W. Effler, et al. "A Preliminary Water Quality Analysis of the Three Rivers System, Syracuse, New York." Unpublished. 1982.

Robert L. Jackson, P.E.

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Experience Summary

Mr. Jackson is an Environmental Engineer and with over 30 years of professional experience that includes program/project management, site characterization and remediation, due diligence, and regulatory compliance. He is well versed in multiple regulatory programs and has worked primarily in New Jersey, New York and Pennsylvania.

Years of Experience:

30 years

Education

B.S. Civil and Environmental Engineering, 1984, Cornell University, Ithaca, NY

Special Training

NJDEP Site Remediation Basics
NJDEP Underground Storage Tanks
NJDEP DPCC
40-hour OSHA Course
8-hour OSHA Refresher
First Aid/CPR

Registrations

Professional Engineer, Delaware #18907
Professional Engineer, New Jersey # GE40276
Professional Engineer, Pennsylvania #PE073492
Subsurface Evaluator, New Jersey #0025012
Six Sigma Plus Green Belt Certification – Honeywell International Inc,

Memberships

New Jersey Environmental Business Council – Regulatory Committee

Primary Experience

2005 – Present Equity Environmental Engineering, LLC. Managing Director. Mr. Jackson manages projects as follow:

Managed projects site/remedial investigation project under the LSRP program several of which were given Response Action Outcomes (RAOs). These projects were for both industrial and private clients primarily involving release from USTs.

Assistant Project Manager for a cancer cluster exposure assessment in Northeastern Pennsylvania for the Center for Disease Control/Agency for Toxic Substances and Disease Registry (CDC/ATSDR). The project included the assimilation and review of historical data for the study area to attempt to determine the environmental factors associated with the high rate of Polycythemia Vera, blood disorder. Coordinated the efforts of three subcontractors to assess potential air and hydrogeological sources of contamination that may cause the disease.

Complete a Hazard Operations (HAZOP) study for a commercial facility in Rahway, NJ. The study evaluated the various operations, the probable hazards and non-compliance with applicable federal, state, and local regulations, and how they are addressed by the firm. Issues of non-compliance and methods to correct them are detailed in the project report.

Managed the Phase II site investigation of two properties that were on or adjacent to former Manufactured Gas Plants (MGP) in NYC. Assisted in the development of the Site Management Plans for each site to ensure that MGP contaminated soils would or were properly handled. Also

assisted in the review of potential disposal sites for excess soils based on the proposed development of each site. Both projects required close coordination with the architects and remediation contractors.

Evaluated the potential remedial costs for the future development of a commercial property in Brooklyn, NY. This involved the compilation and review of site superfund documents, discussions with the current case manager and various vendors for remediation, demolition, etc. A technical memorandum was prepared for the cost evaluation.

Conducted Phase I Environmental Site Assessments (ESAs) and Phase II Site Investigations throughout the five New York City boroughs for industrial and residential properties for private clients. Completed Environmental Site Assessment Statements (EAS) and Environmental Assessment Forms (US Dept. of Health and Human Services) for sites in New York City under multiple development scenarios including zoning amendments, bulk variances, etc.

Conducted Preliminary Site Assessments in accordance with NJDEP and NJ Division of Children and Family Services requirements for day care facilities in New Jersey.

Conducted Property Condition Assessments for two PBM Graphics facilities in North Carolina. The PCAs evaluated the facility structure and parking, HVAC and electrical systems, architectural amenities, security and fire suppression systems, pollution prevention systems and any environmental related activities ongoing. Repair and/or replacement costs were evaluated as part of the project.

Conducted value engineering studies for the Woodbridge Housing Authority and a New York City brownfield site. Provided recommendations to address outstanding issues.

Evaluated proposed waste to energy plant environmental issues including permitting, waste stream analysis, environmental justice, etc. Implemented ASTM protocol for municipal solid waste sampling and analysis.

Provide bi-monthly Pennsylvania regulatory updates for the New Jersey Environmental Business Council.

Conducted nationwide regulatory compliance audits for a confidential spirits manufacturing company. These audits were conducted to look in depth at specific aspects of the facility operations rather than a comprehensive regulatory audit. Provided temporary, onsite environmental compliance support for their Breinigsville, PA facility while they conducted a search for a full time employee. Duties included conducting routine facility inspections, completing revisions of the facility emergency response plans, updating the residual waste documentation, making a determination on their hazardous waste generator status, etc.

For the same client, Mr. Jackson performed onsite services as the acting Environmental Risk Manager focusing on maintaining or bringing into compliance environmental activities at their Lehigh, Pennsylvania facility. Mr. Jackson worked full time onsite 2-3 days per week.

Designed an in-door air remediation system for the removal of VOCs at several industrial facilities in New York and New Jersey. The design included of the use of radon mitigation equipment to evacuate sub-slab VOC vapors which were migrating into the basement above the slab.

Conducted an assessment of an office building potable water supply following a propylene glycol leak into the distribution system.

Provided construction management for the remediation of the Cragston Landfill in Highland Park, New York. The remediation was to install an engineered cap over the former garbage landfill.

The oversight included inspection of the liner installation, soil cover compaction, and drainage feature design and construction.

Conducted site inspections and provided engineer's certification for DPCC/DCR and SPCC plans for multiple industrial facilities in New Jersey and Delaware.

Prepare the engineering portion of deed notices for several properties associated with Honeywell chrome sites in Hudson County. Worked to establish a one-call type system for sites along the Bayonne Pipeline. Coordinated waste disposal for these sites.

Serve as Team Leader for the Honeywell Study Area 7 (SA7) Treatability Team focusing on the implementation of the pilot study phase of the program. The pilot program expanded to include additional testing with new reagents. Duties included assisting in the development of the scope of the pilot test program, contracting appropriate technology vendors, coordinating activities with the SA7 Implementation Team and onsite staff, and serving as the onsite construction supervisor for implementation of the pilot test activities. Participate in the development of cost estimates for full scale implementation of specific pilot tests that were successful.

2000-2005 Parsons. Team Leader. Mr. Jackson Served as Team Leader for the Honeywell Study Area 7 Treatability (SA7) Team to investigate the treatment of Chromium Ore Processing Residue (COPR). The Team was chartered to study the mechanisms for COPR heaving and release of hexavalent chromium not only for the SA7 site but, for multiple sites in New Jersey and Maryland. This highly significant research and development project included the coordination of approximately 12 contractors and academic entities managing various portions of the $4 million investigation. Duties included providing direction for the project, managing budget and schedule, maintaining the flow of critical information throughout the team, review of various interim and final reports, and applicable technology review.

Resident Contract (Project) Engineer for approximately 20 sites within Honeywell's Corporate Remediation and Evaluation Services (RES) department. Located at Honeywell's corporate headquarters in Morristown, New Jersey on a 40-hour pre week basis. Activities have included general support for Honeywell Project Managers for projects in multiple states under state regulatory lead, U.S. EPA lead or joint oversight situations. Projects have also been performed under various types of administrative/consent orders and voluntary programs.

RI/FS activities for Honeywell included coordinating and overseeing work on sites of varying size and land use with a wide range of contaminants of concern including VOCs, SVOCs, PCBs, TPH, metals, LNAPL and DNAPL in all media. Investigations have included biota sampling, NAPL fingerprinting, rapid optical screening tool (ROST^{tm}) testing, tidal studies, and vibracore sampling of sediments.

Remedial Design activities for Honeywell have included landfill cap designs (RCRA and TSCA) based on state and/or EPA requirements, groundwater treatment plants for contaminated groundwater and leachate, and a conceptual design for a containment disposal facility (CDF) for contaminated sediment.

Remedial Action for Honeywell has included the installation and operation of several pump and treat groundwater systems, successful development and implementation of natural attenuation proposals for groundwater, installation and operation of a soil vapor extraction (SVE) system, in-situ chemical oxidation of SVOCs and soil stabilization, and building demolition.

Became Honeywell Six Sigma Plus – Green Belt certified. The team I participated on was responsible for developing and implementing a new process to better identify potentially applicable remedial technologies prior to initiating a feasibility study for a site.

Participated as a member of the Honeywell Peer Review Team. The team was developed and the process implemented to provide in-house reviews of projects in various stages of progress up to construction. The reviews focused on remedial investigations, feasibility studies, remedial actions, etc. The reviews resulted in an action item list of things for the project team to investigate that could potentially reduce project capital costs, liability, O&M costs, shorten the duration of remedial actions, etc. Program resulted in the savings of over $1 million because of a mid course correction suggested during the project's peer review. On another project, potential savings in cost and time were realized as a result of a better understanding of mixed waste (chemical and radioactive) rules and requirements.

Project Engineer for the development, implementation, and oversight of soil erosion controls for consolidation and capping of the Sharkey Landfill in Parsippany, New Jersey. The project involved working with the design engineer, construction contractor, and county soil erosion control office to provide appropriate erosion control and stabilization measures during the landfill work.

Served as the New Jersey Federal Business Development coordinator from approximately September 2000 through March 2002. Established contacts at DoD facilities in New Jersey and conducted business development activities to procure military contracts.

Mr. Jackson served as the Engineering Group Manager for the Parsons Somerset, New Jersey office for approximately 5 months. Responsible for assigning staff to various projects, maintaining staff utilization goals, mentoring junior staff, conducting staff evaluations and coordinating with other Parsons office group managers.

1990-2000 CH2M HILL. Project Manager

Managed numerous site and remedial investigations in New Jersey, Pennsylvania, New York, and Connecticut involving all media for a variety of situations resulting from spills, underground storage tank leaks, the discharge of mixed waste material, etc. Duties included managing all aspects of the project; budgeting, staffing, scheduling, client relationship building, preparing project documents and reports, coordination with NJDEP, etc. Projects were completed under consent orders, memorandum of agreements, and at risk. Investigations have resulted in the implementation of Declaration of Environmental Restrictions (DER) and Classification Exemption Areas (CEA). Numerous sites were brought to closure (no further action) in New Jersey.

Site Manager for Superfund remedial investigations in US EPA Region III under the Alternative Remedial Contracting Service (ARCS) program. Duties included coordinating all aspects of the project, including the stringent contracting and laboratory requirements of the ARCS program. Projects were in Pennsylvania and involved a former plating operation that resulted in chromium contamination of soil and groundwater up to 20% chrome is certain areas; and lithium, chromium and mercury contamination at another site.

Prepared RCRA closure cost estimates that were deemed appropriate for the actual closure plan by the NJDEP for a precious metals manufacturer. The plan included sufficient detail in explaining the various closure steps that the NJDEP accepted it as a formal closure plan as well as cost estimate.

Project Engineer and construction manager for the modification and upgrade of underground storage tanks at several locations within Newark

Liberty International Airport for Continental Airlines. Duties included onsite management of demolition and construction activities, soil sampling, completion of UST modification reports for the NJDEP, and coordination with the New York/New Jersey Port Authority.

Transition Coordinator for Lockheed Martin Missiles and Space plant closure in West Windsor, New Jersey. Located at facility on a 40-hour per week basis for 14 months. The facility was approximately 750,000 square feet and had over 3,000 employees. Responsibilities included terminating permits, conducting ISRA activities, coordinating decontamination of the facility and facility equipment prior to reassignment, sale, or disposal, and coordinating disposal of hazardous and non-hazardous wastes generated at the facility. Duties also included conducting Phase I ESAs, health and safety training courses, and acting as onsite safety coordinator. The transition/closure was completed on time and under budget while setting an industry record of approximately four (4) million man-hours worked without a lost work day.

Managed and participated in environmental compliance auditing for electric utilities, the petroleum industry, and for the United States Postal Service. Project included auditing up to 14 different regulatory programs as well as client specific policies and practices. Developed self sustaining compliance calendars for Koch Industries, a petroleum industry client.

Participated in Phase I Environmental Site Assessments for numerous national clients at multiple sites. Site assessments included both Phase I and phase II efforts in the United States and Canada for industrial clients done in accordance with the applicable ASTM standards.

Developed and modified SPCC plans for Koch Industries bulk oil storage terminals in New Jersey.

Environmental planning efforts have included preparing sections of various Environmental Assessments (EA) for Jet Blue Airlines and US Airways for projects subject to the National Environmental Protection Act (NEPA). The work for Jet Blue was to assist them in getting their initial permits to operate at Kennedy International Airport. US Airways was planning a major expansion at the Pittsburgh Airport which required major environmental planning. Evaluated current and future impacts relating to wastewater, stormwater run-off, airplane de-icing run-off, solid and hazardous waste, and residual waste program.

Reviewed EAs prepared for United States military under the Base Realignment and Closure (BRAC) Program, and prepared employee trip reductions programs for the United States Postal Service to help meet air quality standards in non-attainment areas in New Jersey.

Served as the New Jersey office regulatory coordinator. This required disseminating pertinent regulatory information throughout the northeast region of CH2M HILL, participating in regional and national regulatory practice conference calls, fielding questions regarding various regulatory programs or directing staff to other appropriate staff, and participating in regulatory reviews for projects in the planning stages.

1987–1990 Massachusetts Water Resources Authority

Mr. Jackson worked as project engineer Strategized, planned, and implemented an $8 million facilities planning study to determine the most cost-effective control mechanism for the Combined Sewer Overflow (CSO) Program in the greater metropolitan Boston area. Oversaw and directed the efforts of consulting firms maintaining project schedules and budgets and coordinating with local, state, and federal regulatory agencies. Evaluated various CSO control technologies

including dry weather overflow mechanisms and best management practices. Conducted public presentations regarding the CSO project to local neighborhood organizations and elected public officials.

Conducted industrial wastewater inspections throughout the MWRA service area of 43 communities surrounding Boston. Prepared follow-up reports with recommendations for appropriate wastewater sampling or enforcement actions. Initiated a program to promote recycling and waste minimization primarily focused on the metal finishing industry .

1985–1987 U.S. EPA, Region I, Boston, MA
Staff Engineer

Provided oversight for site remediation projects to ensure compliance with various orders for remediation issued by EPA Region I. Assisted in the authorization of the state of Maine's RCRA program. Reviewed and approved RCRA Part B Treatment, Storage, and Disposal (TSD) permit applications for industrial and military facilities.

Served as the acting Federal Facilities Coordinator for the hazardous waste management group within the Waste Management Division of EPA Region I.

Papers

Wazne, Mahmoud; Papazoglou, Pierantonios; Papastavrou, Marilena; Meng, Xiaoguang; Dermatas, Dimitris; Christodoulatos, Christos; Kaouris, Maria; Morris, John; *Jackson, Robert L.*; *Remediation of Chromite Ore Processing Residue by Chemical Reductants,* Eighth International Symposium on In Situ and On-Site Bioremediation; Baltimore, MD; June 6, 2005.

APPENDIX H

BCP Signage

(To Be Provided)

APPENDIX I

Quality Assurance Project Plan (To be provided)

APPENDIX J

Community Air Monitoring Program (To be provided)