

**3475 Third Avenue  
BRONX, NEW YORK**

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# **Remedial Action Work Plan**

**NYC VCP Project Number 15CVCP128X  
OER Project Number 12EHAZ331X**

**Prepared For:**

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## LIST OF ACRONYMS

<b>Acronym</b>	<b>Definition</b>
AOC	Area of Concern
AS/SVE	Air Sparging/Soil Vapor Extraction
BOA	Brownfield Opportunity Area
CAMP	Community Air Monitoring Plan
C&D	Construction and Demolition
CEQR	City Environmental Quality Review
CFR	Code of Federal Regulations
CHASP	Construction Health and Safety Plan
COC	Certificate of Completion
CQAP	Construction Quality Assurance Plan
CSOP	Contractors Site Operation Plan
DCR	Declaration of Covenants and Restrictions
ECs/ICs	Engineering Controls and Institutional Controls
ELAP	Environmental Laboratory Accreditation Program
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations Emergency Response
IRM	Interim Remedial Measure
MNA	Monitored Natural Attenuation
NOC	Notice of Completion
NYS DEC	New York State Department of Environmental Conservation
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York State Department of Health and Mental Hygiene
NYC OER	New York City Office of Environmental Remediation
NYC VCP	New York City Voluntary Cleanup Program
NYCRR	New York Codes Rules and Regulations
NYS DEC	New York State Department of Environmental Conservation

NYS DEC DER	New York State Department of Environmental Conservation Division of Environmental Remediation
NYS DOH	New York State Department of Health
NYS DOT	New York State Department of Transportation
ORC	Oxygen-Release Compound
OSHA	United States Occupational Health and Safety Administration
PCBs	Polychlorinated Biphenyls
PE	Professional Engineer
PID	Photo Ionization Detector
QEP	Qualified Environmental Professional
QHHEA	Qualitative Human Health Exposure Assessment
RAOs	Remedial Action Objectives
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan or Plan
RCA	Recycled Concrete Aggregate
RD	Remedial Design
RI	Remedial Investigation
RMZ	Residual Management Zone
SCOs	Soil Cleanup Objectives
SCG	Standards, Criteria and Guidance
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SSDS	Sub-Slab Depressurization System
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
USGS	United States Geological Survey
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VOC	Volatile Organic Compound

## CERTIFICATION

I, Jolanda Jansen, am currently a registered professional engineer licensed by the State of New York. I performed professional engineering services and had primary direct responsibility for designing the remedial program for the 3475 Third Avenue Site, site number 12EHAZ331X. I certify to the following:

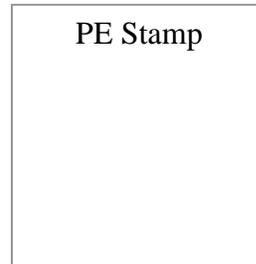
- I have reviewed this document and the Stipulation List, to which my signature and seal are affixed.
- Engineering Controls developed for this remedial action were designed by me or a person under my direct supervision and designed to achieve the goals established in this Remedial Action Work Plan for this site.
- The Engineering Controls to be constructed during this remedial action are accurately reflected in the text and drawings of the Remedial Action Work Plan and are of sufficient detail to enable proper construction.
- This Remedial Action Work Plan (RAWP) has a plan for handling, transport and disposal of soil, fill, fluids and other materials removed from the property in accordance with applicable City, State and Federal laws and regulations. Importation of all soil, fill and other material from off-Site will be in accordance with all applicable City, State and Federal laws and requirements. This RAWP has provisions to control nuisances during the remediation and all invasive work, including dust and odor suppression.

Jolanda Jansen  
Name

068972-1  
PE License Number

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



I, Paul H. Ciminello, am a qualified Environmental Professional. I will have primary direct responsibility for implementation of the remedial program for the 3475 Third Avenue site, site number 12EHAZ331X. I certify to the following:

- This Remedial Action Work Plan (RAWP) has a plan for handling, transport and disposal of soil, fill, fluids and other materials removed from the property in accordance with applicable City, State and Federal laws and regulations. Importation of all soil, fill and other material from off-Site will be in accordance with all applicable City, State and Federal laws and requirements. This RAWP has provisions to control nuisances during the remediation and all invasive work, including dust and odor suppression.

Paul H. Ciminello  
QEP Name

\_\_\_\_\_  
QEP Signature

\_\_\_\_\_  
Date

## **EXECUTIVE SUMMARY**

Kingspoint Heights LLC is working with the NYC Office of Environmental Remediation (OER) in the New York City Voluntary Cleanup Program to investigate and remediate a 17,600-square foot site located at 3475 Third Avenue in Bronx, New York. A remedial investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP). The remedial action 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 with applicable laws and regulations.

### **Site Location and Background**

The Site consists of portions of one lot in the Morrisania section of Bronx, New York identified as Block 2372 and Lot 32 on the New York City Tax Map. The lot is being subdivided and will create Lot 37 for the Site and a new lot 32 for northern remainder of the existing lot. Figure 2 shows the Site location. The Site is approximately 17,600-square feet (Lot 32 is 24,728 square feet in total) and is bounded by lots 11, 13, 15 and 18 to the west, which include vacant land, parking and residential uses; to the north are two, five story commercial structures (these buildings occupy the remainder of Lot 32, north of the Site); Lot 41 to the south contains a multi-family residential building, and Third Avenue is located to the east. A map of the site boundary is shown in Figure 1. The project site is currently occupied by two structures. A two story building comprised of community space on the ground floor and offices on the second floor is located at the southern end of the Site. To the north, and occupying the remainder of the Site, is a three story building with retail and self-storage on the ground floor and self-storage on the second and third floor. Historical operations at the Site have included a chemical company, automotive repair, manufacture of textiles, manufacture of bed springs, and dyeing and finishing.

## **Summary of Redevelopment Plan**

Development plans for the Site include the demolition of existing on-site structures and construction of a twelve story residential building with commercial space on the ground floor. A cellar accessed by a ramp down from a Third Avenue entrance at the southeast corner of the building will extend across the entire Site. The cellar will contain a laundry room, parking and utility rooms. Total excavation depth for the cellar is anticipated to be approximately fourteen feet below surface grade (bsg). Groundwater has been documented at depths between 15.75 and 15.90 feet below surface grade. The total volume of material to be excavated to facilitate construction of the cellar is anticipated to be 17,600 square feet x 14 feet = 246,400 cubic feet, minus 31,500 cubic feet where three existing cellars exist in the southern and eastern portions of the site for a net total of 214,900 cubic feet (8,000 cubic yards). It is anticipated that the excavated material will be comprised of three waste streams including: poor quality urban fill (2,600 cubic yards), bedrock (1,600 cubic yards), and native soils (3,800 cubic yards). The poor quality urban fill will be disposed of as non-hazardous regulated waste; bedrock and native soils as unregulated waste.

## **Summary of Surrounding Property**

The subject property is located in an urban area comprised primarily of multi-family residential and commercial properties. The property to the north contains self-storage and to the east and south are mixed use (multi-family residential and commercial) buildings. To the west is an automotive repair shop, a vacant lot/parking and multi-family residential.

## **Summary of Past Site Uses and Areas of Concern**

Historical records indicate that the Site was developed as early as 1891. The current on-site buildings were constructed sometime between 1909 and 1951 and historical operations included a chemical company, automotive repair, manufacture of textiles, manufacture of bed springs, and dyeing and finishing. The Site was formerly registered as a large quantity generator of hazardous waste (1996), and a small quantity generator (1998 and 2002). Wastes generated included non-listed corrosive wastes, non-listed ignitable wastes, non-listed reactive wastes, toluene diisocyanate, and phenol. Two fuel-oil bulk storage tanks (both approximately 2,500

gallons in size) are located within concrete vaults, one at the northern portion of the southern building cellar and one at the southern portion of the northern storage building cellar.

The AOCs identified for this site include:

1. Potential contamination in soil and groundwater near the fuel oil storage tanks.
2. Potential releases from historical uses of the property (various manufacturing) resulting in contamination of soil, groundwater and/or soil gas.
3. Potential presence of poor quality urban fill of unknown volume.

### **Summary of Work Performed under the Remedial Investigation**

ESI performed the following scope of work:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Collected samples from two mechanized soil borings and eight test pits extended by URS and extended five manual soil borings across the entire project Site, and collected 18 soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Collected samples from one groundwater monitoring well installed by URS and collected samples groundwater samples from two test pits extended by URS to the groundwater interface to establish groundwater flow and collected three groundwater samples for chemical analysis to evaluate groundwater quality;

Installed seven temporary soil vapor probes, and collected seven soil vapor samples for chemical analysis.

### **Summary of Findings of Remedial Investigation**

1. Elevation of the property at the Third Avenue sidewalk ranges from 43.2 feet to 45.1 feet.
2. Depth to groundwater ranges from between 15.78 and 15.90 feet below sidewalk level at the Site according to geotechnical reports. Groundwater flow is generally from northeast to southwest beneath the Site.

3. Depth to bedrock is variable throughout the site and is shallower in the west and south, becoming relatively deeper to the north and east. Shallow bedrock is present at depths between 1'9" and 8'7" below the surface of the concrete floor along the western edge of the site with the shallowest bedrock in the southwest corner. Bedrock is present at depths between 17' and 22' below the surface of the concrete slab in the eastern half of the Site.
4. The stratigraphy of the site, from the surface (concrete floor of the self-storage area, or unfinished basement floors) down, consists of between 0.5' and 2' of urban fill (ash, slag, coal dust) underlain by a layer of native, coarse reddish brown sand with varying amounts of silt and gravel that extends to bedrock. Bedrock depths vary from between 1-2 feet below the surface at the western side of the site to 17 feet below sidewalk grade at the eastern side of the site.
5. Soil/fill samples collected during the RI were compared to NYSDEC Part 375-6 Unrestricted Use (Track 1) and Restricted Residential Use (Track 2) Soil Cleanup Objectives (SCOs). One VOC, acetone (max. of 0.051 mg/Kg) was detected above its Unrestricted Use SCO. Several SVOCs were identified at low concentrations, all below their respective Unrestricted Use SCOs. Metals including arsenic (max 27.9 mg/Kg), barium (max 3,850 mg/Kg), iron (max 83,100 mg/Kg), lead (max 2,960 mg/Kg), mercury (max 1.54 mg/Kg), and zinc (max 2,500 mg/Kg) were detected above Restricted Residential SCOs. All these maximum concentrations were detected in one shallow sample location (TP-3 (0-2')), indicating a hotspot location. Chromium (max 63.9 mg/Kg), copper (max 164 mg/Kg) and nickel (max 32.8 mg/Kg) also exceeded their Unrestricted Use SCOs. Three pesticides, 4,4'-DDD (max 0.039 mg/Kg) 4,4'-DDE (max 0.237 mg/Kg), and 4,4'-DDT (max 0.279 mg/Kg) were detected above their Unrestricted Use SCOs at five shallow samples. No PCBs were detected above Unrestricted Use SCOs.

6. Groundwater samples collected during the RI were compared to NYSDEC 6NYCRR Part 703.5 Groundwater Quality Standards (GQS). Groundwater samples showed no detected concentrations of pesticides or PCBs. The only VOC detected above GQS was acetone (max of 6.3 ug/L) at W-2. One SVOC, hexachlorobenzene (at 0.35 ug/L in MW-5) exceeded its GQS. Several metals were identified in groundwater, and of those, sodium (max 702,000 ug/L), magnesium (max 59,800 ug/L) and iron (max 1,120 ug/L) were detected above their respective GQSs.
7. Soil vapor samples collected during the RI were compared to the compounds listed in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion. Soil vapor results show a wide range of compounds throughout the property including BTEX and associated petroleum related compounds as well as chlorinated hydrocarbons. The concentrations of BTEX compounds were detected at maximum concentration of 86 ug/m<sup>3</sup>. Most compounds were detected at concentrations less than 20 ug/m<sup>3</sup>, except for acetone, that was detected at maximum concentrations of 113 ug/m<sup>3</sup>. Chlorinated VOCs methylene chloride (max 74 ug/m<sup>3</sup>), carbon tetrachloride (max 53.2 ug/m<sup>3</sup>), and trichloroethene (max 10 ug/m<sup>3</sup>) were detected in one or more soil vapor samples. Concentrations of TCE are above monitoring level ranges established by NYSDOH. Tetrachloroethene, and 1,1,1-trichloroethane were detected below their respective monitoring level ranges.

Data tables for all laboratory data are included as Appendix B. A map showing exceedances for all media is included as Figure 5.

### **Summary of the Remedial Action**

The proposed remedial action achieves protection of public health and the environment for the intended use of the property. The proposed remedial action achieves all of the remedial action objectives established for the project and addresses applicable standards, criterion, and guidance; is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants; is cost effective and implementable; and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP 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. Selection of Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs) and subsequent (post-excavation) collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of Track 1 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 Unrestricted Use (Track 1) SCOs. The entire footprint of the building area (about 100% of the property) will be excavated to a depth of approximately 14 feet below grade for development purposes. Approximately 8,000 cubic yards of soil/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. Dewatering in compliance with city, state, and federal laws and regulations. Extracted groundwater will either be containerized for off-site licensed or permitted disposal or will be treated under a permit from New York City Department of Environmental Protection (NYCDEP) to meet pretreatment requirements prior to discharge to the sewer system.

10. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
11. Performance of all activities required for the remedial action, including acquisition of required permits and attainment of pretreatment requirements, in compliance with applicable laws and regulations.
12. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
13. Submission of a Remedial Action Report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and lists any changes from this RAWP.
14. Removal of two vaulted ASTs from the southeastern portion of the site.
15. Registration of tanks and reporting of any petroleum spills associated with AST's and appropriate closure of these petroleum spills in compliance with applicable local, State and Federal laws and regulations.

If Track 1 Unrestricted Use SCOs are not achieved, the following construction elements implemented as part of new development will constitute Engineering and Institutional Controls:

16. As part of development, construction of an engineered composite cover consisting of a six-inch thick concrete building slab with an 8-inch clean granular sub-base beneath all building areas.
17. As part of development, installation of a vapor barrier system consisting of vapor barrier beneath the building slab and outside of sub-grade foundation sidewalls to mitigate soil vapor migration into the building. The vapor barrier system will consist of a minimum 20 mil thick vapor barrier product below the slab throughout the full building area. All welds, seams and penetrations will be properly sealed to prevent preferential pathways for vapor migration.
18. As part of new development, construction and operation of a cellar parking garage with high volume air exchange in conformance with NYC Building Code.
19. The property will continue to be registered with an E-Designation at the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in this

RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

## COMMUNITY PROTECTION STATEMENT

The NYC Office of Environmental Remediation (OER) provides governmental oversight for the cleanup of contaminated property in NYC. This Remedial Action Work Plan (“cleanup plan”) describes the findings of prior environmental studies, shows the location of identified contamination at the site, and describes the plans to clean up the site to protect public health and the environment.

This cleanup plan provides a very high level of protection for neighboring communities and also includes many other elements that address common community concerns, such as community air monitoring, odor, dust and noise controls, hours of operation, good housekeeping and cleanliness, truck management and routing, and opportunities for community participation. The purpose of this Community Protection Statement is to explain these community protection measures in non-technical language to simplify community review.

### **Project Information:**

- Site Name: 3475 Third Avenue
- Site Address: 3475 Third Avenue, Bronx, NY
- NYC Voluntary Cleanup Program Project Number: 15CVCP128X

### **Project Contacts:**

- OER Project Manager: Horace Zhang, 212-788-8841
- Site Project Manager: Paul Ciminello, 845 452 1658
- Site Safety Officer: Paul Ciminello, 845 452 1658
- Online Document Repository:  
<http://www.nyc.gov/html/oer/html/repository/RBronx.shtml>

**Remedial Investigation and Cleanup Plan:** Under the oversight of the NYC OER, a thorough study of this property (called a remedial investigation) has been performed to identify

past property usage, to sample and test soils, groundwater and soil vapor, and to identify contaminant sources present on the property. The cleanup plan has been designed to address all contaminant sources that have been identified during the study of this property.

**Identification of Sensitive Land Uses:** Prior to selecting a cleanup, the neighborhood was evaluated to identify sensitive land uses nearby, such as schools, day care facilities, hospitals and residential areas. The cleanup program was then tailored to address the special conditions of this community.

**Qualitative Human Health Exposure Assessment:** An important part of the cleanup planning for the Site is a study to find all of the ways that people might come in contact with contaminants at the Site now or in the future. This study is called a Qualitative Human Health Exposure Assessment (QHHEA). A QHHEA was performed for this project. This assessment has considered all known contamination at the Site and evaluated the potential for people to come in contact with this contamination. All identified public exposures will be addressed under this cleanup plan.

**Health and Safety Plan:** This cleanup plan includes a Construction Health and Safety Plan (CHASP) that is designed to protect community residents and on-Site workers. The elements of this RAWP are in compliance with applicable safety requirements of the United States Occupational Safety and Health Administration (OSHA). This RAWP includes many protective elements including those discussed below.

**Site Safety Coordinator:** This project has a designated Site safety coordinator to implement the CHASP. The safety coordinator maintains an emergency contact sheet and protocol for management of emergencies. The Site safety coordinator is identified at the beginning of this Community Protection Statement.

**Worker Training:** Workers participating in cleanup of contaminated material on this project are required to be trained in a 40-hour hazardous waste operators training course and to take annual refresher training. This pertains to workers performing specific tasks including removing contaminated material and installing cleanup systems in contaminated areas.

**Community Air Monitoring Plan:** Community air monitoring will be performed during this cleanup project to ensure that the community is properly protected from contaminants, dust and odors. Air samples will be tested in accordance with a detailed plan called the Community Air Monitoring Plan or CAMP. Results will be regularly reported to the NYC Office of Environmental Remediation. This cleanup plan also has a plan to address any unforeseen problems that might occur during the cleanup (called a ‘Contingency Plan’).

**Odor, Dust and Noise Control:** This cleanup plan includes actions for odor and dust control. These actions are designed to prevent off-Site odor and dust nuisances and includes steps to be taken if nuisances are detected. Generally, dust is managed by application of physical covers and by water sprays. Odors are controlled by limiting the area of open excavations, physical covers, spray foams and by a series of other actions (called operational measures). The project is also required to comply with applicable NYC noise control standards. If you observe problems in these areas, please contact the onsite Project Manager or NYC Office of Environmental Remediation Project Manager listed on the first page of this Community Protection Statement document.

**Quality Assurance:** This cleanup plan requires that evidence be provided to illustrate that all cleanup work required under the plan has been completed properly. This evidence will be summarized in the final report, called the Remedial Action Report. This report will be submitted to the NYC Office of Environmental Remediation and will be thoroughly reviewed.

**Stormwater Management:** To limit the potential for soil erosion and discharge, this cleanup plan has provisions for stormwater management. The main elements of the stormwater

management include physical barriers such as tarp covers and erosion fencing, and a program for frequent inspection.

**Hours of Operation:** The hours for operation of cleanup will comply with the NYC Department of Buildings construction code requirements or according to specific variances issued by that agency. For this cleanup project, the hours of operation will conform to requirements of the NYC Department of Buildings.

**Signage:** While the cleanup is in progress, a placard will be prominently posted at the main entrance of the property with a laminated project Fact Sheet that states that the project is in the NYC Voluntary Cleanup Program and provides project contact names and numbers, and a link to the document repository where project documents can be viewed.

**Complaint Management:** The contractor performing this cleanup is required to address all complaints. If you have any complaints, you can call the facility Project Manager or the NYC Office of Environmental Remediation Project Manager listed on the first page of this Community Protection Statement document, or call 311 and mention the Site is in the NYC Voluntary Cleanup Program.

**Utility Mark-outs:** To promote safety during excavation in this cleanup, the contractor is required to first identify all utilities and must perform all excavation and construction work in compliance with NYC Department of Buildings regulations.

**Soil and Liquid Disposal:** All soil and liquid material removed from the Site as part of the cleanup will be transported and disposed of in accordance with all applicable City, State and Federal regulations, and required permits will be obtained.

**Soil Chemical Testing and Screening:** All excavations will be supervised by a trained and properly qualified environmental professional. In addition to extensive sampling and

chemical testing of soils on the Site, excavated soil will be screened continuously using hand-held instruments, by sight, and by smell to ensure proper material handling and management, and community protection.

**Stockpile Management:** Soil stockpiles will be kept covered with tarps to prevent dust, odor and erosion. Stockpiles will be frequently inspected. Damaged tarp covers will be promptly replaced. Stockpiles will be protected with silt fences. Hay bales will be used, as needed, to protect storm water catch basins and other discharge points.

**Trucks and Covers:** Loaded trucks leaving the Site will be covered in compliance with applicable laws and regulations to prevent dust and odor. Trucks will be properly recorded in logs and records and placarded in compliance with applicable City, State and Federal laws, including those of the New York State Department of Transportation. If loads contain wet material that can leak, truck liners will be used. All transport of materials will be performed by licensed truckers and in compliance with applicable laws and regulations.

**Imported Material:** All fill materials proposed to be brought onto the Site will comply with rules outlined in this cleanup plan and will be inspected and approved by a qualified worker located on the Site. Waste materials will not be brought onto the Site. Trucks entering the Site with imported clean materials will be covered in compliance with applicable laws and regulations.

**Equipment Decontamination:** All equipment used for cleanup work will be inspected and washed, if needed, before it leaves the Site. Trucks will be cleaned at a truck inspection station on the property before leaving the Site.

**Housekeeping:** Locations where trucks enter or leave the Site will be inspected every day and cleaned regularly to ensure that they are free of dirt and other materials from the Site.

**Truck Routing:** Truck routes have been selected to: (a) limit transport through residential areas and past sensitive nearby properties; (b) maximize use of city-mapped truck routes; (c) limit total distance to major highways; (d) promote safety in entry to highways; (e) promote overall safety in trucking; and (f) minimize off-Site line-ups (queuing) of trucks entering the property. Operators of loaded trucks leaving the Site will be instructed not to stop or idle in the local neighborhood.

**Final Report:** The results of all cleanup work will be fully documented in a final report (called the Remedial Action Report) that will be available for public review online. A link to the online document repository and the public library with Internet access nearest the Site are listed on the first page of this Community Protection Statement document

**Long-Term Site Management:** If long-term protection is needed after the cleanup is complete, the property owner will be required to comply with an ongoing Site Management Plan that calls for continued inspection of protective controls, such as Site covers. The Site Management Plan is evaluated and approved by the NYC Office of Environmental Remediation. Requirements that the property owner must comply with are defined either in the property's deed or established through a city environmental designation registered with the Department of Buildings. A certification of continued protectiveness of the cleanup will be required from time to time to show that the approved cleanup is still effective.

## **REMEDIAL ACTION WORK PLAN**

### **1.0 Project Background**

Kingspoint Heights LLC is working with the NYC Office of Environmental Remediation (OER) in the New York City Voluntary Cleanup Program and in the “E” Designation Program to investigate and remediate a property located at 3475 Third Avenue located at 3475 Third Avenue in the Morrisania section of Bronx, New York (the Site). A Remedial Investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP) in a manner that will render the Site protective of public health and the environment consistent with the contemplated end use. This RAWP establishes remedial action objectives, provides a remedial alternatives analysis that includes consideration of a permanent cleanup, and provides a description of the selected remedial action. The remedial action 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.

### **1.1 Site Location and Background**

The Site consists of portions of one lot in the Morrisania section of Bronx, New York identified as Block 2372 and Lot 32 on the New York City Tax Map. The lot is being subdivided and will create Lot 37 for the Site and a new lot 32 for northern remainder of the existing lot. Figure 2 shows the Site location. The Site is approximately 17,600-square feet (Lot 32 is 24,728 square feet in total) and is bounded by lots 11, 13, 15 and 18 to the west, which include vacant land, parking and residential uses; to the north are two, five story commercial structures (these buildings occupy the remainder of Lot 32, north of the Site); Lot 41 to the south contains a multi-family residential building, and Third Avenue is located to the east. A map of the site boundary is shown in Figure 1. The project site is currently occupied by two structures. A two story building comprised of community space on the ground floor and offices on the second floor is located at the southern end of the Site. To the north, and occupying the remainder of the Site, is a three story building with retail and self-storage on the ground floor and self-storage on the

second and third floor. Historical operations at the Site have included a chemical company, automotive repair, manufacture of textiles, manufacture of bed springs, and dyeing and finishing.

## **1.2 Redevelopment Plan**

Development plans for the Site include the demolition of existing on-site structures and construction of a twelve story residential building with commercial space on the ground floor. A cellar accessed by a ramp down from a Third Avenue entrance at the southeast corner of the building will extend across the entire Site. The cellar will contain a laundry room, parking and utility rooms. Total excavation depth for the cellar is anticipated to be approximately fourteen feet below surface grade (bsg). Groundwater has been documented at depths between 15.75 and 15.90 feet below surface grade. The total volume of material to be excavated to facilitate construction of the cellar is anticipated to be 17,600 square feet x 14 feet = 246,400 cubic feet, minus 31,500 cubic feet where three existing cellars exist in the southern and eastern portions of the site for a net total of 214,900 cubic feet (8,000 cubic yards). It is anticipated that the excavated material will be comprised of three waste streams including: soils containing elevated lead requiring special handling and disposition (the sole “hotspot” on the site, estimated at less than 100 cubic yards) poor quality urban fill exclusive of the “hotspot” (2,600 cubic yards), bedrock (1,600 cubic yards), and native soils (3,800 cubic yards). The poor quality urban fill will be disposed of as non-hazardous regulated waste; bedrock and native soils will be managed as unregulated material.

A layout of the initial proposed site development is presented in Figure 3.

The remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

## **1.3 Description of Surrounding Property**

The subject property is located in an urban area comprised primarily of multi-family residential and commercial properties. A description of the adjoining and nearby properties is provided in the Table below.

**Table: Land Uses in the Vicinity of the Subject Property**

North	<ul style="list-style-type: none"> <li>• Self-storage</li> </ul>	<ul style="list-style-type: none"> <li>• residential/commercial</li> </ul>
East	<ul style="list-style-type: none"> <li>• residential/commercial</li> </ul>	<ul style="list-style-type: none"> <li>• residential/commercial</li> </ul>
South	<ul style="list-style-type: none"> <li>• residential/commercial</li> </ul>	<ul style="list-style-type: none"> <li>• residential/commercial</li> </ul>
West	<ul style="list-style-type: none"> <li>• Automotive repair shop</li> <li>• Vacant lot</li> <li>• Multi-family residential</li> </ul>	<ul style="list-style-type: none"> <li>• residential/commercial</li> </ul>

Figure 4 shows the surrounding land usage.

#### **1.4 Summary of Past Site Uses and Areas of Concern**

Historical records indicate that the Site was developed as early as 1891. The current on-site buildings were constructed sometime between 1909 and 1951 and historical operations included a chemical company, automotive repair, manufacture of textiles, manufacture of bed springs, and dyeing and finishing. The Site was formerly registered as a large quantity generator of hazardous waste (1996), and a small quantity generator (1998 and 2002). Wastes generated included non-listed corrosive wastes, non-listed ignitable wastes, non-listed reactive wastes, toluene diisocyanate, and phenol. Two fuel-oil bulk storage tanks (both approximately 2,500 gallons in size) are located within concrete vaults, one at the northern portion of the southern building cellar and one at the southern portion of the northern storage building cellar.

The AOCs identified for this site include:

1. Potential contamination in soil and groundwater near abandoned, fuel oil storage tanks.
2. Potential releases from historical uses of the properties (various manufacturing) resulting in contamination of soil, groundwater and/or soil gas.

3. Potential presence of poor quality urban fill of unknown volume.

## **1.5 Summary of Work Performed under the Remedial Investigation**

ESI performed the following scope of work:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Collected samples from two mechanized soil borings and eight test pits extended by URS and extended five manual soil borings across the entire project Site, and collected 18 soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Collected samples from one groundwater monitoring well installed by URS and collected samples groundwater samples from two test pits extended by URS to the groundwater interface to establish groundwater flow and collected three groundwater samples for chemical analysis to evaluate groundwater quality;

Installed seven temporary soil vapor probes, and collected seven soil vapor samples for chemical analysis.

## **1.6 Summary of Findings of Remedial Investigation**

A remedial investigation was performed and the results are documented in a companion document called "Remedial Investigation Report, 3475 Third Avenue, Bronx, NY, dated April, 2015 (RIR).

1. Elevation of the property at the Third Avenue sidewalk ranges from 43.2 feet to 45.1 feet.
2. Depth to groundwater ranges from between 15.78 and 15.90 feet below sidewalk level at the Site according to geotechnical reports. Groundwater flow is generally from northeast to southwest beneath the Site.

3. Depth to bedrock is variable throughout the site and is shallower in the west and south, becoming relatively deeper to the north and east. Shallow bedrock is present at depths between 1'9" and 8'7" below the surface of the concrete floor along the western edge of the site with the shallowest bedrock in the southwest corner. Bedrock is present at depths between 17' and 22' below the surface of the concrete slab in the eastern half of the Site.
4. The stratigraphy of the site, from the surface (concrete floor of the self-storage area, or unfinished basement floors) down, consists of between 0.5' and 2' of urban fill (ash, slag, coal dust) underlain by a layer of native, coarse reddish brown sand with varying amounts of silt and gravel that extends to bedrock. Bedrock depths vary from between 1-2 feet below the surface at the western side of the site to 17 feet below sidewalk grade at the eastern side of the site.
5. Soil/fill samples collected during the RI were compared to NYSDEC Part 375-6 Unrestricted Use (Track 1) and Restricted Residential Use (Track 2) Soil Cleanup Objectives (SCOs). One VOC, acetone (max. of 0.051 mg/Kg) was detected above its Unrestricted Use SCO. Several SVOCs were identified at low concentrations, all below their respective Unrestricted Use SCOs. Metals including arsenic (max 27.9 mg/Kg), barium (max 3,850 mg/Kg), iron (max 83,100 mg/Kg), lead (max 2,960 mg/Kg), mercury (max 1.54 mg/Kg), and zinc (max 2,500 mg/Kg) were detected above Restricted Residential SCOs. All these maximum concentrations were detected in one shallow sample location (TP-3 (0-2')), indicating a hotspot location. Chromium (max 63.9 mg/Kg), copper (max 164 mg/Kg) and nickel (max 32.8 mg/Kg) also exceeded their Unrestricted Use SCOs. Three pesticides, 4,4'-DDD (max 0.039 mg/Kg) 4,4'-DDE (max 0.237 mg/Kg), and 4,4'-DDT (max 0.279 mg/Kg) were detected above their Unrestricted Use SCOs at five shallow samples. No PCBs were detected above Unrestricted Use SCOs.
6. Groundwater samples collected during the RI were compared to NYSDEC 6NYCRR Part 703.5 Groundwater Quality Standards (GQS). Groundwater samples showed no detected concentrations of pesticides or PCBs. The only VOC detected above GQS was acetone (max of 6.3 ug/L) at W-2. One SVOC, hexachlorobenzene (at 0.35 ug/L

- in MW-5) exceeded its GQS. Several metals were identified in groundwater, and of those, sodium (max 702,000 ug/L), magnesium (max 59,800 u/L) and iron (max 1,120 ug/L) were detected above their respective GQSs.
7. Soil vapor samples collected during the RI were compared to the compounds listed in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion. Soil vapor results show a wide range of compounds throughout the property including BTEX and associated petroleum related compounds as well as chlorinated hydrocarbons. The concentrations of BTEX compounds were detected at maximum concentration of 86 ug/m<sup>3</sup>. Most compounds were detected at concentrations less than 20 ug/m<sup>3</sup>, except for acetone, that was detected at maximum concentrations of 113 ug/m<sup>3</sup>. Chlorinated VOCs methylene chloride (max 74 ug/m<sup>3</sup>), carbon tetrachloride (max 53.2 ug/m<sup>3</sup>), and trichloroethene (max 10 ug/m<sup>3</sup>) were detected in one or more soil vapor samples. Concentrations of TCE are above monitoring level ranges established by NYSDOH. Tetrachloroethene, and 1,1,1-trichloroethane were detected below their respective monitoring level ranges.

For more detailed results, consult the RIR. Based on an evaluation of the data and information from the RIR and this RAWP, disposal of significant amounts of hazardous waste is not anticipated at this site.

## **2.0 Remedial Action Objectives**

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

### **Soil**

- Prevent direct contact with contaminated soil.
- Prevent migration of soil vapor into dwelling and other occupied structures.

### 3.0 Remedial Alternatives Analysis

The goal of the remedy selection process is to select a remedy that is protective of human health and the environment taking into consideration the current, intended and reasonably anticipated future use of the property. The remedy selection process begins by establishing RAOs for media in which chemical constituents were found in exceedance of applicable standards, criteria and guidance values (SCGs). Remedial alternatives are then developed and evaluated based on the following ten criteria:

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

As required, a Track 1 Unrestricted Use scenario is evaluated for the remedial action. The following is a detailed description of the alternatives analyzed to address impacted media at the Site:

#### **Alternative 1:**

- Selection of NYSDEC 6NYCRR Part 375 Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs).
- Removal of all soil/fill exceeding Track 1 Unrestricted Use SCOs throughout the Site and confirmation that Track 1 Unrestricted Use SCOs have been achieved with post-excavation endpoint sampling. If soil/fill containing analytes at concentrations above Unrestricted Use SCOs is still present at the base of the excavation after removal of all soil required for construction of the new building's cellar level is complete, additional

excavation would be performed to ensure complete removal of soil/ fill that does not meet Track 1 Unrestricted Use SCOs.

- No Engineering or Institutional Controls are required for a Track 1 cleanup. As part of development, sub-grade ventilated parking would be installed to prevent potential exposures from soil vapor in the future.

**Alternative 2:**

- Removal of all soil/fill exceeding Track 2 Restricted Residential SCO's, as defined in NYSDEC 6NYCRR Part 375-6.8, and confirmation that Track 2 Restricted Residential SCOs have been achieved with post-excavation endpoint sampling. The new building's cellar level to a depth of approximately 14 feet across the entire Site. Based on the results of the Remedial Investigation, it is expected that SCO's would be achieved by excavating for construction to a depth of 4 feet and thus SCO's are expected to be achieved. If soil/fill containing analytes at concentrations above Track 2 SCOs is still present at the base of the excavation, additional excavation would be performed to meet Track 2 SCOs.
- Placement of a composite cover system over the entire Site to prevent exposure to remaining soil/fill;
- Installation of a waterproofing/vapor barrier system beneath the building slab and along foundation side walls to prevent potential exposures from soil vapor;
- Establishment of use restrictions including prohibitions on the use of groundwater from the Site; prohibitions of restricted Site uses, such as farming or vegetable gardening, to prevent future exposure pathways; and prohibition of a higher level of land use without OER approval;
- Establishment of an approved Site Management Plan (SMP) to ensure long-term management of these Engineering and Institutional Controls including the performance of periodic inspections and certification that the controls are performing as they were intended. The SMP will note that the property owner and property owner's successors and assigns must comply with the approved SMP; and
- The property will continue to be registered with an E-Designation at the NYC Buildings Department.

### **3.1 Threshold Criteria**

#### **Protection of Public Health and the Environment**

This criterion is an evaluation of the remedy's ability to protect public health and the environment, and an assessment of how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through removal, treatment, and implementation of Engineering Controls or Institutional Controls. Protection of public health and the environment must be achieved for all approved remedial actions.

Alternative 1 would be protective of human health and the environment by removing all soil/fill exceeding Track 1 Unrestricted Use SCO's and groundwater protection standards, thus eliminating potential for direct contact with contaminated soil/fill once construction is complete and eliminating the risk of contaminants leaching into groundwater.

Alternative 2 would achieve comparable protections of human health and the environment by excavation and removal of most of the historic fill at the Site and by ensuring that remaining soil/fill on-Site meets Track 4 Site-Specific SCO's, as well as by placement of Institutional and Engineering Controls, including a composite cover system. The composite cover system would prevent direct contact with any remaining on-Site soil/fill. Implementing Institutional Controls including a Site Management Plan and continuing the E-designation would ensure that the composite cover system remains intact and protective of public health. Establishment of Track 4 Site-Specific SCO's would minimize the risk of contamination leaching into groundwater.

For both Alternatives, potential exposure to contaminated soils or groundwater during construction would be minimized by implementing a Construction Health and Safety Plan, an approved Soil/Materials Management Plan, and Community Air Monitoring Plan (CAMP). Potential contact with contaminated groundwater would be prevented as its use is prohibited by city laws and regulations. Potential future migration of off-Site soil vapors into the new building would be prevented by installing a vapor barrier below the building slab and outside foundations walls below grade.

## **3.2 Balancing Criteria**

### **Compliance with Standards, Criteria and Guidance (SCGs)**

This evaluation criterion assesses the ability of the alternative to achieve applicable standards, criteria and guidance.

Alternative 1 would achieve compliance with the remedial goals, chemical-specific SCGs and RAOs for soil through removal of soil to achieve Track 1 Unrestricted Use SCO's and Protection of Groundwater SCO's. Compliance with SCGs for soil vapor would also be achieved by installing a waterproofing/vapor barrier system below the new building's basement slab and continuing the vapor barrier outside of subgrade foundation walls, as part of development. In addition, the cellar of the building will contain a parking garage with high volume air exchange that conforms to the NYC Building Code.

Alternative 2 would achieve compliance with the remedial goals, chemical-specific SCG's and RAOs for soil through removal of soil to meet Track 4 Site-Specific SCO's. Compliance with SCG's for soil vapor would also be achieved by installing a waterproofing/vapor barrier system below the new building's basement slab and continuing the vapor barrier outside of subgrade foundation walls. A Site Management Plan would ensure that these controls remained protective for the long term. In addition, the cellar of the building will contain a parking garage with high volume air exchange that conforms to the NYC Building Code and will mediate any potential accumulation of soil vapors inside the building.

Health and safety measures contained in the CHASP and Community Air Monitoring Plan (CAMP) will be implemented during Site redevelopment under this RAWP. For both Alternatives, focused attention on means and methods employed during the remedial action would ensure that handling and management of contaminated material would be in compliance with applicable SCGs. These measures will protect on-site workers and the surrounding community from exposure to Site-related contaminants.

## **Short-Term Effectiveness and Impacts**

This evaluation criterion assesses the effects of the alternative during the construction and implementation phase until remedial action objectives are met. Under this criterion, alternatives are evaluated with respect to their short term effects during the remedial action on public health and the environment during implementation of the remedial action, including protection of the community, protection of onsite workers and environmental impacts.

Both Alternative 1 and 2 have similar short-term effectiveness during their implementation, as each requires excavation of historic fill material. Both alternatives would result in short-term dust generation impacts associated with excavation, handling, load out of materials, and truck traffic. Short-term impacts could potentially be higher for Alternative 1 since excavation of greater amounts of historical fill material would take place. However, focused attention to means and methods during a Track 1 removal action, including community air monitoring and appropriate truck routing, would minimize the overall impact of these activities.

An additional short-term adverse impact and risks to the community associated with both remedial alternatives is increased truck traffic. Truck traffic will be routed on the most direct course using major thoroughfares where possible and flag persons will be used to protect pedestrians at Site entrances and exits.

The potential adverse impact to the community, workers and the environment for both alternatives would be minimized through implementation of control plans including a Construction Health and Safety Plan, a Community Air Monitoring Plan (CAMP) and a Soil/Materials Management Plan (SMMP), during all on-Site soil disturbance activities and would minimize the release of contaminants into the environment. Both alternatives provide short-term effectiveness in protecting the surrounding community by decreasing the risk of contact with on-Site contaminants. Construction workers operating under appropriate management procedures and a Construction Health and Safety Plan (CHASP) would provide protection from on-Site contaminants by using personal protective equipment would be worn consistent with the documented risks within the respective work zones.

## **Long-term effectiveness and permanence**

This evaluation criterion addresses the results of a remedial action in terms of its permanence and quantity/nature of waste or residual contamination remaining at the Site after response objectives have been met, such as permanence of the remedial alternative, magnitude of remaining contamination, adequacy of controls including the adequacy and suitability of Engineering Controls/Institutional Controls (ECs/ICs) that may be used to manage contaminant residuals that remain at the Site and assessment of containment systems and ICs that are designed to eliminate exposures to contaminants, and long-term reliability of ECs.

Alternative 1 would achieve long-term effectiveness and permanence related to on-Site contamination by permanently removing all impacted soil/fill above Track 1 Unrestricted Use SCO's. Removal of on-Site contaminant sources will also prevent future groundwater contamination.

Alternative 2 would provide long-term effectiveness by removing most on-Site contamination and attaining Track 2 Restricted Residential SCOs; installing a composite cover system across the Site; maintaining use restrictions; establishing an SMP to ensure long-term management of ICs and ECs; and maintaining registration as an E-designated property to memorialize these controls for the long term. The SMP would ensure long-term effectiveness of all ECs and ICs by requiring periodic inspection and certification that these controls and restrictions continue to be in place and are functioning as they were intended, assuring that protections designed into the remedy continue to provide the required level of protection.

## **Reduction of toxicity, mobility, or volume of contaminated material**

This evaluation criterion assesses the remedial alternative's use of remedial technologies that permanently and significantly reduce toxicity, mobility, or volume of contaminants as their principal element. The following is the hierarchy of source removal and control measures that are to be used to remediate a Site, ranked from most preferable to least preferable: removal and/or treatment, containment, elimination of exposure and treatment of source at the point of exposure. It is preferred to use treatment or removal to eliminate contaminants at a Site, reduce

the total mass of toxic contaminants, cause irreversible reduction in contaminants mobility, or reduce of total volume of contaminated media.

Alternative 1 will permanently eliminate the toxicity, mobility, and volume of contaminants from on-Site soil by removing all soil in excess of Track 1 Unrestricted Use SCO's.

Alternative 2 would remove all of the historic fill at the Site, and all remaining on-Site soil/fill beneath the new building will meet Track 2 Restricted Residential SCO's.

Alternative 1 would remove a greater total mass of contaminants from the Site. The removal of soil to 14 feet for the new development in both scenarios would lessen the difference in contaminant mass removal between these two alternatives.

### **Implementability**

This evaluation criterion addresses the technical and administrative feasibility of implementing an alternative and the availability of various services and materials required during its implementation, including technical feasibility of construction and operation, reliability of the selected technology, ease of undertaking remedial action, monitoring considerations, administrative feasibility (e.g. obtaining permits for remedial activities), and availability of services and materials.

The techniques, materials and equipment to implement both Alternatives 1 and 2 are readily available and have been proven to be effective in remediating the contaminants present on the Site. They use standard equipment and technologies that are well established in the industry. The reliability of each remedy is also high. There are no special difficulties associated with any of the activities proposed.

### **Cost Effectiveness**

This evaluation criterion addresses the cost of alternatives, including capital costs (such as construction costs, equipment costs, and disposal costs, engineering expenses) and site

management costs (costs incurred after remedial construction is complete) necessary to ensure the continued effectiveness of a remedial action.

Since historic fill at the Site was found to extend to a depth of up to 4 feet below grade during the RI, and the new building requires excavation of the entire Site to a depth of 14 feet, the costs associated with both Alternative 1 and Alternative 2 will likely be comparable. Costs associated with Alternative 1 could potentially be higher than Alternative 2 if soil with analytes above Track 1 Unrestricted Use SCOs is encountered below the excavation depth required for development. Additional costs would include installation of additional shoring/underpinning, disposal of additional soil, and import of clean soil for backfill. However, long-term costs for Alternative 2 are likely higher than Alternative 1 based on implementation of a Site Management Plan as part of Alternative 2.

The remedial plan would couple the remedial action with the redevelopment of the Site, lowering total costs. The remedial plan will also consider the selection of the most appropriate disposal facilities to reduce transportation and disposal costs during cleanup and redevelopment of the Site.

## **Community Acceptance**

This evaluation criterion addresses community opinion and support for the remedial action.

Observations here will be supplemented by public comment received on the RAWP.

This RAWP will be subject to a public review under the NYC VCP and will provide the opportunity for detailed public input on the remedial alternatives and the selected remedy. This public comment will be considered by OER prior to approval of this plan. The Citizen Participation Plan for the project is provided in Appendix D. Observations here will be supplemented by public comment received on the RAWP. Under both alternatives, the overall goals of the remedial program, to protect public health and the environment and eliminate potential contaminant exposures, have been broadly supported by citizens in NYC communities.

## Land Use

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

The current, intended, and reasonably anticipated future land use of the Site and its surroundings are compatible with the selected remedy of soil remediation. The proposed future use of the Site includes construction of a twelve story residential building with commercial space on the ground floor. A full cellar, which extends to the property boundaries, will contain a laundry room, parking and utility rooms. Following remediation, the Site will meet either Track 1 Unrestricted Use or Track 2 Restricted Residential SCOs, both of which are protective of public health and the environment for its planned residential use. The proposed use is compliant with the property's zoning and is consistent with recent development patterns. The areas surrounding the site are comprised primarily of multi-family residential and commercial properties. The proposed development would clean up the property and make it safer, create new employment opportunities, living space for affordable and supportive housing and associated societal benefits to the community, and other economic benefits from land revitalization.

Temporary short-term project impacts are being mitigated through site management controls and truck traffic controls during remediation activities. Following remediation, the Site will meet either Track 1 Unrestricted Use SCOs or Track 2 Restricted Residential SCOs, both of which are protective of public health and the environmental for its planned use.

The Site is not in close proximity to important cultural resources, including federal or state historic or heritage sites or Native American religious sites, natural resources, waterways, wildlife refuges, wetlands, or critical habitats of endangered or threatened species. The Site is located in an urban area and not in proximity to fish or wildlife and neither alternative would result in any potential exposure pathways of contaminant migration affecting fish or wildlife. The remedial action is also protective of groundwater natural resources. The Site does not lie in a Federal Emergency Management Agency (FEMA)-designated flood plain. Both alternatives are equally protective of natural resources and cultural resources. Improvements in the current environmental condition of the property achieved by both alternatives considered in this plan are consistent with the City's goals for cleanup of contaminated land.

### **Sustainability of the Remedial Action**

This criterion evaluates the overall sustainability of the remedial action alternatives and the degree to which sustainable means are employed to implement the remedial action including those that take into consideration NYC's sustainability goals defined in PlaNYC: A Greener, Greater New York. Sustainability goals may include: maximizing the recycling and reuse of non-virgin materials; reducing the consumption of virgin and non-renewable resources; minimizing energy consumption and greenhouse gas emissions; improving energy efficiency; and promotion of the use of native vegetation and enhancing biodiversity during landscaping associated with Site development.

While Alternative 2 would potentially result in lower energy usage based on reducing the volume of material transported off-Site, both remedial alternatives are comparable with respect to the opportunity to achieve sustainable remedial action. The remedial plan for either alternative would take into consideration the shortest trucking routes during off-Site disposal of historic fill and other soils, which would reduce greenhouse gas emissions and conserve energy used to fuel trucks. The New York City Clean Soil Bank program is available for reuse of any clean native soils under either alternative. A complete list of green remedial activities considered as part of the NYC VCP is included in a Sustainability Statement.

## **4.0 Remedial Action**

### **4.1 Summary of Preferred Remedial Action**

The preferred remedial action alternative is at this Site Alternative 1 (Track 1 cleanup). The preferred remedial action achieves protection of public health and the environment for the intended use of the property. The preferred remedial action will achieve all of the remedial action objectives established for the project and addresses applicable SCGs. The preferred remedial action is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants. The preferred remedial action alternative is cost effective and implementable and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

20. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan.
21. Performance of a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
22. Selection of Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs) and subsequent (post-excavation) collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of Track 1 SCOs.
23. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
24. 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).
25. Excavation and removal of soil/fill exceeding Unrestricted Use (Track 1) SCOs.  
The entire footprint of the building area (about 100% of the property) will be excavated to a depth of approximately 14 feet below grade for development purposes.  
Approximately 8,000 cubic yards of soil/fill will be removed from the Site and properly disposed at an appropriately licensed or permitted facility.

26. 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.
27. 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.
28. Dewatering in compliance with city, state, and federal laws and regulations. Extracted groundwater will either be containerized for off-site licensed or permitted disposal or will be treated under a permit from New York City Department of Environmental Protection (NYCDEP) to meet pretreatment requirements prior to discharge to the sewer system.
29. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
30. Performance of all activities required for the remedial action, including acquisition of required permits and attainment of pretreatment requirements, in compliance with applicable laws and regulations.
31. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
32. Submission of a Remedial Action Report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and lists any changes from this RAWP.
33. Removal of two vaulted ASTs from the southeastern portion of the site.
34. Registration of tanks and reporting of any petroleum spills associated with AST's and appropriate closure of these petroleum spills in compliance with applicable local, State and Federal laws and regulations.

If Track 1 Unrestricted Use SCOs are not achieved, the following construction elements implemented as part of new development will constitute Engineering and Institutional Controls:

35. As part of development, construction of an engineered composite cover consisting of a six-inch thick concrete building slab with an 8-inch clean granular sub-base beneath all building areas.

36. As part of development, installation of a vapor barrier system consisting of vapor barrier beneath the building slab and outside of sub-grade foundation sidewalls to mitigate soil vapor migration into the building. The vapor barrier system will consist of a minimum 20 mil thick vapor barrier product below the slab throughout the full building area. All welds, seams and penetrations will be properly sealed to prevent preferential pathways for vapor migration.
37. As part of new development, construction and operation of a cellar parking garage with high volume air exchange in conformance with NYC Building Code.
38. The property will continue to be registered with an E-Designation at the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in this RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

## **4.2 Soil Cleanup Objectives and Soil/ Fill Management**

Track 1 SCOs are proposed for this project and SCOs are defined in 6 NYCRR Part 375, Table 6.8(a) Track 1 Unrestricted Use. If Track 1 SCOs are not achieved, the SCOs for this Site will include 6 NYCRR Part 375, Table 6.8(b) Track 2 Restricted Residential Use SCOs.

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 Appendix F. Discrete contaminant sources (such as hotspots) identified during the remedial action will be identified by GPS or surveyed. This information will be provided in the Remedial Action Report.

## **Soil/Fill Excavation and Removal**

The entire site, excluding a ramp down from street level at the southeast corner of the site, will be excavated to a depth of 14' below sidewalk grade. The location of planned excavations is shown in Figure 7. The total quantity of soil/fill expected to be excavated and disposed off-Site is 8,000 cubic yards. For each disposal facility to be used in the remedial action, 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 OER prior to any transport and disposal of soil at a facility.

The proposed disposal locations for Site-derived impacted materials are listed below. Additional disposal locations established at a later date will be reported promptly to the OER Project Manager.

<b>Disposal Facility</b>	<b>Waste Type</b>	<b>Estimated Quantities</b>
To be determined	M Bedrock fragments (unregulated) from depths between 1' to 14' below surface grade across western portions of the site.	N1,600 cubic yards
To be determined	M Non-Hazardous Regulated Waste (poor quality urban fill from depths of 0-4' below grade across entire Site)	N2,600 cubic yards
To be determined	M Subsurface soils meeting UUSCOs from 4' to 14' below surface grade across eastern portion of site.	N3,800 cubic yards

Disposal facilities will be reported to OER when they are identified and prior to the start of remedial action.

### **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 RAR. The RAR 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. Five confirmation samples will be collected from the base of the excavation at locations indicated on Figure 6. To evaluate attainment of Track 1 or 2 SCOs, analytes will include TAL metals and SVOCs according to analytical methods described above. If Track 1 Unrestricted Use SCOs are pursued, samples will be analyzed for VOCs, SVOCs, pesticides, PCBs and metals according to analytical methods described above.

## **Hotspot End-point Sampling**

One hotspot has been identified at this Site, consisting of soils with elevated lead. No end point sampling will be conducted at this location for the following reasons:

- Existing sample data fully define the lateral and vertical extent of this “hotspot”; and
- All soils surrounding this “hotspot” will be removed as part of the Site Development Plan.

For any previously unidentified hotspots encountered during the implementation of this remedial program, including any hotspots identified during the remedial action, hotspot removal actions will be performed to ensure that hotspots are fully removed and end-point samples will be collected at the following frequency:

1. For excavations less than 20 feet in total perimeter, at least one bottom sample and one sidewall sample biased in the direction of surface runoff.
2. For excavations 20 to 300 feet in perimeter:
  - For surface removals, one sample from the top of each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.
  - For subsurface removals, one sample from each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.
3. For sampling of volatile organics, bottom samples should be taken within 24 hours of excavation, and should be taken from the zero to six-inch interval at the excavation floor. Samples taken after 24 hours should be taken at six to twelve inches.

4. For contaminated soil removal, post remediation soil samples for laboratory analysis should be taken immediately after contaminated soil removal. If the excavation is enlarged horizontally, additional soil samples will be taken pursuant to bullets 1-3 above.

Post-remediation end-point sample locations and depth will be biased towards the areas and depths of highest contamination identified during previous sampling episodes unless field indicators such as field instrument measurements or visual contamination identified during the remedial action indicate that other locations and depths may be more heavily contaminated. In all cases, post-remediation samples should be biased toward locations and depths of the highest expected contamination.

If either LNAPL and/or DNAPL are detected, appropriate samples will be collected for characterization and “finger print analysis” and required regulatory reporting (i.e. spills hotline) will be performed.

### **Quality Assurance/Quality Control**

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°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. Decontamination of non-dedicated sampling equipment will consist of the following:

- Gently tap or scrape to remove adhered soil
- Rinse with tap water

- Wash with Alconox® detergent solution and scrub
- Rinse with tap water
- Rinse with distilled or deionized water

Prepare field blanks by pouring distilled or deionized water over decontaminated equipment and collecting the water in laboratory provided containers. Trip blanks will be used whenever samples are transported to the laboratory for analysis of VOCs. Trip blanks will not be used for samples to be analyzed for metals, SVOCs or pesticides.

### **Import of Soils**

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

- Track 2 Restricted 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 unknown at this time. Soil import is not planned on this project; however, the above procedures are included as a contingency.

### **Reuse of Onsite Soils**

Reuse of onsite soils already onsite will be performed in conformance with the Soil/Materials Management Plan in Appendix F. The estimated quantity of soil to be reused on this project is not known at this time. Reuse soils will meet the SCO's established for this project.

## **4.3 Engineering Controls**

The remedial action will achieve Track 1 Unrestricted Use SCOs and no Engineering Controls are required. However, the following design elements will be incorporated into the project as part of the development:

- (1) Composite Cover System
- (2) Soil Vapor Barrier System
- (3) Cellar Parking Garage

If Track 1 is not achieved, these elements will constitute Engineering Controls that will be employed in the remedial action to address residual contamination remaining at the Site.

### **Composite Cover System**

Exposure to residual soil/fill will be prevented by an engineered, composite cover system to be built on the Site. This composite cover system will be comprised of 6 inches of reinforced concrete slab underlain by 8 inches of clean sub-base material in building areas. Figure 8 shows the typical design for each remedial cover type used on this Site. Figure 8 number shows the location of each cover type built at the Site.

The composite cover system will be a permanent engineering control. The system will be inspected and its performance certified at specified intervals as required by this RAWP and the Site Management Plan. A Soil and Materials Management Plan will be included in the Site Management Plan and will outline the procedures to be followed in the event that the composite cover system and underlying residual soil/fill is disturbed after the remedial action is complete. Maintenance of this composite cover system will be described in the Site Management Plan in the Remedial Action Report.

### **Vapor Barrier System**

Migration of soil vapor from onsite or offsite sources into the building will be mitigated with a combination of building slab and vapor barrier. The vapor barrier will consist of the vapor barrier system will consist of a minimum 20 mil thick vapor barrier product below the slab throughout the full building area. All welds, seams and penetrations will be properly sealed to prevent preferential pathways for vapor migration.

The vapor barrier will extend throughout the area occupied by the footprint of the new building and up the foundation sidewalls and will be installed in accordance with manufacturer specifications.

A plan view showing the location of the proposed vapor barrier system is provided in Figure 8. Typical design sections for the vapor barrier on slab and sidewalls are provided in Figure 8. Product specification sheets are provided in Appendix H. The Remedial Action Report will include as-built drawings and diagrams; manufacturer documentation; and photographs. The Remedial Action Report will include a PE-certified letter (on company letterhead) from the primary contractor responsible for installation oversight and field inspections and a copy of the manufacturer's certificate of warranty.

The Vapor Barrier System is a permanent engineering control and will be inspected and its performance certified at specified intervals as required by this RAWP and the Site Management Plan. A Soil and Materials Management Plan will be included in the Site Management Plan and will outline the procedures to be followed in the event that the composite cover system and underlying vapor barrier system is disturbed after the remedial action is complete. Maintenance of these systems will be described in the Site Management Plan in the Remedial Action Report.

#### **4.4 Institutional Controls**

A Track 1 remedial action is proposed and Institutional Controls are not required. If a Track 1 remedial action is not achieved, Institutional Controls (IC's) will be incorporated in this remedial action to manage residual soil/fill and other media and render the Site protective of public health and the environment. These IC's define the program to operate, maintain, inspect and certify the performance of Engineering Controls and Institutional Controls on this property. Institutional Controls would be implemented in accordance with a Site Management Plan included in the final Remedial Action Report (RAR). Institutional Controls would be:

- Continued registration of the E-Designation for the property. This RAWP includes a description of all ECs and ICs and summarizes the requirements of the SMP which will note that the property owner and property owner's successors and assigns must comply with the approved SMP;

- Submittal of a SMP in the RAR for approval by OER that provides procedures for appropriate operation, maintenance, inspection, and certification of ECs and IC's. SMP will require that the property owner and property owner's successors and assigns will submit to OER a periodic written statement that certifies that: (1) controls employed at the Site are unchanged from the previous certification or that any changes to the controls were approved by OER; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. OER retains the right to enter the Site in order to evaluate the continued maintenance of any controls. This certification shall be submitted at a frequency to be determine by OER in the SMP and will comply with RCNY §43-1407(1)(3).
- Vegetable gardens and farming on the Site are prohibited in contact with residual soil materials;
- Use of groundwater underlying the Site is prohibited without treatment rendering it safe for its intended use;
- All future activities on the Site that will disturb residual material must be conducted pursuant to the soil management provisions in an approved SMP;
- The Site will be used for residential and commercial activities and will not be used for a higher level of use without prior approval by OER.

#### **4.5 Site Management Plan**

A Track 1 remedial action is proposed and Site Management is not required. If a Track 1 remedial action is not achieved, Site Management will be required and will be the last phase of remediation. Site Management will begin with the approval of the Remedial Action Report and issuance of the Notice of Completion (NOC) for the Remedial Action. The Site Management Plan (SMP) describes appropriate methods and procedures to ensure implementation of all ECs and ICs that are required by this RAWP. The Site Management Plan is submitted as part of the RAR but will be written in a manner that allows its use as an independent document. Site Management continues until terminated in writing by OER. The property owner is responsible

to ensure that all Site Management responsibilities defined in the Site Management Plan are implemented.

The SMP will provide a detailed description of the procedures required to manage residual soil/fill left in place following completion of the remedial action in accordance with the Voluntary Cleanup Agreement with OER. This includes a plan for: (1) implementation of EC's and ICs; (2) operation and maintenance of EC's; (3) inspection and certification of IC's and EC's.

Site management activities and EC/IC certification will be scheduled by OER on a periodic basis to be established in the RAR and the SMP and will be subject to review and modification by OER. The Site Management Plan will be based on a calendar year and certification reports will be due for submission to OER by July 30 of the year following the reporting period.

#### **4.6 Qualitative Human Health Exposure Assessment**

The objective of the qualitative exposure assessment is to identify potential receptors and pathways for human exposure to the contaminants of concern (COC) that are present at, or migrating from, the Site. The identification of exposure pathways describes the route that the COC takes to travel from the source to the receptor. An identified pathway indicates that the potential for exposure exists; it does not imply that exposures actually occur.

Data and information reported in the Remedial Investigation Report (RIR) are sufficient to complete a Qualitative Human Health Exposure Assessment (QHHEA) for this project. As part of the VCP process, a QHHEA was performed to determine whether the Site poses an existing or future health hazard to the Site's exposed or potentially exposed population. The sampling data from the RI were evaluated to determine whether there is any health risk under current and future conditions by characterizing the exposure setting, identifying exposure pathways, and evaluating contaminant fate and transport. This QHHEA was prepared in accordance with Appendix 3B and Section 3.3 (b) 8 of the NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation.

## **Known and Potential Contaminant Sources**

Based on the results of the RIR, the contaminants of concern are:

**Soil:** Elevated concentrations of lead (2,960 mg/Kg) and several other metals were detected above RRSCOs in shallow soils at TP-3. Data indicate this to be an isolated hotspot; however, shallow soils (0-4') across the site contain concentrations of metals above RRSCOs.

**Groundwater:** No significant impacts to groundwater have been documented at the site. Such elevated metals concentrations as were documented are likely to be the result of road salting in the vicinity. **Soil Vapor:** Two halogen compounds were detected above their respective Air Guideline Values in SV-3 at the northwest corner of the site.

## **Nature, Extent, Fate and Transport of Contaminants**

**Soil:** Metals in shallow soils (0-4') throughout the site have the potential to migrate into the air as dust during soil disturbance associated with demolition and construction activities.

**Soil Vapor:** Trichloroethene was detected above Air Guideline Value in SV-3 at the northwest corner of the site. Soil and groundwater data indicate that the source of this compound is likely to be off-site.

## **Receptor Populations**

**On-Site Receptors:** The site is currently vacant office/community space (southern building) and an active self-storage unit facility (northern building) and access to the Site is restricted by locked doors. Onsite receptors are limited to site representatives and visitors granted access to the property who have no exposure to on-site contaminants because of the presence of a concrete slab. During construction, potential on-site receptors include construction workers, site representatives, and visitors. Under proposed future conditions, potential on-site receptors include adult and child building residents, workers and visitors.

**Off-Site Receptors:** Potential off-site receptors within a 500 foot radius of the Site include adult and child residents; commercial and construction workers; pedestrians; and trespassers based on the following land uses within 500 feet of the Site:

1. Commercial Businesses – existing and future

2. Residential Buildings – existing and future
3. Building Construction/ Renovation – existing and future
4. Pedestrians, Trespassers, Cyclists – existing and future
5. Schools – existing and future

Specifically, the Ready, Set, Learn LLC, daycare facility adjoining to the south at 3467 Third Avenue, and The Habitot ES, LLC daycare center adjoining to the east, at 3480 Third Avenue.

## **Potential Routes of Exposure**

Three potential primary routes exist by which chemicals can enter the body: ingestion, inhalation, and dermal absorption. Exposure can occur based on the following potential media:

- Ingestion of groundwater or fill/ soil;
- Inhalation of vapors or particulates; and,
- Dermal absorption of groundwater or fill/ soil.

## **Potential Exposure Points**

*Current Conditions:* The site is currently capped with a concrete slab (with the exception of the unfinished basement floors in the southeastern portion of the site) there are no potential exposure pathways from ingestion, inhalation, or dermal absorption of soil/ fill. Groundwater is not exposed at the site. The site is served by the public water supply and groundwater is not used at the site for potable supply and there is no potential for exposure.

*Construction/ Remediation Conditions:* During the remedial action, onsite workers will come into direct contact with surface and subsurface soils as a result of on-Site construction and excavation activities. On-Site construction workers potentially could ingest, inhale or have dermal contact with exposed impacted soil and fill. Similarly, off-Site receptors could be exposed to dust and vapors from on-Site activities. Due to the depth of groundwater, direct contact with groundwater is not expected. During construction, on-Site and off-Site exposures to contaminated dust from on-Site will be addressed through the Soil/Materials Management Plan, dust controls, and through the implementation of the Community Air-Monitoring Program and a Construction Health and Safety Plan.

*Proposed Future Conditions:* Under future remediated conditions, all soils in excess of Track 1SCOs will be removed. The site will be fully capped, preventing potential direct exposure to soil and groundwater remaining in place, and engineering controls (vapor barrier parking garage) will prevent any potential exposure due to inhalation by preventing soil vapor intrusion. The site is served by the public water supply, and groundwater is not used at the site. There are no plausible off-site pathways for oral, inhalation, or dermal exposure to contaminants derived from the site.

### **Overall Human Health Exposure Assessment**

There are potential complete exposure pathways for the current site condition. There are potential complete exposure pathways that require mitigation during implementation of the remedy. There are no complete exposure pathways under future conditions after the site is developed. This assessment takes into consideration the reasonably anticipated use of the site, which includes a residential structure, site-wide surface cover, and a subsurface vapor barrier system for the building. Under current conditions, on-Site exposure pathways exist for those with access to the Site and trespassers. During remedial construction, on-Site and off-Site exposures to contaminated dust from historic fill material will be addressed through dust controls, and through the implementation of the Community Air Monitoring Program, the Soil/Materials Management Plan, and a Construction Health and Safety Plan. Potential post-construction use of groundwater is not considered an option because groundwater in this area of New York City is not used as a potable water source. There are no surface waters in close proximity to the Site that could be impacted or threatened.

<b>Environmental Media &amp; Exposure Route</b>	<b>Human Exposure Assessment for Proposed Remedial Action</b>
Direct contact with surface and subsurface soils	<ul style="list-style-type: none"> <li>• There is not direct contact because all soils in excess of Track 1 SCO's will be removed from the site</li> </ul>
Ingestion of groundwater	<ul style="list-style-type: none"> <li>• The area is served by an upstate water supply and groundwater is not being used for potable water supply. Groundwater use for potable supply onsite is prohibited by municipal law.</li> </ul>
Direct contact with groundwater	<ul style="list-style-type: none"> <li>• All soils in excess of Track 1 SCO's and Groundwater Protection Standards will be removed from the site. Groundwater is not impacted by site conditions.</li> </ul>
Direct contact with soil vapor	<ul style="list-style-type: none"> <li>• Soil vapor is not impacted at the site</li> <li>• Contact with impacted soil vapor will be prevented by a soil vapor barrier</li> <li>• Contact with soil vapor will be prevented with a soil vapor barrier and an active/passive sub slab depressurization system.</li> <li>• Contact with soil vapor will be prevented with a soil vapor barrier and a high volume air exchange required by the Building Code for ventilation of the sub-grade parking garage.</li> </ul>

## **5.0 Remedial Action Management**

### **5.1 Project Organization and Oversight**

Principal personnel who will participate in the remedial action include the Professional Engineer (PE), Jolanda Jansen and the Qualified Environmental Professional (QEP), Paul H. Ciminello. OER will be notified of any change to principal personnel.

### **5.2 Site Security**

Site access will be controlled through gated entrances to the fenced property.

### **5.3 Work Hours**

The hours for operation of cleanup will comply with the NYC Department of Buildings construction code requirements or according to specific variances issued by that agency. The hours of operation will be conveyed to OER during the pre-construction meeting.

### **5.4 Construction Health and Safety Plan**

The Health and Safety Plan is included in Appendix G. The Site Safety Coordinator will be Paul H. Ciminello. Remedial work performed under this RAWP will be in full compliance with applicable health and safety laws and regulations, including Site and OSHA worker safety requirements and HAZWOPER requirements. Confined space entry, if any, will comply with OSHA requirements and industry standards and will address potential risks. The parties performing the remedial construction work will ensure that performance of work is in compliance with the HASP and applicable laws and regulations. The HASP pertains to remedial and invasive work performed at the Site until the issuance of the Notice of Completion.

All field personnel involved in remedial activities will participate in training required under 29 CFR 1910.120, such as 40-hour hazardous waste operator training and annual 8-hour refresher training. Site Safety Officer will be responsible for maintaining workers training records. Personnel entering any exclusion zone will be trained in the provisions of the HASP and will comply with all requirements of 29 CFR 1910.120. Site-specific training will be provided to

field personnel. Additional safety training may be added depending on the tasks performed. Emergency telephone numbers will be posted at the site location before any remedial work begins. A safety meeting will be conducted before each shift begins. Topics to be discussed include task hazards and protective measures (physical, chemical, environmental); emergency procedures; PPE levels and other relevant safety topics. Meetings will be documented in a log book or specific form.

An emergency contact sheet with names and phone numbers is included in the CHASP. That document will define the specific project contacts for use in case of emergency.

## **5.5 Community Air Monitoring Plan**

Real-time air monitoring for volatile organic compounds (VOCs) and particulate levels at the perimeter of the exclusion zone or work area will be performed. Continuous monitoring will be performed for all ground intrusive activities and during the handling of contaminated or potentially contaminated media. 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.

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 bailing/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. Exceedences of action levels observed during performance of the Community Air Monitoring Plan (CAMP) will be reported to the OER Project Manager and included in the Daily Report.

## **VOC Monitoring, Response Levels, and Actions**

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis 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 shutdown.

All 15-minute readings must be recorded and be available for OER 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<sup>3</sup>) 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<sup>3</sup> 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<sup>3</sup> 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<sup>3</sup> of the upwind level and in preventing visible dust migration.

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

### **5.6 Agency Approvals**

All permits or government approvals required for remedial construction have been or will be obtained prior to the start of remedial construction. Approval of this RAWP by OER does not constitute satisfaction of these requirements and will not be a substitute for any required permit.

## **5.7 Site Preparation**

### **Pre-Construction Meeting**

OER will be invited to attend the pre-construction meeting at the Site with all parties involved in the remedial process prior to the start of remedial construction activities.

### **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.

### **Utility Marker Layouts, Easement Layouts**

The presence of utilities and easements on the Site will be fully investigated prior to the performance of invasive work such as excavation or drilling under this plan by using, at a minimum, the One-Call System (811). Underground utilities may pose an electrocution, explosion, or other hazard during excavation or drilling activities. All invasive activities will be performed in compliance with applicable laws and regulations including NYC Building Code to assure safety. Utility companies and other responsible authorities will be contacted to locate and mark the locations, and a copy of the Mark-Out Ticket will be retained by the contractor prior to the start of drilling, excavation or other invasive subsurface operations. Overhead utilities may also be present within the anticipated work zones. Electrical hazards associated with drilling in the vicinity of overhead utilities will be prevented by maintaining a safe distance between overhead power lines and drill rig masts.

Proper safety and protective measures pertaining to utilities and easements, and compliance with all laws and regulations will be employed during invasive and other work contemplated under this RAWP. The integrity and safety of on-Site and off-Site structures will be maintained during all invasive, excavation or other remedial activity performed under the RAWP.

## **Dewatering**

Dewatering is not anticipated during remediation and construction.

## **Equipment and Material Staging**

Equipment and materials will be stored and staged in a manner that complies with applicable laws and regulations.

## **Stabilized Construction Entrance**

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 pads 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.

## **Truck Inspection Station**

An outbound-truck inspection station will be set up close to the Site exit. Before exiting the Site, trucks will be required to stop at the truck inspection station and will be examined for evidence of contaminated soil on the undercarriage, body, and wheels. Soil and debris will be removed. Brooms, shovels and clean water will be utilized for the removal of soil from vehicles and equipment, as necessary.

## **Extreme Storm Preparedness and Response Contingency Plan**

Damage from flooding or storm surge can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of support of excavation structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety structures and cause downed power lines creating dangerous site conditions and loss of power. In the event of emergency conditions caused by an extreme storm event, the enrollee will undertake the following steps for site preparedness prior to the event and response after the event.

## **Storm Preparedness**

Preparations in advance of an extreme storm event will include the following: containerized hazardous materials and fuels will be removed from the property; loose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and generators will be removed from excavated areas, trenches and depressions on the property to high ground or removed from the property; an inventory of the property with photographs will be performed to establish conditions for the site and equipment prior to the event; stockpile covers for soil and fill will be secured by adding weights such as sandbags for added security and worn or ripped stockpile covers will be replaced with competent covers; stockpiled hazardous wastes will be removed from the property; stormwater management systems will be inspected and fortified, including, as necessary: clean and reposition silt fences, hay bales; clean storm sewer filters and traps; and secure and protect pumps and hosing.

## **Storm Response**

At the conclusion of an extreme storm event, as soon as it is safe to access the property, a complete inspection of the property will be performed. A site inspection report will be submitted to OER at the completion of site inspection and after the site security is assessed. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. Damage from storm conditions that result in acute public safety threats, such as downed power lines or imminent collapse of buildings, structures or equipment will be reported to public safety authorities via appropriate means such as calling 911. Petroleum spills will be reported to NYS DEC within 2 hours of identification and consistent with State regulations. Emergency and spill conditions will also be reported to OER. Public safety structures, such as construction security fences will be repaired promptly to eliminate public safety threats. Debris will be collected and removed. Dewatering will be performed in compliance with existing laws and regulations and consistent with emergency notifications, if any, from proper authorities. Eroded areas of soil including unsafe slopes will be stabilized and fortified. Dislocated materials will be collected and appropriately managed. Support of excavation structure will be inspected and fortified as necessary. Impacted stockpiles will be contained and damaged stockpile covers will be replaced. Stormwater control systems

and structures will be inspected and maintained as necessary. If soil or fill materials are discharged off site to adjacent properties, property owners and OER will be notified and corrective measure plan designed to remove and clean dislocated material will be submitted to OER and implemented following approval by OER and granting of site access by the property owner. Impacted offsite areas may require characterization based on site conditions, at the discretion of OER. If onsite petroleum spills are identified, a qualified environmental professional will determine the nature and extent of the spill and report to NYS DEC's spill hotline at DEC 800-457-7362 within statutory defined timelines. If the source of the spill is ongoing and can be identified, it should be stopped if this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYS DEC.

### **Storm Response Reporting**

A site inspection report will be submitted to OER at the completion of site inspection. An inspection report established by OER is available on OER's website ([www.nyc.gov/oer](http://www.nyc.gov/oer)) and will be used for this purpose. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. The site inspection report will be sent to the OER project manager and will include the site name, address, tax block and lot, site primary and alternate contact name and phone number. Damage and soil release assessment will include: whether the project had stockpiles; whether stockpiles were damaged; photographs of damage and notice of plan for repair; report of whether soil from the site was dislocated and whether any of the soil left the site; estimates of the volume of soil that left the site, nature of impact, and photographs; description of erosion damage; description of equipment damage; description of damage to the remedial program or the construction program, such as damage to the support of excavation; presence of onsite or offsite exposure pathways caused by the storm; presence of petroleum or other spills and status of spill reporting to NYS DEC; description of corrective actions; schedule for corrective actions. This report should be completed and submitted to OER project manager with photographs within 24 hours of the time of safe entry to the property after the storm event.

## **5.8 Traffic Control**

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 to drive north along Third Avenue until reaching I-95.

## **5.9 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.

## **5.10 Reporting and Record Keeping**

### **Daily reports**

Daily reports providing a general summary of activities for each day of active remedial work will be emailed to the OER Project Manager by the end of the following business day. Those reports will include:

- Project number and statement of the activities and an update of progress made and locations of excavation and other remedial work performed;
- Quantities of material imported and exported from the Site;
- Status of on-Site soil/fill stockpiles;

- A summary of all citizen complaints, with relevant details (basis of complaint; actions taken; etc.);
- A summary of CAMP results noting all excursions. CAMP data may be reported;
- Photograph of notable Site conditions and activities.

The frequency of the reporting period may be revised in consultation with OER project manager based on planned project tasks. Daily email reports are not intended to be the primary mode of communication for notification to OER of emergencies (accidents, spills), requests for changes to the RAWP or other sensitive or time critical information. However, such information will be included in the daily reports. Emergency conditions and changes to the RAWP will be communicated directly to the OER project manager by personal communication. Daily reports will be included as an Appendix in the Remedial Action Report.

An alpha-numeric site map will be used to identify locations described in reports submitted to OER and is shown in Figure 9.

## **Record Keeping and Photo Documentation**

Job-site record keeping for all remedial work will be performed. These records will be maintained on-Site during the project and will be available for inspection by OER staff. Representative photographs will be taken of the Site prior to any remedial activities and during major remedial activities to illustrate remedial program elements and contaminant source areas. Photographs will be submitted at the completion of the project in the RAR in digital format (i.e. jpeg files).

### **5.11 Complaint Management**

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

## **5.12 Deviations from the Remedial Action Work Plan**

All changes to the RAWP will be reported to, and approved by, the OER Project Manager and will be documented in daily reports and reported in the Remedial Action Report. The process to be followed if there are any deviations from the RAWP will include a request for approval for the change from OER noting the following:

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

## **6.0 Remedial Action Report**

A Remedial Action Report (RAR) will be submitted to OER following implementation of the remedial action defined in this RAWP. The RAR will document that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The RAR will include:

- Information required by this RAWP;
- Text description with thorough detail of all engineering and institutional controls (if Track 1 remedial action is not achieved)
- As-built drawings for all constructed remedial elements;
- Manifests for all soil or fill disposal;
- Photographic documentation of remedial work performed under this remedy;
- Site Management Plan (if Track 1 remedial action is not achieved);
- Description of any changes in the remedial action from the elements provided in this 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;
- Continue registration of the property with an E-Designation by the NYC Department of Buildings (if Track 1 remedial action is not achieved);
- Recorded Declaration of Covenants and Restrictions. OR Continue registration of the property with an E-Designation by the NYC Department of Buildings (if Track 1 remedial action is not achieved);
- The RAWP and Remedial Investigation Report will be included as appendices to the RAR;
- Reports and supporting material will be submitted in digital form and final PDF's will include bookmarks for each appendix.

## Remedial Action Report Certification

The following certification will appear in front of the Executive Summary of the Remedial Action Report. The certification will include the following statements:

I, Jolanda Jansen, am a Professional Engineer licensed in the State of New York. I have primary direct responsibility for implementation of the remedial action for the 45-35 11<sup>th</sup> Street and 11-22 45<sup>th</sup> Road Site (NYC OER Project Number 15EH-A009Q and NYC VCP Project Number 15CVCP065Q).

I, Paul H. Ciminello am a Qualified Environmental Professional as defined in §43-140. I have primary direct responsibility for implementation of the remedial action for the 45-35 11<sup>th</sup> Street and 11-22 45<sup>th</sup> Road Site (NYC OER Project Number 15EH-A009Q and NYC VCP Project Number 15CVCP065Q).

I certify that the OER-approved Remedial Action Work Plan dated MONTH DAY YEAR and Stipulations in a letter dated MONTH DAY YEAR; if any were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquids or other material from the property were taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

Jolanda Jansen

Name

068972-1

NYS PE License Number

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Paul H. Ciminello

QEP Name

\_\_\_\_\_  
QEP Signature

\_\_\_\_\_  
Date



## 7.0 Schedule

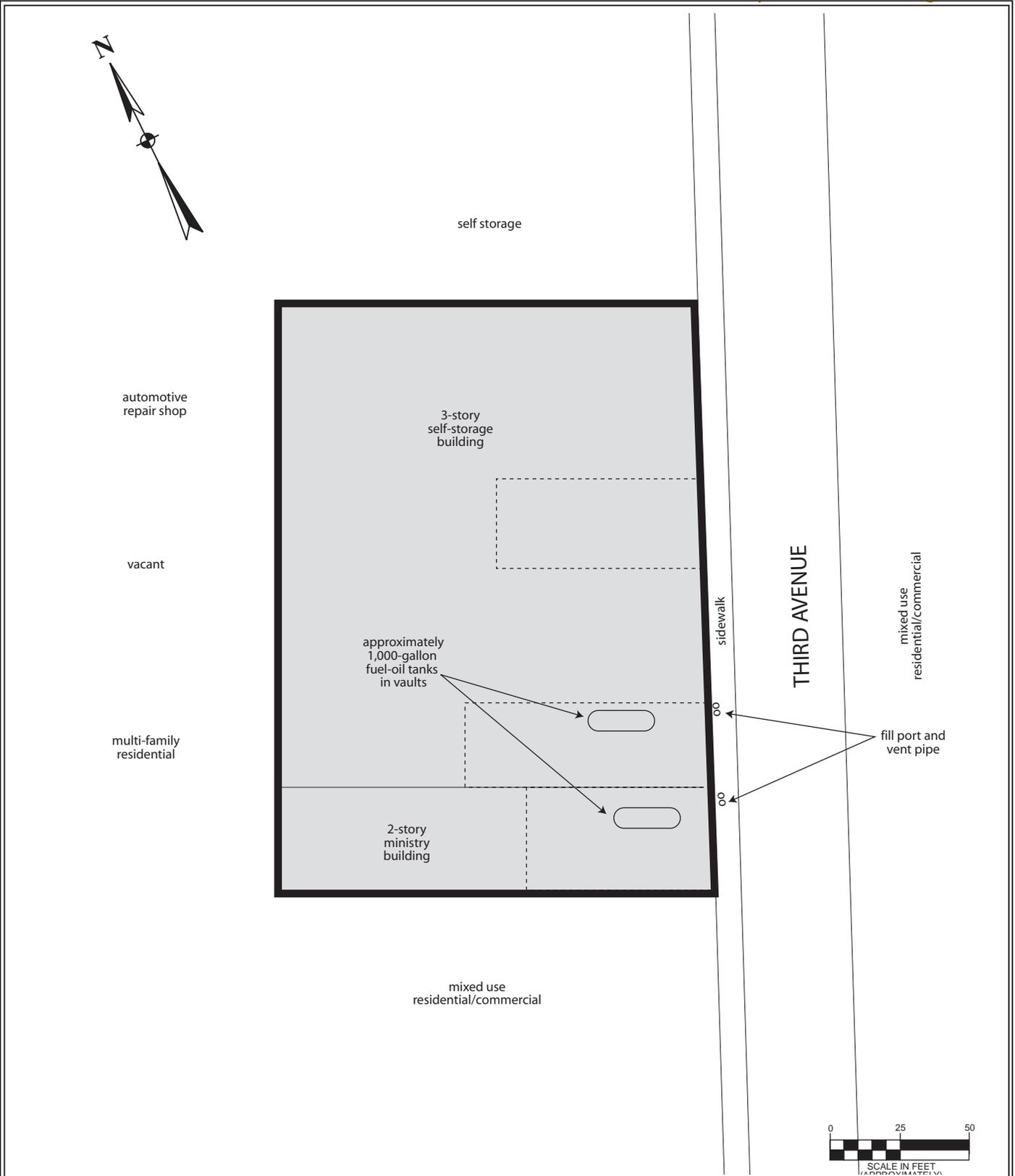
The table below presents a schedule for the proposed remedial action and reporting. If the schedule for remediation and development activities changes, it will be updated and submitted to OER. Currently, a 5 month remediation period is anticipated.

Schedule Milestone	Weeks from Remedial Action Start	Duration (weeks)
OER Approval of RAWP	number	number
Fact Sheet 2 announcing start of remedy	number	number
Remedial Excavation	number	20
Submit Remedial Action Report	20	4



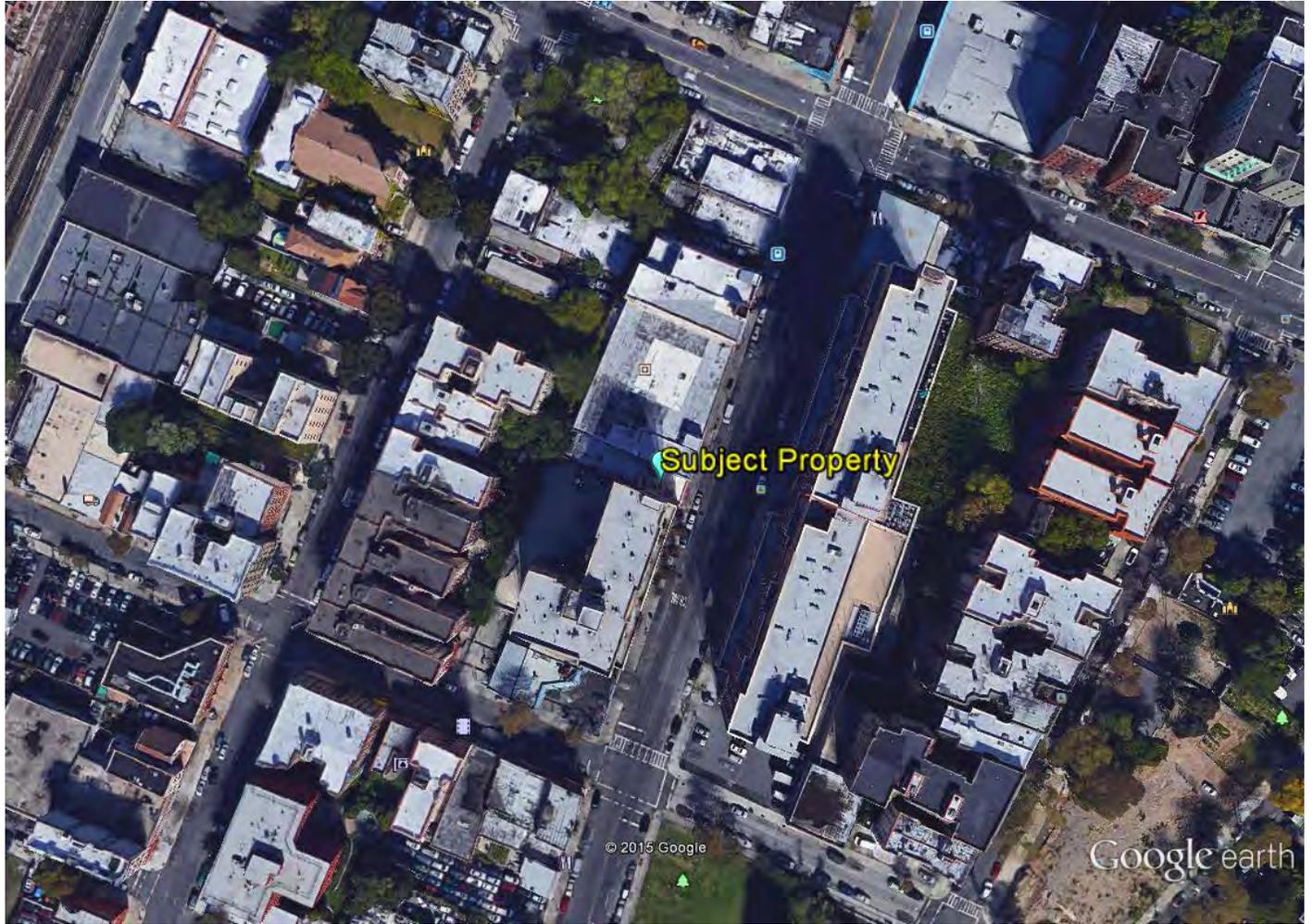
## **APPENDIX A**

### ***Figures***



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

<p><b>Figure 1: Site Map</b>          3475 Third Avenue          Borough of Bronx          New York City, New York</p>	<p>Legend:   subject property border   cellars</p>	ESI File: KB15012.40
		April 2015
		Scale as shown
		Appendix A



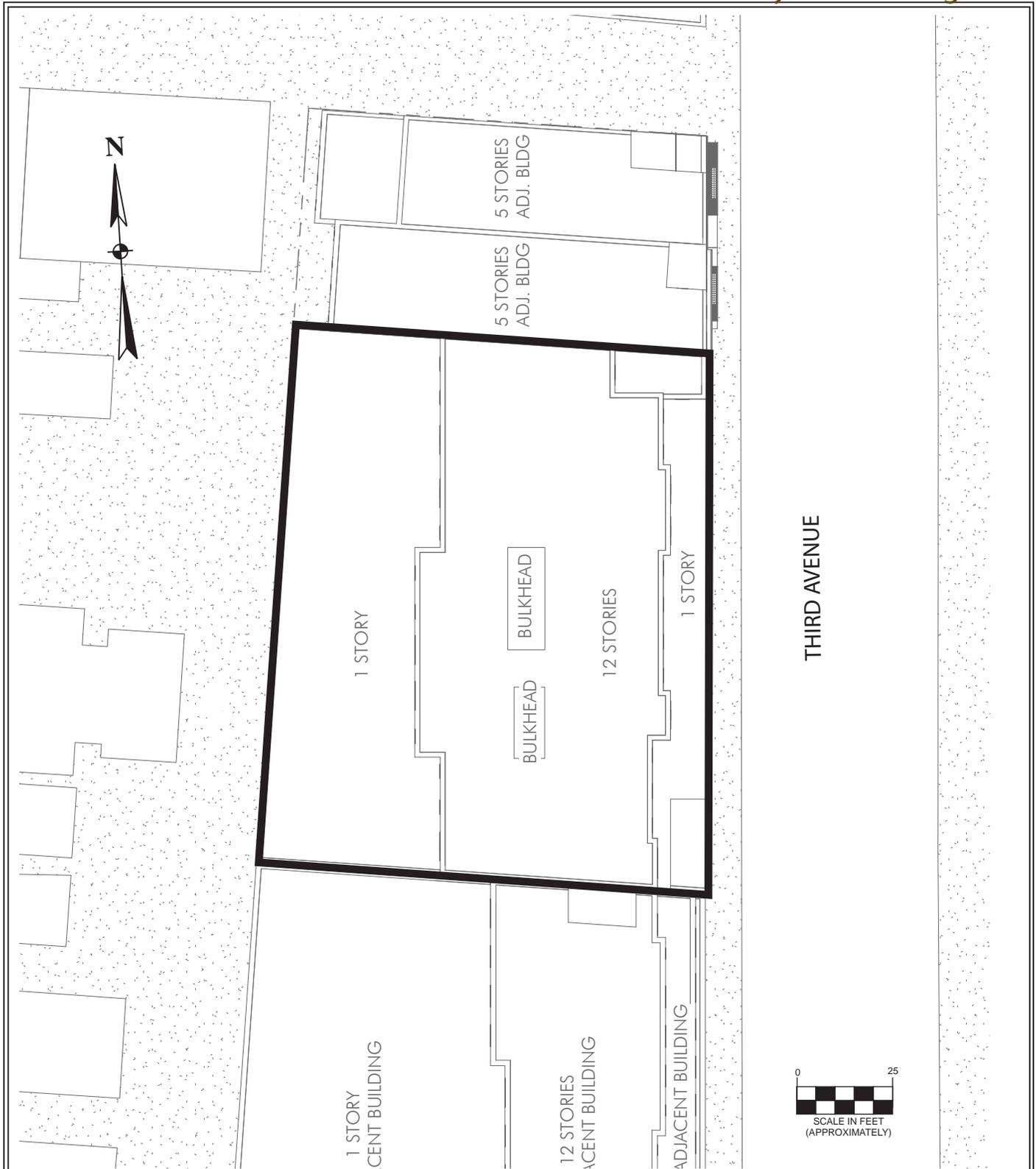
**Figure 2: Site Location Map**  
3475 Third Avenue  
Borough of Bronx  
New York City, New York



ESI File: KB15012.40

April 2015

Appendix A



Base map provided by OCV Architects - Site Plan dated 9/25/14. All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

**Figure 3: Redevelopment Plan**

3475 Third Avenue  
 Borough of Bronx  
 New York City, New York

Legend:

 subject property border

ESI File: KB15012.40

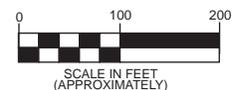
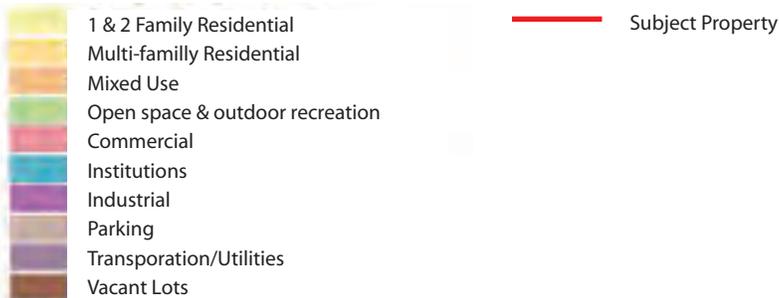
April 2015

Scale as shown

Appendix A



Legend:



Source Map provided by <http://www.oasisnyc.net/map.aspx>.

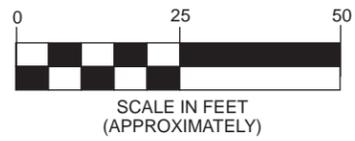
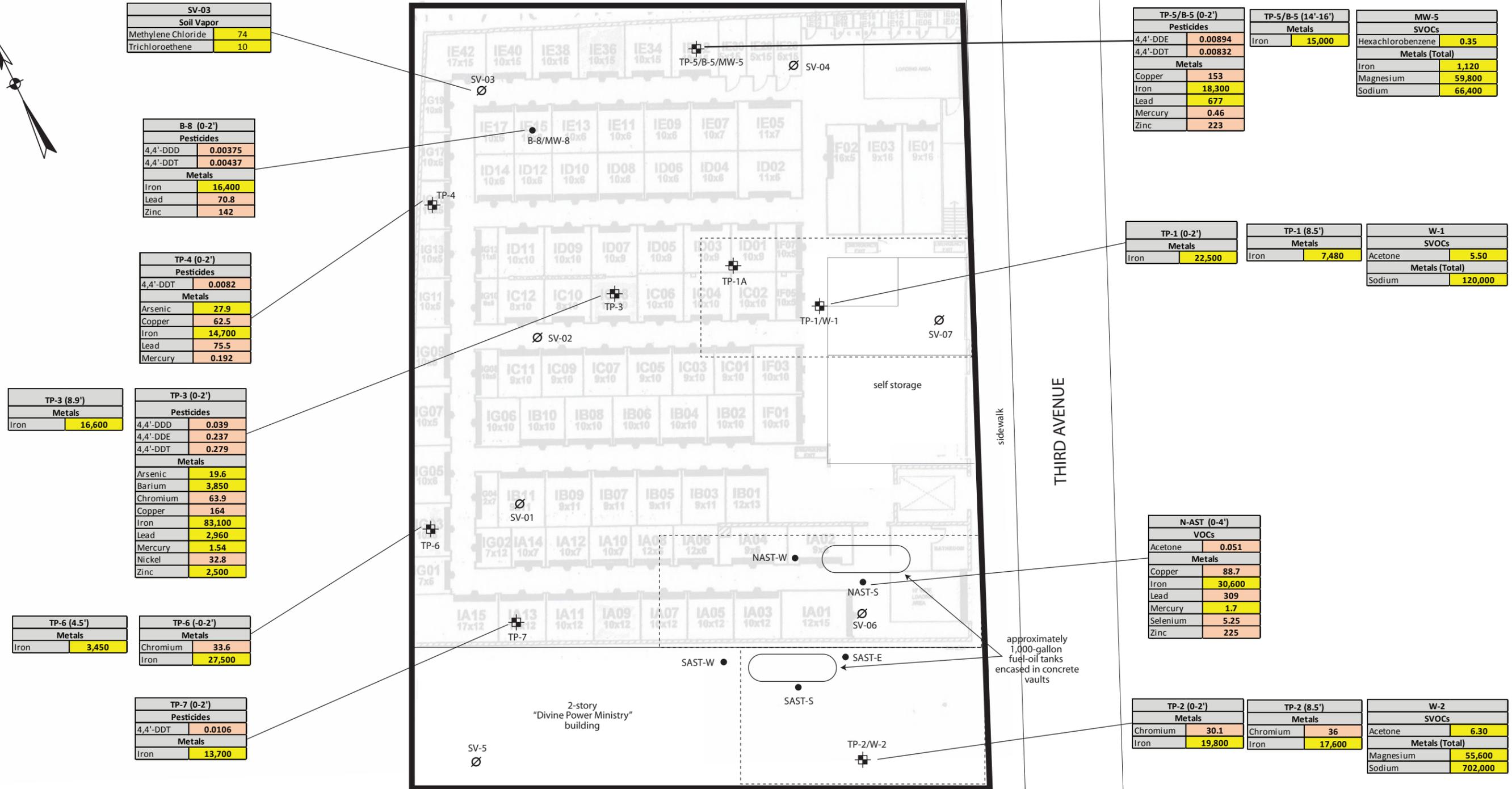
### Figure 4: Surrounding Land Use Map

3475 Third Avenue  
 Borough of Bronx  
 New York City, New York

ESI File: KB15012.40

April 2015

Appendix A



**Legend:**

- subject property border
- - - - - cellars
- ⊕ test pit location TP-1 = Test pit sample; B-# = boring sample; MW-# and W-# = water sample
- boring location
- ⊙ soil vapor location

**Soil:**

- Orange box: Concentrations > Track 1 UUSCOs
- Yellow box: Concentrations > Track 2 RRUSCOs (soil results in ppm)

**Groundwater:**

- Yellow box: Concentrations > AWQS (groundwater results in ppb)

**Soil Vapor:**

- Yellow box: Concentrations > AGVs (soil vapor results in ppm)

**Figure 5: Exceedances in Soils, Groundwater and Soil Vapor**

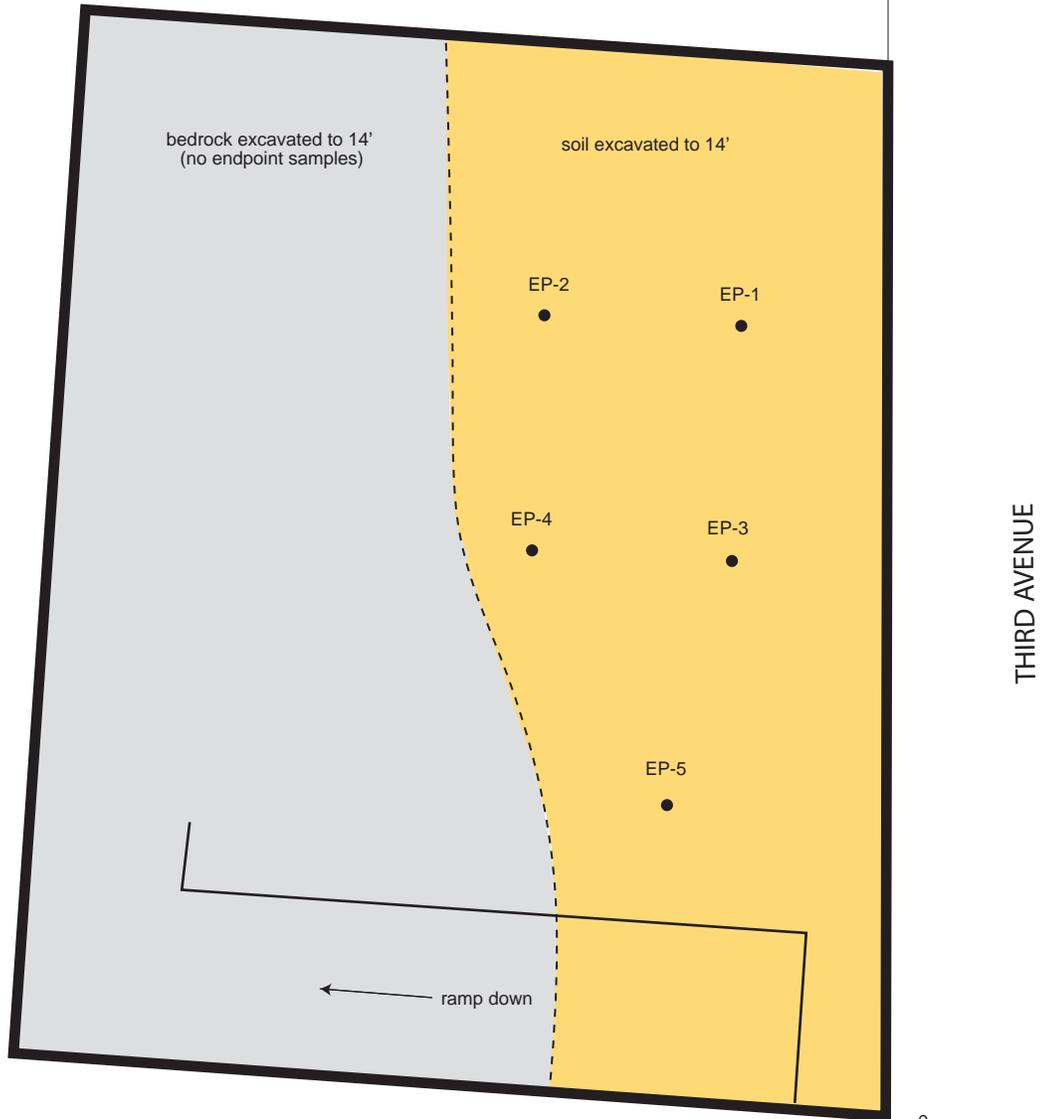
3475 Third Avenue  
Borough of Bronx  
New York City, New York

ESI File: KB15012.40

Scale as shown

April 2015 | Appendix A

All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

**Figure 6: Endpoint Sample Map**

3475 Third Avenue  
 Borough of Bronx  
 New York City, New York

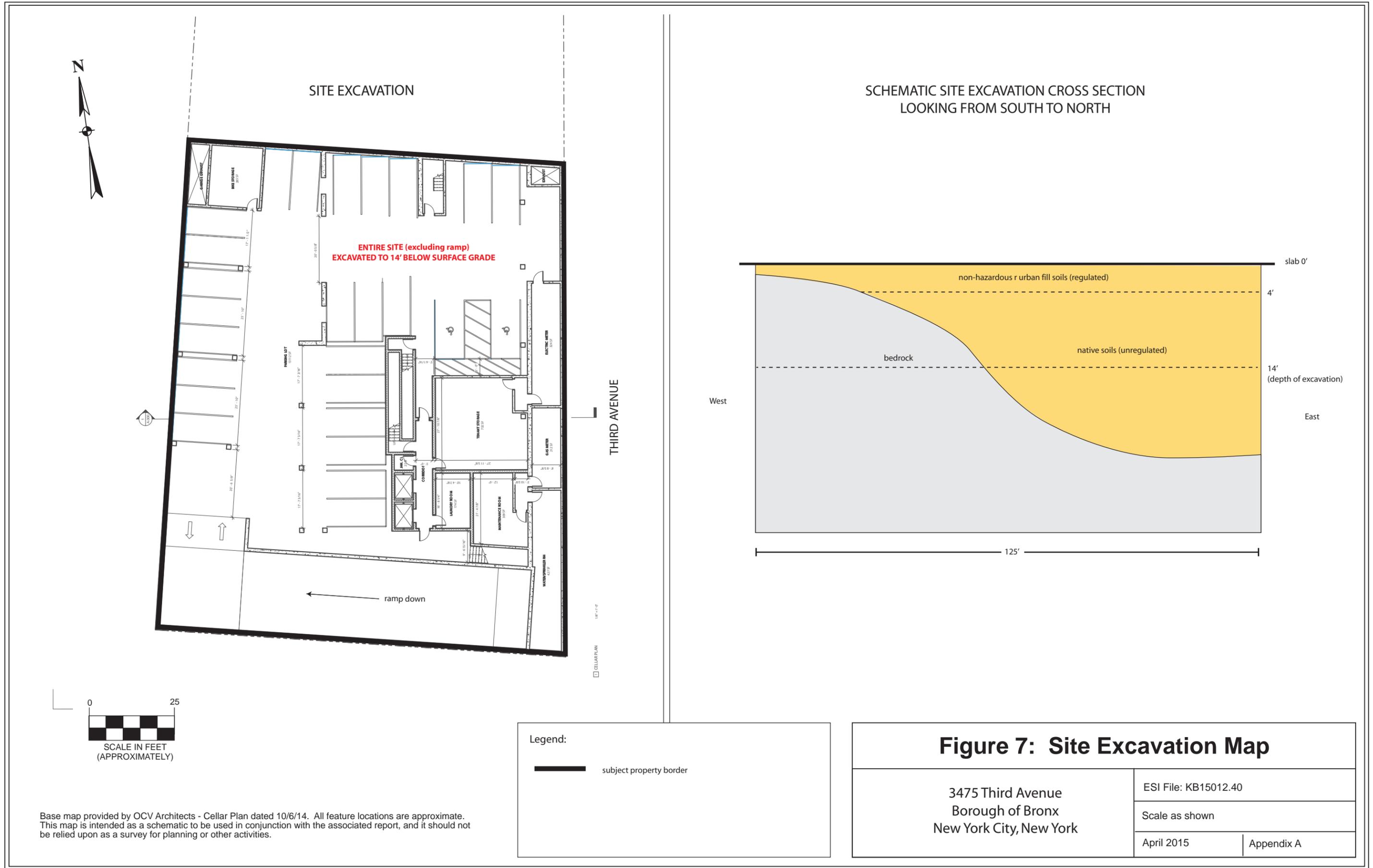
- Legend:**
- subject property border
  - approximate bedrock/soil boundary at 14' bsg per URS Geotechnical Investigation data, March 2015
  - post excavation sample location

ESI File: KB15012.40

April 2015

Scale as shown

Appendix A



SITE EXCAVATION

SCHEMATIC SITE EXCAVATION CROSS SECTION  
LOOKING FROM SOUTH TO NORTH

ENTIRE SITE (excluding ramp)  
EXCAVATED TO 14' BELOW SURFACE GRADE

THIRD AVENUE

ramp down

CELLAR PLAN  
1/8" = 1'-0"

slab 0'

non-hazardous r urban fill soils (regulated)

4'

bedrock

native soils (unregulated)

14'

(depth of excavation)

West

East

125'



Legend:  
 subject property border

**Figure 7: Site Excavation Map**

3475 Third Avenue  
Borough of Bronx  
New York City, New York

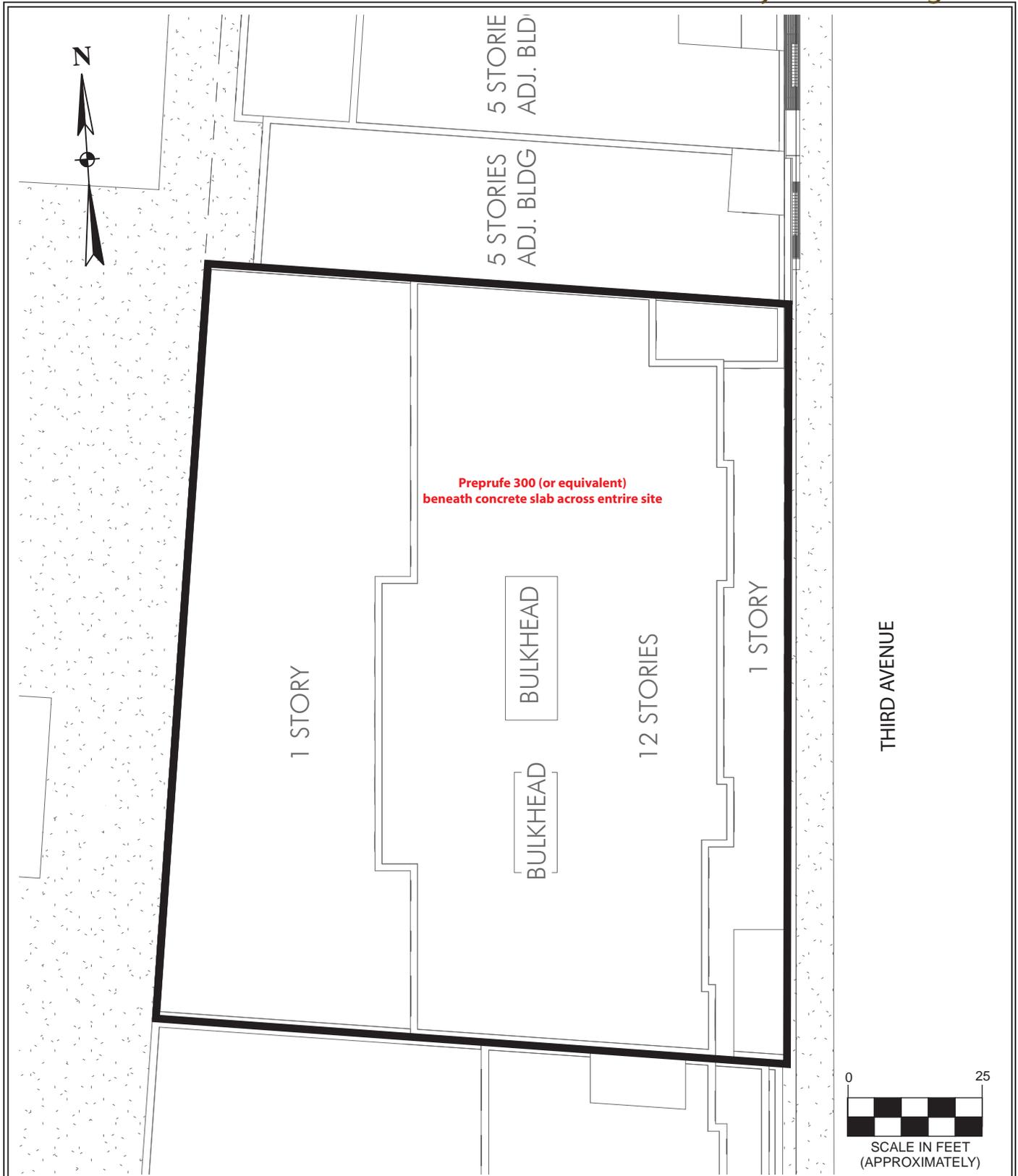
ESI File: KB15012.40

Scale as shown

April 2015

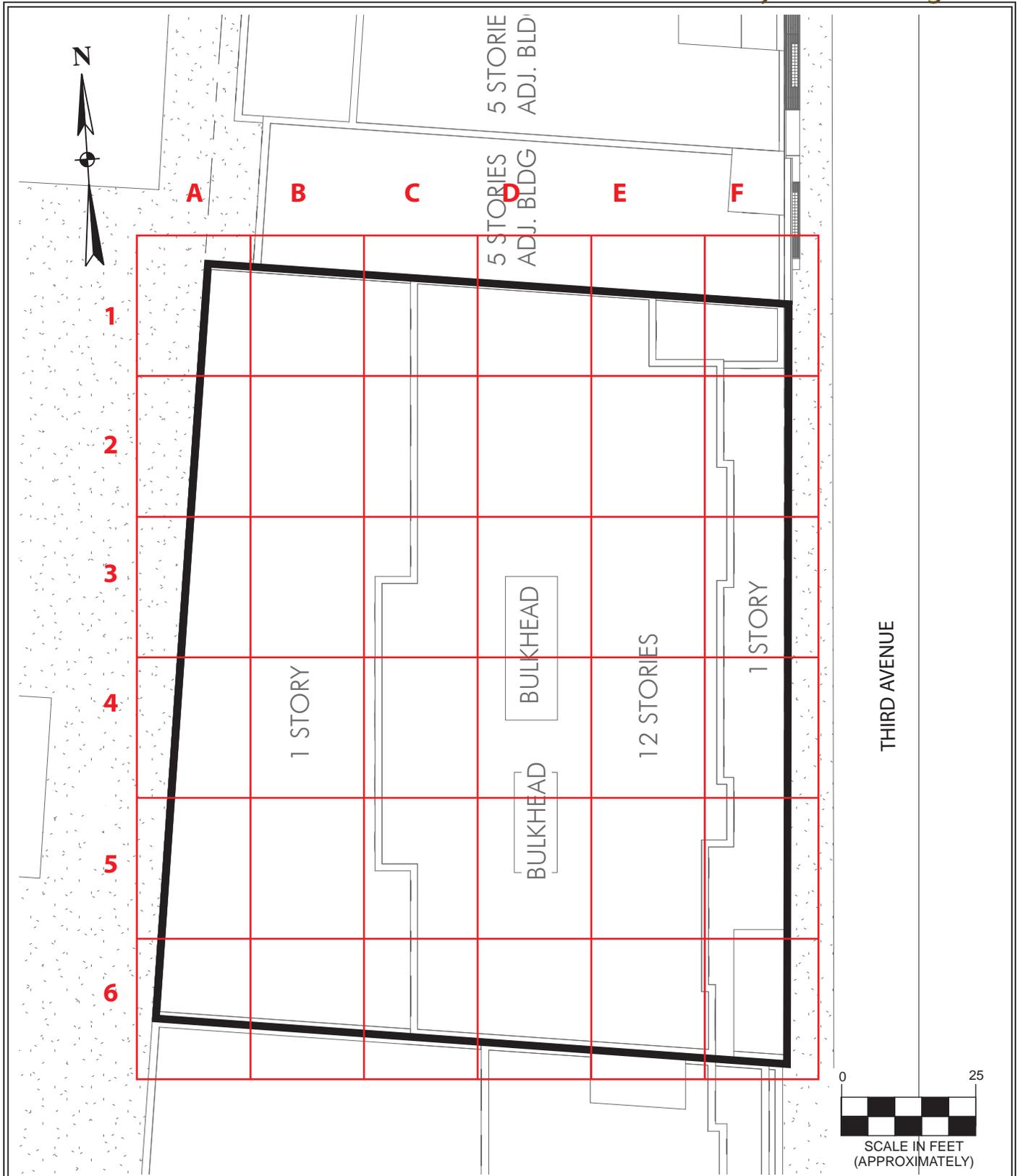
Appendix A

Base map provided by OCV Architects - Cellar Plan dated 10/6/14. All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

<p><b>Figure 8: Site-Wide Waterproofing System Plan</b>          3475 Third Avenue          Borough of Bronx          New York City, New York</p>	<p>Legend:   subject property border</p>	ESI File: KB15012.40
		April 2015
		Scale as shown
		Appendix A



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

<p><b>Figure 9: Alpha Numeric Grid Map</b>                  3475 Third Avenue                  Borough of Bronx                  New York City, New York</p>	<p>Legend:   subject property border</p>	ESI File: KB15012.40
		April 2015
		Scale as shown
		Appendix A



## **APPENDIX B**

### ***Tables***

**Table 1: VOCs in Surface Soils**

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>			Sample ID		TP-1 (0-2')		TP-2 (0-2')		TP-3 (0-2')		TP-4 (0-2')	
			Sample Date		03/02/15		03/02/15		03/02/15		03/02/15	
			Dilution Factor		1		1		1		1	
VOCs, 8260	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1,1,2-Tetrachloroethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,1,1-Trichloroethane	0.68	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,1,2,2-Tetrachloroethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,1,2-Trichloroethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,1-Dichloroethane	0.27	26	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,1-Dichloroethylene	0.33	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,1-Dichloropropylene	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,2,3-Trichlorobenzene	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,2,3-Trichloropropane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,2,4-Trichlorobenzene	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,2,4-Trimethylbenzene	3.6	52	0.0035	U	0.0063	U	0.0067	J	0.01	U		
1,2-Dibromo-3-chloropropane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,2-Dibromoethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,2-Dichlorobenzene	1.1	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,2-Dichloroethane	0.2	31	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,2-Dichloropropane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,3,5-Trimethylbenzene	8.4	52	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,3-Dichlorobenzene	2.4	49	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,3-Dichloropropane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,4-Dichlorobenzene	1.8	13	0.0035	U	0.0063	U	0.0042	U	0.01	U		
1,4-Dioxane	0.1	13	0.071	U	0.13	U	0.085	U	0.2	U		
2,2-Dichloropropane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
2-Butanone	0.12	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
2-Chlorotoluene	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
4-Chlorotoluene	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Acetone	0.05	100	0.0071	U	0.013	J	0.029		0.033	J		
Benzene	0.06	48	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Bromobenzene	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Bromochloromethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Bromodichloromethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Bromoform	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Bromomethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Carbon tetrachloride	0.76	24	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Chlorobenzene	1.1	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Chloroethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Chloroform	0.37	49	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Chloromethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
cis-1,2-Dichloroethylene	0.25	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
cis-1,3-Dichloropropylene	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Dibromochloromethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Dibromomethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Dichlorodifluoromethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Ethyl Benzene	1	41	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Hexachlorobutadiene	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Isopropylbenzene	2.3	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Methyl tert-butyl ether (MTBE)	0.93	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Methylene chloride	0.05	500	0.0071	U	0.013	U	0.0085	U	0.02	U		
Naphthalene	12	12	0.0035	U	0.0063	U	0.0042	U	0.01	U		
n-Butylbenzene	12	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
n-Propylbenzene	3.9	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
o-Xylene	0.26	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
p- & m- Xylenes	0.26	100	0.0071	U	0.013	U	0.0085	U	0.02	U		
p-Isopropyltoluene	10	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
sec-Butylbenzene	11	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Styrene	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
tert-Butylbenzene	5.9	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Tetrachloroethylene	1.3	19	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Toluene	0.7	100	0.0035	U	0.0063	U	0.0046	J	0.01	U		
trans-1,2-Dichloroethylene	0.19	100	0.0035	U	0.0063	U	0.0042	U	0.01	U		
trans-1,3-Dichloropropylene	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Trichloroethylene	0.47	21	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Trichlorofluoromethane	NA	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Vinyl acetate	0.02	NA	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Vinyl chloride	NA	0.9	0.0035	U	0.0063	U	0.0042	U	0.01	U		
Xylenes, Total	0.26	100	0.011	U	0.019	U	0.013	U	0.03	U		

Detected Concentrations  
**Concentrations > Track 1 UUSCOs**  
**Concentrations > Track 2 RRUSCOs**

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

Table 1: VOCs in Surface Soils (cont'd)

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in Bold			Sample ID		TP-5/B-5 (0-2')		TP-6 (-0-2')		TP-7 (0-2')		B-8 (0-2')	
			Sample Date		03/02/15		03/02/15		03/02/15		03/18/15	
			Dilution Factor		1		1		1		1	
VOCs, 8260	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1,1,2-Tetrachloroethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,1,1-Trichloroethane	0.68	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,1,2,2-Tetrachloroethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,1,2-Trichloroethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,1-Dichloroethane	0.27	26	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,1-Dichloroethylene	0.33	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,1-Dichloropropylene	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,2,3-Trichlorobenzene	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,2,3-Trichloropropane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,2,4-Trichlorobenzene	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,2,4-Trimethylbenzene	3.6	52	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,2-Dibromo-3-chloropropane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,2-Dibromoethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,2-Dichlorobenzene	1.1	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,2-Dichloroethane	0.2	31	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,2-Dichloropropane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,3,5-Trimethylbenzene	8.4	52	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,3-Dichlorobenzene	2.4	49	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,3-Dichloropropane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.068	U		
1,4-Dichlorobenzene	1.8	13	0.0049	U	0.0058	U	0.012	U	0.0034	U		
1,4-Dioxane	0.1	13	0.097	U	0.12	U	0.23	U	0.0034	U		
2,2-Dichloropropane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
2-Butanone	0.12	100	0.0049	U	0.0058	U	0.012	U	0.0068	U		
2-Chlorotoluene	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0068	U		
4-Chlorotoluene	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Acetone	0.05	100	0.0097	U	0.02	J	0.039	J	0.0034	U		
Benzene	0.06	48	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Bromobenzene	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Bromochloromethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Bromodichloromethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Bromoform	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Bromomethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Carbon tetrachloride	0.76	24	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Chlorobenzene	1.1	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Chloroethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Chloroform	0.37	49	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Chloromethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
cis-1,2-Dichloroethylene	0.25	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
cis-1,3-Dichloropropylene	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Dibromochloromethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Dibromomethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Dichlorodifluoromethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Ethyl Benzene	1	41	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Hexachlorobutadiene	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Isopropylbenzene	2.3	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Methyl tert-butyl ether (MTBE)	0.93	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Methylene chloride	0.05	500	0.0097	U	0.012	U	0.023	U	0.0034	U		
Naphthalene	12	12	0.0049	U	0.0058	U	0.012	U	0.0034	U		
n-Butylbenzene	12	100	0.0049	U	0.0058	U	0.012	U	0.0068	U		
n-Propylbenzene	3.9	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
o-Xylene	0.26	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
p- & m- Xylenes	0.26	100	0.0097	U	0.012	U	0.023	U	0.0034	U		
p-Isopropyltoluene	10	NA	0.0049	U	0.0058	U	0.012	U	0.0068	U		
sec-Butylbenzene	11	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Styrene	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
tert-Butylbenzene	5.9	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Tetrachloroethylene	1.3	19	0.0049	U	0.0058	U	0.012	U	0.0068	U		
Toluene	0.7	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
trans-1,2-Dichloroethylene	0.19	100	0.0049	U	0.0058	U	0.012	U	0.0034	U		
trans-1,3-Dichloropropylene	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Trichloroethylene	0.47	21	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Trichlorofluoromethane	NA	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Vinyl acetate	0.02	NA	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Vinyl chloride	NA	0.9	0.0049	U	0.0058	U	0.012	U	0.0034	U		
Xylenes, Total	0.26	100	0.015	U	0.017	U	0.035	U	0.0034	U		

Detected Concentrations  
**Concentrations > Track 1 UUSCOs**  
**Concentrations > Track 2 RRUSCOs**

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 1: VOCs in Surface Soils (cont'd)**

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>		Sample ID	N-AST-S (0-4')	
		Sample Date	03/11/15	
		Dilution Factor	1	
VOCs, 8260	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier
1,1,1,2-Tetrachloroethane	NA	NA	0.0049	U
1,1,1-Trichloroethane	0.68	100	0.0049	U
1,1,2,2-Tetrachloroethane	NA	NA	0.0049	U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.0049	U
1,1,2-Trichloroethane	NA	NA	0.0049	U
1,1-Dichloroethane	0.27	26	0.0049	U
1,1-Dichloroethylene	0.33	100	0.0049	U
1,1-Dichloropropylene	NA	NA	0.0049	U
1,2,3-Trichlorobenzene	NA	NA	0.0049	U
1,2,3-Trichloropropane	NA	NA	0.0049	U
1,2,4-Trichlorobenzene	NA	NA	0.0049	U
1,2,4-Trimethylbenzene	3.6	52	0.0049	U
1,2-Dibromo-3-chloropropane	NA	NA	0.0049	U
1,2-Dibromoethane	NA	NA	0.0049	U
1,2-Dichlorobenzene	1.1	100	0.0049	U
1,2-Dichloroethane	0.2	31	0.0049	U
1,2-Dichloropropane	NA	NA	0.0049	U
1,3,5-Trimethylbenzene	8.4	52	0.0049	U
1,3-Dichlorobenzene	2.4	49	0.0049	U
1,3-Dichloropropane	NA	NA	0.0049	U
1,4-Dichlorobenzene	1.8	13	0.0049	U
1,4-Dioxane	0.1	13	0.099	U
2,2-Dichloropropane	NA	NA	0.0049	U
2-Butanone	0.12	100	0.0072	J
2-Chlorotoluene	NA	NA	0.0049	U
4-Chlorotoluene	NA	NA	0.0049	U
Acetone	0.05	100	0.051	
Benzene	0.06	48	0.0049	U
Bromobenzene	NA	NA	0.0049	U
Bromochloromethane	NA	NA	0.0049	U
Bromodichloromethane	NA	NA	0.0049	U
Bromoform	NA	NA	0.0049	U
Bromomethane	NA	NA	0.0049	U
Carbon tetrachloride	0.76	24	0.0049	U
Chlorobenzene	1.1	100	0.0049	U
Chloroethane	NA	NA	0.0049	U
Chloroform	0.37	49	0.0049	U
Chloromethane	NA	NA	0.0049	U
cis-1,2-Dichloroethylene	0.25	100	0.0049	U
cis-1,3-Dichloropropylene	NA	NA	0.0049	U
Dibromochloromethane	NA	NA	0.0049	U
Dibromomethane	NA	NA	0.0049	U
Dichlorodifluoromethane	NA	NA	0.0049	U
Ethyl Benzene	1	41	0.0049	U
Hexachlorobutadiene	NA	NA	0.0049	U
Isopropylbenzene	2.3	100	0.0049	U
Methyl tert-butyl ether (MTBE)	0.93	100	0.0049	U
Methylene chloride	0.05	500	0.0099	U
Naphthalene	12	12	0.0049	U
n-Butylbenzene	12	100	0.0049	U
n-Propylbenzene	3.9	100	0.0049	U
o-Xylene	0.26	100	0.0049	U
p- & m- Xylenes	0.26	100	0.0099	U
p-Isopropyltoluene	10	NA	0.0049	U
sec-Butylbenzene	11	100	0.0049	U
Styrene	NA	NA	0.0049	U
tert-Butylbenzene	5.9	100	0.0049	U
Tetrachloroethylene	1.3	19	0.0049	U
Toluene	0.7	100	0.0049	U
trans-1,2-Dichloroethylene	0.19	100	0.0049	U
trans-1,3-Dichloropropylene	NA	NA	0.0049	U
Trichloroethylene	0.47	21	0.0049	U
Trichlorofluoromethane	NA	NA	0.0049	U
Vinyl acetate	0.02	NA	0.0049	U
Vinyl chloride	NA	0.9	0.0049	U
Xylenes, Total	0.26	100	0.015	U

Detected Concentrations  
**Concentrations > Track 1 UUSCOs**  
**Concentrations > Track 2 RRUSCOs**

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 2: VOCs in Subsurface Soils**

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>		Sample ID		TP-1 (8.5')		TP-2 (8.5')		TP-3 (8.9')		TP-6 (4.5')	
		Sample Date		03/02/15		03/02/15		03/02/15		03/02/15	
		Dilution Factor		1		1		1		1	
VOCs, 8260	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	
1,1,1,2-Tetrachloroethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,1,1-Trichloroethane	0.68	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,1,2,2-Tetrachloroethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,1,2-Trichloroethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,1-Dichloroethane	0.27	26	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,1-Dichloroethylene	0.33	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,1-Dichloropropylene	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,2,3-Trichlorobenzene	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,2,3-Trichloropropane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,2,4-Trichlorobenzene	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,2,4-Trimethylbenzene	3.6	52	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,2-Dibromo-3-chloropropane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,2-Dibromoethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,2-Dichlorobenzene	1.1	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,2-Dichloroethane	0.2	31	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,2-Dichloropropane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,3,5-Trimethylbenzene	8.4	52	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,3-Dichlorobenzene	2.4	49	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,3-Dichloropropane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,4-Dichlorobenzene	1.8	13	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
1,4-Dioxane	0.1	13	0.084	U	0.07	U	0.11	U	0.094	U	
2,2-Dichloropropane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
2-Butanone	0.12	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
2-Chlorotoluene	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
4-Chlorotoluene	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Acetone	0.05	100	0.0084	U	0.0074	J	0.011	U	0.019	J	
Benzene	0.06	48	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Bromobenzene	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Bromochloromethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Bromodichloromethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Bromoform	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Bromomethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Carbon tetrachloride	0.76	24	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Chlorobenzene	1.1	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Chloroethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Chloroform	0.37	49	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Chloromethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
cis-1,2-Dichloroethylene	0.25	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
cis-1,3-Dichloropropylene	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Dibromochloromethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Dibromomethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Dichlorodifluoromethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Ethyl Benzene	1	41	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Hexachlorobutadiene	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Isopropylbenzene	2.3	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Methyl tert-butyl ether (MTBE)	0.93	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Methylene chloride	0.05	500	0.0084	U	0.007	U	0.011	U	0.0094	U	
Naphthalene	12	12	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
n-Butylbenzene	12	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
n-Propylbenzene	3.9	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
o-Xylene	0.26	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
p- & m- Xylenes	0.26	100	0.0084	U	0.007	U	0.011	U	0.0094	U	
p-Isopropyltoluene	10	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
sec-Butylbenzene	11	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Styrene	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
tert-Butylbenzene	5.9	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Tetrachloroethylene	1.3	19	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Toluene	0.7	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
trans-1,2-Dichloroethylene	0.19	100	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
trans-1,3-Dichloropropylene	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Trichloroethylene	0.47	21	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Trichlorofluoromethane	NA	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Vinyl acetate	0.02	NA	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Vinyl chloride	NA	0.9	0.0042	U	0.0035	U	0.0053	U	0.0047	U	
Xylenes, Total	0.26	100	0.013	U	0.01	U	0.016	U	0.014	U	

Detected Concentrations  
**Concentrations > Track 1 UUSCOs**  
**Concentrations > Track 2 RRUSCOs**

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 2: VOCs in Subsurface Soils (cont'd)**

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>		Sample ID	TP-5/B-5 (14'-16')	
		Sample Date	03/18/15	
		Dilution Factor	1	
VOCs, 8260	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier
1,1,1,2-Tetrachloroethane	NA	NA	0.0067	U
1,1,1-Trichloroethane	0.68	100	0.0067	U
1,1,2,2-Tetrachloroethane	NA	NA	0.0067	U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.0067	U
1,1,2-Trichloroethane	NA	NA	0.0067	U
1,1-Dichloroethane	0.27	26	0.0067	U
1,1-Dichloroethylene	0.33	100	0.0067	U
1,1-Dichloropropylene	NA	NA	0.0067	U
1,2,3-Trichlorobenzene	NA	NA	0.0067	U
1,2,3-Trichloropropane	NA	NA	0.0067	U
1,2,4-Trichlorobenzene	NA	NA	0.0067	U
1,2,4-Trimethylbenzene	3.6	52	0.0067	U
1,2-Dibromo-3-chloropropane	NA	NA	0.0067	U
1,2-Dibromoethane	NA	NA	0.0067	U
1,2-Dichlorobenzene	1.1	100	0.0067	U
1,2-Dichloroethane	0.2	31	0.0067	U
1,2-Dichloropropane	NA	NA	0.0067	U
1,3,5-Trimethylbenzene	8.4	52	0.0067	U
1,3-Dichlorobenzene	2.4	49	0.0067	U
1,3-Dichloropropane	NA	NA	0.13	U
1,4-Dichlorobenzene	1.8	13	0.0067	U
1,4-Dioxane	0.1	13	0.0067	U
2,2-Dichloropropane	NA	NA	0.0067	U
2-Butanone	0.12	100	0.016	J
2-Chlorotoluene	NA	NA	0.013	U
4-Chlorotoluene	NA	NA	0.0067	U
Acetone	0.05	100	0.0067	U
Benzene	0.06	48	0.0067	U
Bromobenzene	NA	NA	0.0067	U
Bromochloromethane	NA	NA	0.0067	U
Bromodichloromethane	NA	NA	0.0067	U
Bromoform	NA	NA	0.0067	U
Bromomethane	NA	NA	0.0067	U
Carbon tetrachloride	0.76	24	0.0067	U
Chlorobenzene	1.1	100	0.0067	U
Chloroethane	NA	NA	0.0067	U
Chloroform	0.37	49	0.0067	U
Chloromethane	NA	NA	0.0067	U
cis-1,2-Dichloroethylene	0.25	100	0.0067	U
cis-1,3-Dichloropropylene	NA	NA	0.0067	U
Dibromochloromethane	NA	NA	0.0067	U
Dibromomethane	NA	NA	0.0067	U
Dichlorodifluoromethane	NA	NA	0.0067	U
Ethyl Benzene	1	41	0.0067	U
Hexachlorobutadiene	NA	NA	0.0067	U
Isopropylbenzene	2.3	100	0.0067	U
Methyl tert-butyl ether (MTBE)	0.93	100	0.0067	U
Methylene chloride	0.05	500	0.0067	U
Naphthalene	12	12	0.0067	U
n-Butylbenzene	12	100	0.013	U
n-Propylbenzene	3.9	100	0.0067	U
o-Xylene	0.26	100	0.0067	U
p- & m- Xylenes	0.26	100	0.0067	U
p-Isopropyltoluene	10	NA	0.013	U
sec-Butylbenzene	11	100	0.0067	U
Styrene	NA	NA	0.0067	U
tert-Butylbenzene	5.9	100	0.0067	U
Tetrachloroethylene	1.3	19	0.013	U
Toluene	0.7	100	0.0067	U
trans-1,2-Dichloroethylene	0.19	100	0.0067	U
trans-1,3-Dichloropropylene	NA	NA	0.0067	U
Trichloroethylene	0.47	21	0.0067	U
Trichlorofluoromethane	NA	NA	0.0067	U
Vinyl acetate	0.02	NA	0.0067	U
Vinyl chloride	NA	0.9	0.0067	U
Xylenes, Total	0.26	100	0.0067	U

Detected Concentrations

Concentrations > Track 1 UUSCOs

Concentrations > Track 2 RRUSCOs

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 3: SVOCs in Surface Soils**

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>		Sample ID	TP-1 (0-2')		TP-2 (0-2')		TP-3 (0-2')		TP-4 (0-2')	
		Sample Date	03/02/15		03/02/15		03/02/15		03/02/15	
		Dilution Factor	1		1		1		1	
SVOCs, 8270	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
	1,2,4-Trichlorobenzene	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046
1,2-Dichlorobenzene	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
1,3-Dichlorobenzene	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
1,4-Dichlorobenzene	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
2,4,5-Trichlorophenol	NA	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
2,4,6-Trichlorophenol	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
2,4-Dichlorophenol	NA	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
2,4-Dimethylphenol	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
2,4-Dinitrophenol	NA	100	0.0485	U	0.0456	U	0.085	U	0.0917	U
2,4-Dinitrotoluene	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
2,6-Dinitrotoluene	NA	1.03	0.0243	U	0.0228	U	0.0426	U	0.046	U
2-Chloronaphthalene	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
2-Chlorophenol	NA	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
2-Methylnaphthalene	NA	0.41	0.0243	U	0.0228	U	0.0426	U	0.046	U
2-Methylphenol	NA	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
2-Nitroaniline	NA	NA	0.0485	U	0.0456	U	0.085	U	0.0917	U
2-Nitrophenol	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
3- & 4-Methylphenols	NA	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
3,3'-Dichlorobenzidine	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
3-Nitroaniline	NA	NA	0.0485	U	0.0456	U	0.085	U	0.0917	U
4,6-Dinitro-2-methylphenol	NA	NA	0.0485	U	0.0456	U	0.085	U	0.0917	U
4-Bromophenyl phenyl ether	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
4-Chloro-3-methylphenol	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
4-Chloroaniline	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
4-Chlorophenyl phenyl ether	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
4-Nitroaniline	NA	NA	0.0485	U	0.0456	U	0.085	U	0.0917	U
4-Nitrophenol	NA	NA	0.0485	U	0.0456	U	0.085	U	0.0917	U
Acenaphthene	20	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
Acenaphthylene	100	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
Aniline	NA	100	0.0972	U	0.0913	U	0.17	U	0.184	U
Anthracene	100	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
Benzo(a)anthracene	1	1	0.0243	U	0.0228	U	0.216	D	0.046	U
Benzo(a)pyrene	1	1	0.0243	U	0.0228	U	0.179	D	0.046	U
Benzo(b)fluoranthene	1	1	0.0243	U	0.0228	U	0.176	D	0.046	U
Benzo(g,h,i)perylene	100	100	0.0243	U	0.0228	U	0.161	D	0.046	U
Benzo(k)fluoranthene	0.8	3.9	0.0243	U	0.0228	U	0.22	D	0.046	U
Benzyl alcohol	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
Benzyl butyl phthalate	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
Bis(2-chloroethoxy)methane	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
Bis(2-chloroethyl)ether	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
Bis(2-chloroisopropyl)ether	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
Bis(2-ethylhexyl)phthalate	NA	50	0.0243	U	0.0228	U	0.0426	U	4.98	D
Chrysene	1	3.9	0.0243	U	0.0228	U	0.279	D	0.046	U
Dibenzo(a,h)anthracene	0.33	0.33	0.0243	U	0.0228	U	0.0598	JD	0.046	U
Dibenzofuran	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
Diethyl phthalate	NA	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
Dimethyl phthalate	NA	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
Di-n-butyl phthalate	NA	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
Di-n-octyl phthalate	NA	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
Fluoranthene	100	100	0.0243	U	0.0228	U	0.476	D	0.046	U
Fluorene	30	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
Hexachlorobenzene	NA	0.41	0.0243	U	0.0228	U	0.0426	U	0.046	U
Hexachlorobutadiene	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
Hexachlorocyclopentadiene	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
Hexachloroethane	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.0243	U	0.0228	U	0.134	D	0.046	U
Isophorone	NA	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
Naphthalene	12	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
Nitrobenzene	NA	15	0.0243	U	0.0228	U	0.0426	U	0.046	U
N-Nitrosodimethylamine	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
N-nitroso-di-n-propylamine	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
N-Nitrosodiphenylamine	NA	NA	0.0243	U	0.0228	U	0.0426	U	0.046	U
Pentachlorophenol	0.8	6.7	0.0243	U	0.0228	U	0.0426	U	0.046	U
Phenanthrene	100	100	0.0243	U	0.0228	U	0.262	D	0.046	U
Phenol	0.33	100	0.0243	U	0.0228	U	0.0426	U	0.046	U
Pyrene	100	100	0.0243	U	0.0228	U	0.421	D	0.046	U
Pyridine	NA	NA	0.0972	U	0.0913	U	0.17	U	0.184	U

Detected Concentrations  
**Concentrations > Track 1 UUSCOs**  
**Concentrations > Track 2 RRUSCOs**

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 3: SVOCs in Surface Soils (cont'd)**

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>			Sample ID		TP-5/B-5 (0-2')		TP-6 (-0-2')		TP-7 (0-2')		B-8 (0-2)	
			Sample Date		03/02/15		03/02/15		03/02/15		03/18/15	
			Dilution Factor		1		1		1		1	
SVOCs, 8270	Track 1	Track 2	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
	UUSCO	RRUSCO										
1,2,4-Trichlorobenzene	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
1,2-Dichlorobenzene	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0484	U
1,3-Dichlorobenzene	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
1,4-Dichlorobenzene	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
2,4,5-Trichlorophenol	NA	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
2,4,6-Trichlorophenol	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
2,4-Dichlorophenol	NA	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
2,4-Dimethylphenol	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0484	U
2,4-Dinitrophenol	NA	100	0.0467	U	0.0447	U	0.0422	U	0.0422	U	0.0243	U
2,4-Dinitrotoluene	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
2,6-Dinitrotoluene	NA	1.03	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
2-Chloronaphthalene	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
2-Chlorophenol	NA	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0484	U
2-Methylnaphthalene	NA	0.41	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
2-Methylphenol	NA	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
2-Nitroaniline	NA	NA	0.0467	U	0.0447	U	0.0422	U	0.0422	U	0.0243	U
2-Nitrophenol	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
3- & 4-Methylphenols	NA	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
3,3'-Dichlorobenzidine	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
3-Nitroaniline	NA	NA	0.0467	U	0.0447	U	0.0422	U	0.0422	U	0.0484	U
4,6-Dinitro-2-methylphenol	NA	NA	0.0467	U	0.0447	U	0.0422	U	0.0422	U	0.0243	U
4-Bromophenyl phenyl ether	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
4-Chloro-3-methylphenol	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
4-Chloroaniline	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0484	U
4-Chlorophenyl phenyl ether	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0484	U
4-Nitroaniline	NA	NA	0.0467	U	0.0447	U	0.0422	U	0.0422	U	0.0243	U
4-Nitrophenol	NA	NA	0.0467	U	0.0447	U	0.0422	U	0.0422	U	0.0243	U
Acenaphthene	20	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Acenaphthylene	100	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Aniline	NA	100	0.0935	U	0.0895	U	0.0844	U	0.0844	U	0.0484	U
Anthracene	100	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0484	U
Benzo(a)anthracene	1	1	0.0922	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Benzo(a)pyrene	1	1	0.094	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Benzo(b)fluoranthene	1	1	0.0985	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Benzo(g,h,i)perylene	100	100	0.0664	U	0.0224	U	0.0211	U	0.0211	U	0.0969	U
Benzo(k)fluoranthene	0.8	3.9	0.106	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Benzyl alcohol	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Benzyl butyl phthalate	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Bis(2-chloroethoxy)methane	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0969	U
Bis(2-chloroethyl)ether	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0515	U
Bis(2-chloroisopropyl)ether	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0735	U
Bis(2-ethylhexyl)phthalate	NA	50	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0789	U
Chrysene	1	3.9	0.123	U	0.0224	U	0.0211	U	0.0211	U	0.0565	U
Dibenzo(a,h)anthracene	0.33	0.33	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0925	U
Dibenzofuran	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Diethyl phthalate	NA	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Dimethyl phthalate	NA	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Di-n-butyl phthalate	NA	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Di-n-octyl phthalate	NA	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Fluoranthene	100	100	0.22	U	0.03	J	0.0211	U	0.0211	U	0.0243	U
Fluorene	30	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Hexachlorobenzene	NA	0.41	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0933	J
Hexachlorobutadiene	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Hexachlorocyclopentadiene	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.11	U
Hexachloroethane	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0282	J
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.0601	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Isophorone	NA	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Naphthalene	12	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Nitrobenzene	NA	15	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
N-Nitrosodimethylamine	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
N-nitroso-di-n-propylamine	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.199	U
N-Nitrosodiphenylamine	NA	NA	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Pentachlorophenol	0.8	6.7	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Phenanthrene	100	100	0.117	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Phenol	0.33	100	0.0234	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Pyrene	100	100	0.18	U	0.0224	U	0.0211	U	0.0211	U	0.0243	U
Pyridine	NA	NA	0.0935	U	0.0895	U	0.0844	U	0.0844	U	0.0542	U

Detected Concentrations  
**Concentrations > Track 1 UUSCOs**  
**Concentrations > Track 2 RRUSCOs**

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 3: SVOCs in Surface Soils (cont'd)**

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>		Sample ID	N-AST-S (0-4')	
		Sample Date	03/11/15	
		Dilution Factor	1	
SVOCs, 8270	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier
1,2,4-Trichlorobenzene	NA	NA	0.036	U
1,2-Dichlorobenzene	NA	NA	0.036	U
1,3-Dichlorobenzene	NA	NA	0.036	U
1,4-Dichlorobenzene	NA	NA	0.036	U
2,4,5-Trichlorophenol	NA	100	0.036	U
2,4,6-Trichlorophenol	NA	NA	0.036	U
2,4-Dichlorophenol	NA	100	0.036	U
2,4-Dimethylphenol	NA	NA	0.036	U
2,4-Dinitrophenol	NA	100	0.071	U
2,4-Dinitrotoluene	NA	NA	0.036	U
2,6-Dinitrotoluene	NA	1.03	0.036	U
2-Chloronaphthalene	NA	NA	0.036	U
2-Chlorophenol	NA	100	0.036	U
2-Methylnaphthalene	NA	0.41	0.036	U
2-Methylphenol	NA	100	0.036	U
2-Nitroaniline	NA	NA	0.071	U
2-Nitrophenol	NA	NA	0.036	U
3- & 4-Methylphenols	NA	100	0.036	U
3,3'-Dichlorobenzidine	NA	NA	0.036	U
3-Nitroaniline	NA	NA	0.071	U
4,6-Dinitro-2-methylphenol	NA	NA	0.071	U
4-Bromophenyl phenyl ether	NA	NA	0.036	U
4-Chloro-3-methylphenol	NA	NA	0.036	U
4-Chloroaniline	NA	NA	0.036	U
4-Chlorophenyl phenyl ether	NA	NA	0.036	U
4-Nitroaniline	NA	NA	0.071	U
4-Nitrophenol	NA	NA	0.071	U
Acenaphthene	20	100	0.036	U
Acenaphthylene	100	100	0.036	U
Aniline	NA	100	0.14	U
Anthracene	100	100	0.082	
Benzo(a)anthracene	1	1	0.2	
Benzo(a)pyrene	1	1	0.15	
Benzo(b)fluoranthene	1	1	0.15	
Benzo(g,h,i)perylene	100	100	0.076	
Benzo(k)fluoranthene	0.8	3.9	0.16	
Benzyl alcohol	NA	NA	0.036	U
Benzyl butyl phthalate	NA	NA	0.036	U
Bis(2-chloroethoxy)methane	NA	NA	0.036	U
Bis(2-chloroethyl)ether	NA	NA	0.036	U
Bis(2-chloroisopropyl)ether	NA	NA	0.036	U
Bis(2-ethylhexyl)phthalate	NA	50	0.067	J
Chrysene	1	3.9	0.23	
Dibenzo(a,h)anthracene	0.33	0.33	0.036	U
Dibenzofuran	NA	NA	0.036	U
Diethyl phthalate	NA	100	0.036	U
Dimethyl phthalate	NA	100	0.036	U
Di-n-butyl phthalate	NA	100	0.036	U
Di-n-octyl phthalate	NA	100	0.036	U
Fluoranthene	100	100	0.56	
Fluorene	30	100	0.043	J
Hexachlorobenzene	NA	0.41	0.036	U
Hexachlorobutadiene	NA	NA	0.036	U
Hexachlorocyclopentadiene	NA	NA	0.036	U
Hexachloroethane	NA	NA	0.036	U
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.085	
Isophorone	NA	100	0.036	U
Naphthalene	12	100	0.036	U
Nitrobenzene	NA	15	0.036	U
N-Nitrosodimethylamine	NA	NA	0.036	U
N-nitroso-di-n-propylamine	NA	NA	0.036	U
N-Nitrosodiphenylamine	NA	NA	0.036	U
Pentachlorophenol	0.8	6.7	0.036	U
Phenanthrene	100	100	0.41	
Phenol	0.33	100	0.036	U
Pyrene	100	100	0.32	
Pyridine	NA	NA	0.14	U

Detected Concentrations  
 Concentrations > Track 1 UUSCOs  
 Concentrations > Track 2 RRUSCOs

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 4: SVOCs in Subsurface Soils**

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>		Sample ID	TP-1 (8.5')		TP-2 (8.5')		TP-3 (8.9')		TP-6 (4.5')	
		Sample Date	03/02/15		03/02/15		03/02/15		03/02/15	
		Dilution Factor	1		1		1		1	
SVOCs, 8270	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,2,4-Trichlorobenzene	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
1,2-Dichlorobenzene	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
1,3-Dichlorobenzene	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
1,4-Dichlorobenzene	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
2,4,5-Trichlorophenol	NA	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
2,4,6-Trichlorophenol	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
2,4-Dichlorophenol	NA	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
2,4-Dimethylphenol	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
2,4-Dinitrophenol	NA	100	0.0457	U	0.0437	U	0.0466	U	0.0427	U
2,4-Dinitrotoluene	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
2,6-Dinitrotoluene	NA	1.03	0.0229	U	0.0219	U	0.0233	U	0.0214	U
2-Chloronaphthalene	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
2-Chlorophenol	NA	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
2-Methylnaphthalene	NA	0.41	0.0229	U	0.0219	U	0.0233	U	0.0214	U
2-Methylphenol	NA	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
2-Nitroaniline	NA	NA	0.0457	U	0.0437	U	0.0466	U	0.0427	U
2-Nitrophenol	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
3- & 4-Methylphenols	NA	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
3,3'-Dichlorobenzidine	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
3-Nitroaniline	NA	NA	0.0457	U	0.0437	U	0.0466	U	0.0427	U
4,6-Dinitro-2-methylphenol	NA	NA	0.0457	U	0.0437	U	0.0466	U	0.0427	U
4-Bromophenyl phenyl ether	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
4-Chloro-3-methylphenol	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
4-Chloroaniline	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
4-Chlorophenyl phenyl ether	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
4-Nitroaniline	NA	NA	0.0457	U	0.0437	U	0.0466	U	0.0427	U
4-Nitrophenol	NA	NA	0.0457	U	0.0437	U	0.0466	U	0.0427	U
Acenaphthene	20	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Acenaphthylene	100	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Aniline	NA	100	0.0916	U	0.0875	U	0.0933	U	0.0854	U
Anthracene	100	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Benzo(a)anthracene	1	1	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Benzo(a)pyrene	1	1	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Benzo(b)fluoranthene	1	1	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Benzo(g,h,i)perylene	100	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Benzo(k)fluoranthene	0.8	3.9	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Benzyl alcohol	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Benzyl butyl phthalate	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Bis(2-chloroethoxy)methane	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Bis(2-chloroethyl)ether	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Bis(2-chloroisopropyl)ether	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Bis(2-ethylhexyl)phthalate	NA	50	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Chrysene	1	3.9	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Dibenzo(a,h)anthracene	0.33	0.33	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Dibenzofuran	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Diethyl phthalate	NA	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Dimethyl phthalate	NA	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Di-n-butyl phthalate	NA	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Di-n-octyl phthalate	NA	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Fluoranthene	100	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Fluorene	30	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Hexachlorobenzene	NA	0.41	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Hexachlorobutadiene	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Hexachlorocyclopentadiene	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Hexachloroethane	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Isophorone	NA	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Naphthalene	12	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Nitrobenzene	NA	15	0.0229	U	0.0219	U	0.0233	U	0.0214	U
N-Nitrosodimethylamine	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
N-nitroso-di-n-propylamine	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
N-Nitrosodiphenylamine	NA	NA	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Pentachlorophenol	0.8	6.7	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Phenanthrene	100	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Phenol	0.33	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Pyrene	100	100	0.0229	U	0.0219	U	0.0233	U	0.0214	U
Pyridine	NA	NA	0.0916	U	0.0875	U	0.0933	U	0.0854	U

Detected Concentrations  
**Concentrations > Track 1 UUSCOs**  
**Concentrations > Track 2 RRUSCOs**

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 4: SVOCs in Subsurface Soils (cont'd)**

All data in mg/Kg (parts per million, ppm)		Sample ID		TP-5/B-5 (14'-16')	
U= Not Detected at or above indicated value		Sample Date		03/18/15	
Data above SCOs shown in <b>Bold</b>		Dilution Factor		1	
SVOCs, 8270	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier	
1,2,4-Trichlorobenzene	NA	NA	0.0252	U	
1,2-Dichlorobenzene	NA	NA	0.0503	U	
1,3-Dichlorobenzene	NA	NA	0.0252	U	
1,4-Dichlorobenzene	NA	NA	0.0252	U	
2,4,5-Trichlorophenol	NA	100	0.0252	U	
2,4,6-Trichlorophenol	NA	NA	0.0252	U	
2,4-Dichlorophenol	NA	100	0.0252	U	
2,4-Dimethylphenol	NA	NA	0.0503	U	
2,4-Dinitrophenol	NA	100	0.0252	U	
2,4-Dinitrotoluene	NA	NA	0.0252	U	
2,6-Dinitrotoluene	NA	1.03	0.0252	U	
2-Chloronaphthalene	NA	NA	0.0252	U	
2-Chlorophenol	NA	100	0.0503	U	
2-Methylnaphthalene	NA	0.41	0.0252	U	
2-Methylphenol	NA	100	0.0252	U	
2-Nitroaniline	NA	NA	0.0252	U	
2-Nitrophenol	NA	NA	0.0252	U	
3- & 4-Methylphenols	NA	100	0.0252	U	
3,3'-Dichlorobenzidine	NA	NA	0.0252	U	
3-Nitroaniline	NA	NA	0.0503	U	
4,6-Dinitro-2-methylphenol	NA	NA	0.0252	U	
4-Bromophenyl phenyl ether	NA	NA	0.0252	U	
4-Chloro-3-methylphenol	NA	NA	0.0252	U	
4-Chloroaniline	NA	NA	0.0503	U	
4-Chlorophenyl phenyl ether	NA	NA	0.0503	U	
4-Nitroaniline	NA	NA	0.0252	U	
4-Nitrophenol	NA	NA	0.0252	U	
Acenaphthene	20	100	0.0252	U	
Acenaphthylene	100	100	0.0252	U	
Aniline	NA	100	0.0503	U	
Anthracene	100	100	0.0503	U	
Benzo(a)anthracene	1	1	0.0252	U	
Benzo(a)pyrene	1	1	0.0252	U	
Benzo(b)fluoranthene	1	1	0.0252	U	
Benzo(g,h,i)perylene	100	100	0.101	U	
Benzo(k)fluoranthene	0.8	3.9	0.0252	U	
Benzyl alcohol	NA	NA	0.0252	U	
Benzyl butyl phthalate	NA	NA	0.0252	U	
Bis(2-chloroethoxy)methane	NA	NA	0.101	U	
Bis(2-chloroethyl)ether	NA	NA	0.0252	U	
Bis(2-chloroisopropyl)ether	NA	NA	0.0252	U	
Bis(2-ethylhexyl)phthalate	NA	50	0.0252	U	
Chrysene	1	3.9	0.0252	U	
Dibenzo(a,h)anthracene	0.33	0.33	0.0252	U	
Dibenzofuran	NA	NA	0.0252	U	
Diethyl phthalate	NA	100	0.0252	U	
Dimethyl phthalate	NA	100	0.0252	U	
Di-n-butyl phthalate	NA	100	0.0252	U	
Di-n-octyl phthalate	NA	100	0.0252	U	
Fluoranthene	100	100	0.0252	U	
Fluorene	30	100	0.0252	U	
Hexachlorobenzene	NA	0.41	0.0503	U	
Hexachlorobutadiene	NA	NA	0.0252	U	
Hexachlorocyclopentadiene	NA	NA	0.0252	U	
Hexachloroethane	NA	NA	0.0252	U	
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.0252	U	
Isophorone	NA	100	0.0252	U	
Naphthalene	12	100	0.0252	U	
Nitrobenzene	NA	15	0.0252	U	
N-Nitrosodimethylamine	NA	NA	0.0252	U	
N-nitroso-di-n-propylamine	NA	NA	0.0252	U	
N-Nitrosodiphenylamine	NA	NA	0.0252	U	
Pentachlorophenol	0.8	6.7	0.0252	U	
Phenanthrene	100	100	0.0252	U	
Phenol	0.33	100	0.0252	U	
Pyrene	100	100	0.0252	U	
Pyridine	NA	NA	0.0252	U	

Detected Concentrations

Concentrations > Track 1 UUSCOs

Concentrations > Track 2 RRUSCOs

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 9: Pesticides and PCBs in Surface Soils**

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>			Sample ID		TP-1 (0-2')		TP-2 (0-2')		TP-3 (0-2')		TP-4 (0-2')		TP-5/B-5 (0-2')	
			Sample Date		03/02/15		03/02/15		03/02/15		03/02/15		03/02/15	
			Dilution Factor		5		5		5		5		5	
<b>Pesticides, 8081</b>	<b>Track 1 UUSCO</b>	<b>Track 2 RRUSCO</b>	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
4,4'-DDD	0.0033	13	0.00288	U	0.0027	U	0.039	D	0.00272	U	0.00277	U		
4,4'-DDE	0.0033	8.9	0.00288	U	0.0027	U	0.237	D	0.00272	U	0.00894	D		
4,4'-DDT	0.0033	7.9	0.00288	U	0.0027	U	0.279	D	0.0082	D	0.00832	D		
Aldrin	0.005	0.097	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
alpha-BHC	0.02	0.48	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
alpha-Chlordane	0.094	4.2	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
beta-BHC	0.036	0.36	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
Chlordane, total	NA	NA	0.115	U	0.108	U	0.101	U	0.109	U	0.111	U		
delta-BHC	0.04	100	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
Dieldrin	0.005	0.2	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
Endosulfan I	2.4	200	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
Endosulfan II	2.4	200	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
Endosulfan sulfate	2.4	200	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
Endrin	0.014	11	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
Endrin aldehyde	NA	NA	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
Endrin ketone	NA	NA	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
gamma-BHC (Lindane)	0.1	1.3	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
gamma-Chlordane	NA	0.54	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
Heptachlor	0.042	2.1	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
Heptachlor Epoxide	NA	0.077	0.00288	U	0.0027	U	0.00252	U	0.00272	U	0.00277	U		
Methoxychlor	NA	100	0.0144	U	0.0135	U	0.0126	U	0.0136	U	0.0139	U		
Toxaphene	NA	NA	0.146	U	0.137	U	0.128	U	0.138	U	0.14	U		

			Sample ID		TP-1 (0-2')		TP-2 (0-2')		TP-3 (0-2')		TP-4 (0-2')		TP-5/B-5 (0-2')	
			Sample Date		03/02/15		03/02/15		03/02/15		03/02/15		03/02/15	
			Dilution Factor		1		1		1		1		1	
<b>PCBs, 8082</b>	<b>Track 1</b>	<b>Track 2</b>	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aroclor 1016	0.1	1.00	0.0291	U	0.0273	U	0.0255	U	0.0275	U	0.028	U		
Aroclor 1221	0.1	1.00	0.0291	U	0.0273	U	0.0255	U	0.0275	U	0.028	U		
Aroclor 1232	0.1	1.00	0.0291	U	0.0273	U	0.0255	U	0.0275	U	0.028	U		
Aroclor 1242	0.1	1.00	0.0291	U	0.0273	U	0.0255	U	0.0275	U	0.028	U		
Aroclor 1248	0.1	1.00	0.0291	U	0.0273	U	0.0255	U	0.0275	U	0.028	U		
Aroclor 1254	0.1	1.00	0.0291	U	0.0273	U	0.0255	U	0.0275	U	0.028	U		
Aroclor 1260	0.1	1.00	0.0291	U	0.0273	U	0.0476		0.0367		0.028	U		
Aroclor, Total	0.1	1.00	0.0291	U	0.0273	U	0.0476		0.0367		0.028	U		

Detected Concentrations  
 Concentrations > Track 1 UUSCOs  
 Concentrations > Track 2 RRUSCOs

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 5: Pesticides and PCBs in Surface Soils (cont'd)**

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>			Sample ID		TP-6 (-0-2')		TP-7 (0-2')		B-8 (0-2)		N-AST-S (0-4')	
			Sample Date		03/02/15		03/02/15		03/18/15		03/11/15	
			Dilution Factor		5		5		5		5	
<b>Pesticides, 8081</b>	<b>Track 1 UUSCO</b>	<b>Track 2 RRUSCO</b>	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier		
4,4'-DDD	0.0033	13	0.00265	U	0.0025	U	<b>0.00375</b>	D	0.0019	U		
4,4'-DDE	0.0033	8.9	0.00265	U	0.0025	U	<b>0.0023</b>	D	0.0019	U		
4,4'-DDT	0.0033	7.9	0.00265	U	<b>0.0106</b>	D	<b>0.00437</b>	D	0.0019	U		
Aldrin	0.005	0.097	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
alpha-BHC	0.02	0.48	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
alpha-Chlordane	0.094	4.2	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
beta-BHC	0.036	0.36	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
Chlordane, total	NA	NA	0.106	U	0.1	U	0.0766	U	0.075	U		
delta-BHC	0.04	100	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
Dieldrin	0.005	0.2	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
Endosulfan I	2.4	200	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
Endosulfan II	2.4	200	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
Endosulfan sulfate	2.4	200	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
Endrin	0.014	11	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
Endrin aldehyde	NA	NA	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
Endrin ketone	NA	NA	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
gamma-BHC (Lindane)	0.1	1.3	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
gamma-Chlordane	NA	0.54	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
Heptachlor	0.042	2.1	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
Heptachlor Epoxide	NA	0.077	0.00265	U	0.0025	U	0.00192	U	0.0019	U		
Methoxychlor	NA	100	0.0133	U	0.0125	U	0.00958	U	0.0094	U		
Toxaphene	NA	NA	0.134	U	0.127	U	0.0969	U	0.095	U		

			Sample ID		TP-6 (-0-2')		TP-7 (0-2')		B-8 (0-2)		N-AST-S (0-2')	
			Sample Date		03/02/15		03/02/15		03/18/15		03/11/15	
			Dilution Factor		1		1		1		1	
<b>PCBs, 8082</b>	<b>Track 1</b>	<b>Track 2</b>	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier		
Aroclor 1016	0.1	1.00	0.0268	U	0.0253	U	0.0193	U	0.0017	U		
Aroclor 1221	0.1	1.00	0.0268	U	0.0253	U	0.0193	U	0.0017	U		
Aroclor 1232	0.1	1.00	0.0268	U	0.0253	U	0.0193	U	0.0017	U		
Aroclor 1242	0.1	1.00	0.0268	U	0.0253	U	0.0193	U	0.0017	U		
Aroclor 1248	0.1	1.00	0.0268	U	0.0253	U	0.0193	U	0.0017	U		
Aroclor 1254	0.1	1.00	0.0268	U	0.0253	U	0.0193	U	0.0017	U		
Aroclor 1260	0.1	1.00	0.0268	U	0.0253	U	0.0193	U	0.0017	U		
Aroclor, Total	0.1	1.00	0.0268	U	0.0253	U	0.0193	U	0.0017	U		

Detected Concentrations  
 Concentrations > Track 1 UUSCOs  
 Concentrations > Track 2 RRUSCOs

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 6: Pesticides and PCBs in Subsurface Soils**

All data in mg/Kg (parts per million, ppm)												
		Sample ID	TP-1 (8.5')		TP-2 (8.5')		TP-3 (8.9')		TP-6 (4.5')		TP-5/B-5 (14'-16')	
		Sample Date	03/02/15		03/02/15		03/02/15		03/02/15		03/18/15	
		Dilution Factor	5		5		5		5		5	
Pesticides, 8081	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
4,4'-DDD	0.0033	13	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
4,4'-DDE	0.0033	8.9	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
4,4'-DDT	0.0033	7.9	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Aldrin	0.005	0.097	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
alpha-BHC	0.02	0.48	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
alpha-Chlordane	0.094	4.2	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
beta-BHC	0.036	0.36	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Chlordane, total	NA	NA	0.109	U	0.104	U	0.111	U	0.101	U	0.0797	U
delta-BHC	0.04	100	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Dieldrin	0.005	0.2	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Endosulfan I	2.4	200	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Endosulfan II	2.4	200	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Endosulfan sulfate	2.4	200	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Endrin	0.014	11	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Endrin aldehyde	NA	NA	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Endrin ketone	NA	NA	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
gamma-BHC (Lindane)	0.1	1.3	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
gamma-Chlordane	NA	0.54	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Heptachlor	0.042	2.1	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Heptachlor Epoxide	NA	0.077	0.00271	U	0.00259	U	0.00276	U	0.00253	U	0.00199	U
Methoxychlor	NA	100	0.0136	U	0.013	U	0.0138	U	0.0127	U	0.00996	U
Toxaphene	NA	NA	0.137	U	0.131	U	0.14	U	0.128	U	0.101	U

All data in mg/Kg (parts per million, ppm)												
		Sample ID	TP-1 (8.5')		TP-2 (8.5')		TP-3 (8.9')		TP-6 (4.5')		TP-5/B-5 (14'-16')	
		Sample Date	03/02/15		03/02/15		03/02/15		03/02/15		Data Pending	
		Dilution Factor	1		1		1		1		1	
PCBs, 8082	Track 1	Track 2	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aroclor 1016	0.1	1.00	0.0274	U	0.0262	U	0.0279	U	0.0256	U	0.0201	U
Aroclor 1221	0.1	1.00	0.0274	U	0.0262	U	0.0279	U	0.0256	U	0.0201	U
Aroclor 1232	0.1	1.00	0.0274	U	0.0262	U	0.0279	U	0.0256	U	0.0201	U
Aroclor 1242	0.1	1.00	0.0274	U	0.0262	U	0.0279	U	0.0256	U	0.0201	U
Aroclor 1248	0.1	1.00	0.0274	U	0.0262	U	0.0279	U	0.0256	U	0.0201	U
Aroclor 1254	0.1	1.00	0.0274	U	0.0262	U	0.0279	U	0.0256	U	0.0201	U
Aroclor 1260	0.1	1.00	0.0274	U	0.0262	U	0.0279	U	0.0256	U	0.0201	U
Aroclor, Total	0.1	1.00	0.0274	U	0.0262	U	0.0279	U	0.0256	U	0.0201	U

Detected Concentrations  
 Concentrations > Track 1 UUSCOs  
 Concentrations > Track 2 RRUSCOs

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

Table 7: TAL Metals in Surface Soils

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>		Sample ID		TP-1 (0-2')		TP-2 (0-2')		TP-3 (0-2')		TP-4 (0-2')	
		Sample Date		03/02/15		03/02/15		03/02/15		03/02/15	
		Dilution Factor		1		1		1		1	
Metals, 6010 and 7473	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	
Aluminum	NA	NA	15,800		14,300		20,400		3,790		
Antimony	NA	NA	0.582	U	0.546	U	3.35		1.08		
Arsenic	13	16	5.56		2.84		<b>19.6</b>		<b>27.9</b>		
Barium	350	400	57.3		41.2		<b>3,850</b>		150		
Beryllium	7.2	72	0.116	U	0.109	U	0.102	U	0.11	U	
Cadmium	2.5	4.3	0.349	U	0.328	U	1.46		0.33	U	
Calcium	NA	NA	1,660		1,710		22,400		12,500		
Chromium	30	180	23.8		30.1		63.9		16.1		
Cobalt	NA	30	6.92		8.4		15		16.3		
Copper	50	270	22.6		27.2		164		62.5		
Iron	NA	2,000	<b>22,500</b>		<b>19,800</b>		<b>83,100</b>	D	<b>14,700</b>		
Lead	63	400	10.5		7.06		<b>2,960</b>		75.5		
Magnesium	NA	NA	3,950		3,510		7,750		1,070		
Manganese	1,600	2,000	154		172		689		63.5		
Mercury	0.18	0.81	0.0473		0.0328	U	<b>1.54</b>		0.192		
Nickel	30	310	17.1		14.8		32.8		17.6		
Potassium	NA	NA	1,110		1,310		2,170		926		
Selenium	3.90	180	1.16	U	1.09	U	1.02	U	3.55		
Silver	2	180	0.582	U	0.546	U	0.51	U	0.55	U	
Sodium	NA	NA	78.5		194		1,040		586		
Thallium	NA	NA	1.16	U	1.09	U	1.02	U	1.1	U	
Vanadium	NA	100	33.2		35.3		51.9		21.5		
Zinc	109	2,200	48.4		38		<b>2,500</b>		62.5		

Detected Concentrations

Concentrations > Track 1 UUSCOs

Concentrations > Track 2 RRUSCOs

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

Table 7: TAL Metals in Surface Soils (Cont'd)

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>		Sample ID		TP-5/B-5 (0-2')		TP-6 (-0-2')		TP-7 (0-2')		B-8 (0-2)	
		Sample Date		03/02/15		03/02/15		03/02/15		03/18/15	
		Dilution Factor		1		1		1		1	
Metals, 6010 and 7473	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	
Aluminum	NA	NA	12,400		15,200		7,650		13,400		
Antimony	NA	NA	0.629		0.536	U	0.606		0.58	U	
Arsenic	13	16	6.24		4.1		7.86		4.55		
Barium	350	400	159		96.5		261		118		
Beryllium	7.2	72	0.112	U	0.107	U	0.101	U	0.116	U	
Cadmium	2.5	4.3	0.336	U	0.322	U	0.303	U	0.35		
Calcium	NA	NA	31,000		2,640		4,170		67,600		
Chromium	30	180	20.8		33.6		18.9		23.1		
Cobalt	NA	30	7.22		10.3		10.4		9.76		
Copper	50	270	153		32		47.1		20.3		
Iron	NA	2,000	<b>18,300</b>		<b>27,500</b>		<b>13,700</b>		<b>16,400</b>		
Lead	63	400	<b>677</b>		22.1		60		70.8		
Magnesium	NA	NA	13,500		3,240		1,410		38,500		
Manganese	1,600	2,000	279		392		165		265		
Mercury	0.18	0.81	0.46		0.0806		0.091		0.111		
Nickel	30	310	14.4		17.8		20.6		15.8		
Potassium	NA	NA	1,200		1,040		681		913		
Selenium	3.90	180	1.12	U	1.07	U	1.32		1.81		
Silver	2	180	0.56	U	0.536	U	0.506	U	0.58	U	
Sodium	NA	NA	315		119		251		172		
Thallium	NA	NA	1.12	U	1.07	U	1.01	U	1.16	U	
Vanadium	NA	100	27		45.3		36.3		25		
Zinc	109	2,200	223		61.3		92.7		142		

Detected Concentrations

Concentrations > Track 1 UUSCOs

Concentrations > Track 2 RRUSCOs

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 7: TAL Metals in Surface Soils (Cont'd)**

Metals, 6010 and 7473		Sample ID		N-AST-S (0-2')	
		Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier
All data in mg/Kg (parts per million, ppm)		Sample Date		03/11/15	
U= Not Detected at or above indicated value		Dilution Factor		1	
Data above SCOs shown in <b>Bold</b>					
Aluminum	NA	NA	12,600		
Antimony	NA	NA	0.568	U	
Arsenic	13	16	4.53		
Barium	350	400	104		
Beryllium	7.2	72	0.114	U	
Cadmium	2.5	4.3	0.53		
Calcium	NA	NA	48,700		
Chromium	30	180	28.6		
Cobalt	NA	30	9.31		
Copper	50	270	88.7		
Iron	NA	2,000	<b>30,600</b>		
Lead	63	400	309		
Magnesium	NA	NA	11,500		
Manganese	1,600	2,000	354		
Mercury	0.18	0.81	<b>1.7</b>		
Nickel	30	310	24.4		
Potassium	NA	NA	1,750		
Selenium	3.90	180	5.25		
Silver	2	180	0.568	U	
Sodium	NA	NA	260		
Thallium	NA	NA	1.14	U	
Vanadium	NA	100	36.9		
Zinc	109	2,200	225		

Detected Concentrations

Concentrations > Track 1 UUSCOs

Concentrations > Track 2 RRUSCOs

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 8: TAL Metals in Subsurface Soils**

All data in mg/Kg (parts per million, ppm) U= Not Detected at or above indicated value Data above SCOs shown in <b>Bold</b>		Sample ID		TP-1 (8.5')		TP-2 (8.5')		TP-3 (8.9')		TP-6 (4.5')		TP-5/B-5 (14'-16')	
		Sample Date		03/02/15		03/02/15		03/02/15		03/02/15		03/18/15	
		Dilution Factor		1		1		1		1		1	
Metals, 6010 and 7473	Track 1 UUSCO	Track 2 RRUSCO	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	
Aluminum	NA	NA	5,270		8,880		14,700		8,380		3,320		
Antimony	NA	NA	0.548	U	0.524	U	0.558	U	0.512	U	0.604	U	
Arsenic	13	16	1.1	U	2.01		4.63		2.1		1.21	U	
Barium	350	400	28.3		138		69.9		8.97		9.31		
Beryllium	7.2	72	0.11	U	0.105	U	0.112	U	0.102	U	0.121	U	
Cadmium	2.5	4.3	0.329	U	0.314	U	0.335	U	0.307	U	0.362	U	
Calcium	NA	NA	1,600		1,960		2,660		159,000	D	2,180		
Chromium	30	180	22		36		25.7		7.11		5.86		
Cobalt	NA	30	4.53		8.66		8.84		2.4		2.91		
Copper	50	270	9.41		30		21.2		6.4		6.34		
Iron	NA	2,000	<b>7,480</b>		<b>17,600</b>		<b>16,600</b>		<b>3,450</b>		<b>15,000</b>		
Lead	63	400	2.68		5.77		17.2		6.36		1.31		
Magnesium	NA	NA	1,370		4,770		6,850		108,000	D	15,200		
Manganese	1,600	2,000	49.1		178		218		124		183		
Mercury	0.18	0.81	0.0329	U	0.0314	U	0.0409		0.0537		0.0362	U	
Nickel	30	310	11		18.5		17.7		4.2		3.2		
Potassium	NA	NA	534		1,950		1,770		316		248		
Selenium	3.90	180	1.1	U	1.05	U	1.12	U	1.02	U	1.21	U	
Silver	2	180	0.548	U	0.524	U	0.558	U	0.512	U	0.604	U	
Sodium	NA	NA	100		675		362		10.2	U	142		
Thallium	NA	NA	1.1	U	1.05	U	1.12	U	1.02	U	1.21	U	
Vanadium	NA	100	13.7		32		29.8		7.12		5.46		
Zinc	109	2,200	18.2		37.6		49.8		19.5		11.4		

Detected Concentrations

Concentrations > Track 1 UUSCOs

Concentrations > Track 2 RRUSCOs

Notes: SCOs based on NYSDEC Part 375-6.8 and CP-51 NA = not available  
Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

Table 9: VOCs in Groundwater

All data in µg/L (parts per billion, ppb) U= Not Detected at or above indicated value Data above AWQS shown in <b>Bold</b>	Sample ID	W-1		W-2		B-5/MW-5	
	Sample Date	3/11/2015		3/11/2015		3/25/2015	
	Dilution Factor	1		1		1	
	VOCs, 8260	AWQS	Result	Qualifier	Result	Qualifier	Result
1,1,1,2-Tetrachloroethane	5	0.20	U	0.20	U	2.5	U
1,1,1-Trichloroethane	5	0.20	U	0.20	U	2.5	U
1,1,2,2-Tetrachloroethane	5	0.20	U	0.20	U	2.5	U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5	0.20	U	0.20	U	2.5	U
1,1,2-Trichloroethane	1	0.20	U	0.20	U	2.5	U
1,1-Dichloroethane	5	0.20	U	0.20	U	2.5	U
1,1-Dichloroethylene	5	0.20	U	0.20	U	2.5	U
1,1-Dichloropropylene	5	0.20	U	0.20	U	2.5	U
1,2,3-Trichlorobenzene	5	0.20	U	0.20	U	2.5	U
1,2,3-Trichloropropane	0.04	0.20	U	0.20	U	2.5	U
1,2,4-Trichlorobenzene	5	0.20	U	0.20	U	2.5	U
1,2,4-Trimethylbenzene	5	0.20	U	0.20	U	2.5	U
1,2-Dibromo-3-chloropropane	55	0.80	U	0.80	U	2.5	U
1,2-Dibromoethane	5	0.20	U	0.20	U	2.5	U
1,2-Dichlorobenzene	3	0.20	U	0.20	U	2.5	U
1,2-Dichloroethane	0.6	0.20	U	0.20	U	2.5	U
1,2-Dichloropropane	1	0.20	U	0.20	U	2.5	U
1,3,5-Trimethylbenzene	5	0.20	U	0.20	U	2.5	U
1,3-Dichlorobenzene	3	0.20	U	0.20	U	2.5	U
1,3-Dichloropropane	5	0.20	U	0.20	U	2.5	U
1,4-Dichlorobenzene	3	0.20	U	0.20	U	2.5	U
2,2-Dichloropropane	5	0.20	U	0.20	U	2.5	U
2-Butanone	5	0.80	U	0.80	U	2.5	U
2-Chlorotoluene	5	0.20	U	0.20	U	2.5	U
2-Hexanone	5	0.20	U	0.20	U	2.5	U
4-Chlorotoluene	5	0.20	U	0.20	U	5	U
4-Methyl-2-pentanone	5	0.20	U	0.20	U	2.5	U
Acetone	5	<b>5.50</b>		<b>6.30</b>		2.5	U
Benzene	1	0.20	U	0.20	U	2.5	U
Bromobenzene	5	0.20	U	0.20	U	2.5	U
Bromochloromethane	5	0.20	U	0.20	U	2.5	U
Bromodichloromethane	50	0.20	U	0.20	U	2.5	U
Bromoform	50	0.20	U	0.20	U	2.5	U
Bromomethane	5	0.20	U	0.20	U	2.5	U
Carbon disulfide	5	0.20	U	0.20	U	2.5	U
Carbon tetrachloride	5	0.20	U	0.20	U	2.5	U
Chlorobenzene	5	0.20	U	0.20	U	2.5	U
Chloroethane	5	0.20	U	0.20	U	2.5	U
Chloroform	7	0.20	U	0.20	U	2.5	U
Chloromethane	5	0.20	U	0.20	U	2.5	U
cis-1,2-Dichloroethylene	5	0.20	U	0.20	U	2.5	U
cis-1,3-Dichloropropylene	0.4	0.20	U	0.20	U	2.5	U
Dibromochloromethane	5	0.20	U	0.20	U	2.5	U
Dibromomethane	5	0.20	U	0.20	U	2.5	U
Dichlorodifluoromethane	5	0.20	U	0.20	U	2.5	U
Ethyl Benzene	5	0.20	U	0.20	U	2.5	U
Hexachlorobutadiene	0.5	0.20	U	0.20	U	2.5	U
Isopropylbenzene	5	0.20	U	0.20	U	2.5	U
Methyl tert-butyl ether (MTBE)	10	0.20	U	0.20	U	2.5	U
Methylene chloride	5	1	U	1	U	2.5	U
Naphthalene	10	1	U	1	U	2.5	U
n-Butylbenzene	5	0.20	U	0.20	U	5	U
n-Propylbenzene	5	0.20	U	0.20	U	2.5	U
o-Xylene	5	0.20	U	0.20	U	2.5	U
p- & m- Xylenes	5	0.50	U	0.50	U	2.5	U
p-Isopropyltoluene	5	0.20	U	0.20	U	2.5	U
sec-Butylbenzene	5	0.20	U	0.20	U	2.5	U
Styrene	5	0.20	U	0.20	U	2.5	U
tert-Butylbenzene	5	0.20	U	0.20	U	2.5	U
Tetrachloroethylene	5	0.33	J	0.20	U	2.5	U
Toluene	5	0.20	U	0.20	U	2.5	U
trans-1,2-Dichloroethylene	5	0.20	U	0.20	U	2.5	U
trans-1,3-Dichloropropylene	0.4	0.20	U	0.20	U	2.5	U
Trichloroethylene	5	0.20	U	0.20	U	2.5	U
Trichlorofluoromethane	5	0.20	U	0.20	U	7.5	U
Vinyl chloride	2	0.20	U	0.20	U	2.5	U
Xylenes, Total	5	0.60	U	0.60	U	2.5	U

Detected concentrations

Concentrations above AWQS

Notes: AWQS based on NYSDEC TOGS 1.1.1 (Class GA) NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

Table 10: SVOCs in Groundwater

All data in µg/L (parts per billion, ppb) U= Not Detected at or above indicated value Data above AWQS shown in <b>Bold</b>		Sample ID		W-1		W-2		B-5/MW-5	
Sample Date		3/11/2015		3/11/2015		3/25/2015			
Dilution Factor		1		1		1			
SVOCs, 8270	AWQS	Result	Qualifier	Result	Qualifier	Result	Qualifier		
1,2,4-Trichlorobenzene	5	2.56	U	2.63	U	2.5	U		
1,2-Dichlorobenzene	3	2.56	U	2.63	U	2.5	U		
1,3-Dichlorobenzene	3	2.56	U	2.63	U	2.5	U		
1,4-Dichlorobenzene	3	2.56	U	2.63	U	2.5	U		
2,4,5-Trichlorophenol	NA	2.56	U	2.63	U	2.5	U		
2,4,6-Trichlorophenol	NA	2.56	U	2.63	U	2.5	U		
2,4-Dichlorophenol	5	2.56	U	2.63	U	2.5	U		
2,4-Dimethylphenol	50	2.56	U	2.63	U	2.5	U		
2,4-Dinitrophenol	10	2.56	U	2.63	U	2.5	U		
2,4-Dinitrotoluene	5	2.56	U	2.63	U	2.5	U		
2,6-Dinitrotoluene	5	2.56	U	2.63	U	2.5	U		
2-Chloronaphthalene	10	2.56	U	2.63	U	2.5	U		
2-Chlorophenol	NA	2.56	U	2.63	U	2.5	U		
2-Methylnaphthalene	NA	2.56	U	2.63	U	2.5	U		
2-Methylphenol	NA	2.56	U	2.63	U	2.5	U		
2-Nitroaniline	5	2.56	U	2.63	U	2.5	U		
2-Nitrophenol	NA	2.56	U	2.63	U	2.5	U		
3- & 4-Methylphenols	NA	2.56	U	2.63	U	2.5	U		
3,3'-Dichlorobenzidine	5	2.56	U	2.63	U	2.5	U		
3-Nitroaniline	5	2.56	U	2.63	U	2.5	U		
4,6-Dinitro-2-methylphenol	NA	2.56	U	2.63	U	2.5	U		
4-Bromophenyl phenyl ether	NA	2.56	U	2.63	U	2.5	U		
4-Chloro-3-methylphenol	NA	2.56	U	2.63	U	2.5	U		
4-Chloroaniline	5	2.56	U	2.63	U	2.5	U		
4-Chlorophenyl phenyl ether	NA	2.56	U	2.63	U	2.5	U		
4-Nitroaniline	5	2.56	U	2.63	U	0.05	U		
4-Nitrophenol	5	2.56	U	2.63	U	0.05	U		
Acenaphthene	20	0.0513	U	0.0526	U	2.5	U		
Acenaphthylene	NA	0.0513	U	0.0526	U	0.05	U		
Aniline	5	2.56	U	2.63	U	0.5	U		
Anthracene	50	0.0513	U	0.0526	U	2.5	U		
Benzo(a)anthracene	0.002	0.0513	U	0.0526	U	0.05	U		
Benzo(a)pyrene	NA	0.0513	U	0.0526	U	0.05	U		
Benzo(b)fluoranthene	0.002	0.0513	U	0.0526	U	0.05	U		
Benzo(g,h,i)perylene	NA	0.0513	U	0.0526	U	0.05	U		
Benzo(k)fluoranthene	0.002	0.0513	U	0.0526	U	0.05	U		
Benzyl alcohol	NA	2.56	U	2.63	U	2.5	U		
Benzyl butyl phthalate	50	2.56	U	2.63	U	2.5	U		
Bis(2-chloroethoxy)methane	5	2.56	U	2.63	U	2.5	U		
Bis(2-chloroethyl)ether	1	2.56	U	2.63	U	2.5	U		
Bis(2-chloroisopropyl)ether	NA	2.56	U	2.63	U	0.5	U		
Bis(2-ethylhexyl)phthalate	5	0.574		0.526	U	2.5	U		
Chrysene	0.002	0.0513	U	0.0526	U	2.5	U		
Dibenzo(a,h)anthracene	NA	0.0513	U	0.0526	U	0.05	U		
Dibenzofuran	NA	2.56	U	2.63	U	0.05	U		
Diethyl phthalate	50	2.56	U	2.63	U	2.5	U		
Dimethyl phthalate	50	2.56	U	2.63	U	2.5	U		
Di-n-butyl phthalate	50	2.56	U	2.63	U	2.5	U		
Di-n-octyl phthalate	50	2.56	U	2.63	U	2.5	U		
Fluoranthene	50	0.0513	U	0.0526	U	2.5	U		
Fluorene	50	0.0513	U	0.0526	U	0.05	U		
Hexachlorobenzene	0.04	0.0205	U	0.0211	U	0.35			
Hexachlorobutadiene	0.5	0.513	U	0.526	U	0.02	U		
Hexachlorocyclopentadiene	5	2.56	U	2.63	U	0.5	U		
Hexachloroethane	5	0.513	U	0.526	U	2.5	U		
Indeno(1,2,3-cd)pyrene	0.002	0.0513	U	0.0526	U	0.5	U		
Isophorone	50	2.56	U	2.63	U	0.05	U		
Naphthalene	10	0.0513	U	0.0526	U	2.5	U		
Nitrobenzene	0.4	0.256	U	0.263	U	0.05	U		
N-Nitrosodimethylamine	50	0.513	U	0.526	U	0.25	U		
N-nitroso-di-n-propylamine	NA	2.56	U	2.63	U	2.5	U		
N-Nitrosodiphenylamine	50	2.56	U	2.63	U	2.5	U		
Pentachlorophenol	1	0.256	U	0.263	U	0.25	U		
Phenanthrene	50	0.0513	U	0.0526	U	0.05	U		
Phenol	1	2.56	U	2.63	U	2.5	U		
Pyrene	50	0.0513	U	0.0526	U	0.11			
Pyridine	50	2.56	U	2.63	U	0.05	U		

Detected concentrations  
**Concentrations above AWQS**

Notes: AWQS based on NYSDEC TOGS 1.1.1 (Class GA) NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 11: Pesticides and PCBs in Groundwater**

All data in µg/L (parts per billion, ppb)		W-1		W-2		B-5/MW-5	
U= Not Detected at or above indicated value		3/11/2015		3/11/2015		3/25/2015	
Data above AWQS shown in <b>Bold</b>		1		1		1	
Sample ID	Sample Date	Dilution Factor		Dilution Factor		Dilution Factor	
<b>Pesticides, 8081</b>	<b>AWQS</b>	Result	Qualifier	Result	Qualifier	Result	Qualifier
4,4'-DDD	0.3	0.00421	U	0.0041	U	0.004	U
4,4'-DDE	0.2	0.00421	U	0.0041	U	0.004	U
4,4'-DDT	0.2	0.00421	U	0.0041	U	0.004	U
Aldrin	NE	0.00421	U	0.0041	U	0.004	U
alpha-BHC	0.01	0.00421	U	0.0041	U	0.004	U
alpha-Chlordane	0.05	0.00421	U	0.0041	U	0.004	U
beta-BHC	0.04	0.00421	U	0.0041	U	0.04	U
Chlordane, total	0.05	0.0421	U	0.041	U	0.004	U
delta-BHC	0.04	0.00421	U	0.0041	U	0.002	U
Dieldrin	0.004	0.00211	U	0.00205	U	0.004	U
Endosulfan I	NA	0.00421	U	0.0041	U	0.004	U
Endosulfan II	NA	0.00421	U	0.0041	U	0.004	U
Endosulfan sulfate	NA	0.00421	U	0.0041	U	0.004	U
Endrin	NA	0.00421	U	0.0041	U	0.01	U
Endrin aldehyde	5	0.0105	U	0.0103	U	0.01	U
Endrin ketone	5	0.0105	U	0.0103	U	0.004	U
gamma-BHC (Lindane)	0.05	0.00421	U	0.0041	U	0.004	U
gamma-Chlordane	0.05	0.0105	U	0.0103	U	0.004	U
Heptachlor	0.04	0.00421	U	0.0041	U	0.004	U
Heptachlor Epoxide	0.03	0.00421	U	0.0041	U	0.1	U
Methoxychlor	35	0.00421	U	0.0041	U	0.004	U
Toxaphene	0.06	0.105	U	0.103	U	0.004	U
<b>PCBs, 8082</b>							
Sample ID	Sample Date	W-1		W-2		MW-5	
U= Not Detected at or above indicated value		3/11/2015		3/11/2015		3/25/2015	
Data above AWQS shown in <b>Bold</b>		1		1		1	
Sample ID	Sample Date	Dilution Factor		Dilution Factor		Dilution Factor	
<b>PCBs, 8082</b>	<b>AWQS</b>	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aroclor 1016	0.09	0.0526	U	0.0513	U	0.05	U
Aroclor 1221	0.09	0.0526	U	0.0513	U	0.05	U
Aroclor 1232	0.09	0.0526	U	0.0513	U	0.05	U
Aroclor 1242	0.09	0.0526	U	0.0513	U	0.05	U
Aroclor 1248	0.09	0.0526	U	0.0513	U	0.05	U
Aroclor 1254	0.09	0.0526	U	0.0513	U	0.05	U
Aroclor 1260	0.09	0.0526	U	0.0513	U	0.05	U
Aroclor, Total	0.09	0.0526	U	0.0513	U	0.05	U

Detected concentrations

Concentrations above AWQS

Notes: AWQS based on NYSDEC TOGS 1.1.1 (Class GA) NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 12: TAL Metals (Total) in Groundwater**

All data in µg/L (parts per billion, ppb) U= Not Detected at or above indicated value Data above AWQS shown in <b>Bold</b>		Sample ID		W-1		W-2		MW-5	
		Sample Date		3/11/2015		3/11/2015		3/25/2015	
		Dilution Factor		1		1		1	
Metals, 6010 and 7473	AWQS	Result	Qualifier	Result	Qualifier	Result	Qualifier		
Aluminum	NA	37		78		10	U		
Antimony	3	5	U	5	U	5	U		
Arsenic	25	4	U	4	U	4	U		
Barium	1,000	68		534		46			
Beryllium	3	1	U	1	U	1	U		
Cadmium	5	3	U	3	U	3	U		
Calcium	NA	207,000		285,000		207,000			
Chromium	50	5	U	5	U	5	U		
Cobalt	5	5	U	5	U	5	U		
Copper	200	6		16		4			
Iron**	300	20	U	23		1,120			
Lead	25	3	U	3	U	3	U		
Magnesium	35,000	27,600		55,600		59,800			
Manganese**	300	63		133		194			
Mercury	0.7	0.2	U	0.2	U	0.2	U		
Nickel	100	5	U	8		5	U		
Potassium	NA	4,110		11,700		7,980			
Selenium	10	10	U	10	U	10	U		
Silver	50	5	U	5	U	5	U		
Sodium	20,000	120,000		702,000	D	66,400			
Thallium	0.5	5	U	5	U	5	U		
Vanadium	14	10	U	10	U	10	U		
Zinc	2,000	95		22		12			

\*\* combined iron and manganese = 500

Detected concentrations  
**Concentrations above AWQS**

Notes: AWQS based on NYSDEC TOGS 1.1.1 (Class GA) NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

**Table 13: TAL Metals (Dissolved) in Groundwater**

All data in µg/L (parts per billion, ppb) U= Not Detected at or above indicated value Data above AWQS shown in <b>Bold</b>		Sample ID		W-1		W-2		B-5/MW-5	
		Sample Date		3/11/2015		3/11/2015		3/25/2015	
		Dilution Factor		1		1		1	
Metals, 6010 and 7473	AWQS	Result	Qualifier	Result	Qualifier	Result	Qualifier		
Aluminum	NA	11		42		10	U		
Antimony	3	5	U	5	U	5	U		
Arsenic	25	4	U	4	U	4	U		
Barium	1,000	68		548		46			
Beryllium	3	1	U	1	U	1	U		
Cadmium	5	3	U	3	U	3	U		
Calcium	NA	211,000		288,000		201,000			
Chromium	50	5	U	5	U	5	U		
Cobalt	5	5	U	5	U	5	U		
Copper	200	5		15		3			
Iron**	300	20	U	20	U	<b>394</b>			
Lead	25	3	U	3	U	3	U		
Magnesium	35,000	28,000		<b>56,000</b>		<b>59,000</b>			
Manganese**	300	62		137		195			
Mercury	0.7	0.2	U	0.2	U	0.2	U		
Nickel	100	5	U	8		5	U		
Potassium	NA	4,060		11,400		7,380			
Selenium	10	10	U	10	U	10	U		
Silver	50	5	U	5	U	5	U		
Sodium	20,000	<b>120,000</b>		<b>695,000</b>	D	<b>64,200</b>			
Thallium	0.5	5	U	5	U	5	U		
Vanadium	14	10	U	10	U	10	U		
Zinc	2,000	95		20		10	U		

\*\* combined iron and manganese = 500

Detected concentrations  
**Concentrations above AWQS**

Notes: AWQS based on NYSDEC TOGS 1.1.1 (Class GA) NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

Table 14: VOCs in Soil Vapor

All data in $\mu\text{g}/\text{m}^3$		SV-01		SV-02		SV-03		SV-04	
Sample ID		3/2/2015		03/02/15		03/02/15		03/02/15	
Sample Date		1		1		1		1	
Dilution Factor		1		1		1		1	
VOCs, 8260	NYSDOH Matrix Value	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1,1-Trichloroethane	NA	1.09	U	1.09	U	61.7		87.3	
1,1,2,2-Tetrachloroethane	NA	1.37	U	1.37	U	1.37	U	1.37	U
1,1,2-Trichloroethane	NA	1.09	U	1.09	U	1.09	U	1.09	U
1,1-Dichloroethane	NA	0.809	U	0.809	U	155		25.2	
1,1-Dichloroethene	NA	0.793	U	0.793	U	1.86		0.852	
1,2,4-Trichlorobenzene	NA	1.48	U	1.48	U	1.48	U	1.48	U
1,2,4-Trimethylbenzene	NA	0.983	U	7.57		0.983	U	0.983	U
1,2-Dibromoethane	NA	1.54	U	1.54	U	1.54	U	1.54	U
1,2-Dichlorobenzene	NA	1.2	U	1.2	U	1.2	U	1.2	U
1,2-Dichloroethane	NA	0.809	U	0.809	U	0.809	U	0.809	U
1,2-Dichloropropane	NA	0.924	U	0.924	U	0.924	U	0.924	U
1,3,5-Trimethylbenzene	NA	0.983	U	2.19		0.983	U	0.983	U
1,3-Butadiene	NA	25.9		6.97		3.38		2.48	
1,3-Dichlorobenzene	NA	1.2	U	1.2	U	1.2	U	1.2	U
1,4-Dichlorobenzene	NA	1.2	U	1.2	U	1.2	U	1.2	U
1,4-Dioxane	NA	0.721	U	1.63		2.01		0.721	U
2,2,4-Trimethylpentane	NA	0.934	U	0.934	U	1.32		2.66	
2-Butanone	NA	3.04		17.9		6.81		2.41	
2-Hexanone	NA	0.82	U	2.45		0.82	U	0.82	U
3-Chloropropene	NA	0.626	U	0.626	U	0.626	U	0.626	U
4-Ethyltoluene	NA	0.983	U	1.67		0.983	U	0.983	U
4-Methyl-2-pentanone	NA	2.05	U	7.25		2.05	U	2.05	U
Acetone	NA	54.4		113		54.6		19.9	
Benzene	NA	5.37		6.71		6.77		8.53	
Benzyl chloride	NA	1.04	U	1.04	U	1.04	U	1.04	U
Bromodichloromethane	NA	1.34	U	1.34	U	1.34	U	1.34	U
Bromoform	NA	2.07	U	2.07	U	2.07	U	2.07	U
Bromomethane	NA	0.777	U	0.777	U	0.777	U	0.777	U
Carbon disulfide	NA	6.1		2.14		34.9		14.8	
Carbon tetrachloride	NA	3.38		6.35		53.2		11.6	
Chlorobenzene	NA	0.921	U	0.921	U	0.921	U	0.921	U
Chloroethane	NA	0.528	U	0.528	U	3.19		0.528	U
Chloroform	NA	3.96		3.03		35.9		11.4	
Chloromethane	NA	0.96		0.413	U	0.69		0.622	
cis-1,2-Dichloroethene	NA	0.793	U	0.793	U	4.76		2.53	
cis-1,3-Dichloropropene	NA	0.908	U	0.908	U	0.908	U	0.908	U
Cyclohexane	NA	4.68		3.65		3.07		5.34	
Dibromochloromethane	NA	1.7	U	1.7	U	1.7	U	1.7	U
Dichlorodifluoromethane	NA	3.13		1.94		2.82		2.84	
Ethanol	NA	36.9		465		151		15	
Ethyl Acetate	NA	1.8	U	1.8	U	1.8	U	1.8	U
Ethylbenzene	NA	1.89		11.6		2.35		1.95	
Freon-113	NA	1.53	U	1.53	U	1.53	U	1.53	U
Freon-114	NA	1.4	U	1.4	U	1.4	U	1.4	U
Heptane	NA	5.7		7.87		2.27		3.53	
Hexachlorobutadiene	NA	2.13	U	2.13	U	2.13	U	2.13	U
Isopropanol	NA	2.56		5.97		26.8		1.23	U
Methyl tert butyl ether	NA	0.721	U	1.42		0.721	U	3.68	
Methylene chloride	60	1.74	U	1.74	U	74		5.18	
n-Hexane	NA	7.58		8.71		4.83		6.52	
o-Xylene	NA	2.82		11.1		3.04		3.21	
p/m-Xylene	NA	5.21		21.4		6.17		5.91	
Styrene	NA	0.852	U	0.852	U	0.852	U	0.852	U
Tertiary butyl Alcohol	NA	1.57		13.6		1.52	U	1.73	
Tetrachloroethene	100	2.62		10.4		40.3		43.2	
Tetrahydrofuran	NA	1.47	U	1.47	U	1.47	U	1.47	U
Toluene	NA	5.65		43.7		8.14		10.8	
trans-1,2-Dichloroethene	NA	0.793	U	0.793	U	0.793	U	0.793	U
trans-1,3-Dichloropropene	NA	0.908	U	0.908	U	0.908	U	0.908	U
Trichloroethene	5	1.07	U	1.07	U	10		2.38	
Trichlorofluoromethane	NA	1.76		1.43		1.96		1.3	
Vinyl bromide	NA	0.874	U	0.874	U	0.874	U	0.874	U
Vinyl chloride	NA	0.511	U	0.511	U	1.43		12.7	

Detected concentrations  
 Elevated concentrations  
 Concentrations above AGVs

Notes: Decision matrix values based on NYSDOH soil vapor guidance NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank

Table 14: VOCs in Soil Vapor

All data in $\mu\text{g}/\text{m}^3$ U= Not Detected at or above indicated value Data above AGVs shown in <b>Bold</b>	Sample ID	SV-05		SV-06		SV-07	
	Sample Date	03/02/15		03/02/15		03/02/15	
	Dilution Factor	1		1		1	
	NYSDOH Matrix Value	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1,1-Trichloroethane	NA	1.44		1.09	U	1.09	U
1,1,2,2-Tetrachloroethane	NA	1.37	U	1.37	U	1.37	U
1,1,2-Trichloroethane	NA	1.09	U	1.09	U	1.09	U
1,1-Dichloroethane	NA	0.809	U	0.809	U	0.809	U
1,1-Dichloroethene	NA	0.793	U	0.793	U	0.793	U
1,2,4-Trichlorobenzene	NA	1.48	U	1.48	U	1.48	U
1,2,4-Trimethylbenzene	NA	1.51		1.22		1.16	
1,2-Dibromoethane	NA	1.54	U	1.54	U	1.54	U
1,2-Dichlorobenzene	NA	1.2	U	1.2	U	1.2	U
1,2-Dichloroethane	NA	0.809	U	0.809	U	0.809	U
1,2-Dichloropropane	NA	0.924	U	0.924	U	0.924	U
1,3,5-Trimethylbenzene	NA	0.983	U	0.983	U	0.983	U
1,3-Butadiene	NA	1.84		12.7		1.45	
1,3-Dichlorobenzene	NA	1.2	U	1.2	U	1.2	U
1,4-Dichlorobenzene	NA	1.2	U	1.2	U	1.2	U
1,4-Dioxane	NA	0.721	U	0.721	U	0.721	U
2,2,4-Trimethylpentane	NA	1.33		1.24		0.934	U
2-Butanone	NA	1.47	U	7.08		1.47	U
2-Hexanone	NA	0.82	U	1.13		0.82	U
3-Chloropropene	NA	0.626	U	0.626	U	0.626	U
4-Ethyltoluene	NA	0.983	U	0.983	U	0.983	U
4-Methyl-2-pentanone	NA	2.05	U	4.07		2.05	U
Acetone	NA	8.22		31.8		2.38	U
Benzene	NA	3.08		8.43		1.17	
Benzyl chloride	NA	1.04	U	1.04	U	1.04	U
Bromodichloromethane	NA	1.34	U	1.34	U	1.34	U
Bromoform	NA	2.07	U	2.07	U	2.07	U
Bromomethane	NA	0.777	U	0.777	U	0.777	U
Carbon disulfide	NA	2.83		9.78		0.623	U
Carbon tetrachloride	NA	1.26	U	1.26	U	1.26	U
Chlorobenzene	NA	0.921	U	0.921	U	0.921	U
Chloroethane	NA	0.528	U	0.528	U	0.528	U
Chloroform	NA	1.89		8.5		6.84	
Chloromethane	NA	0.413	U	0.516		0.413	U
cis-1,2-Dichloroethene	NA	0.793	U	0.793	U	0.793	U
cis-1,3-Dichloropropene	NA	0.908	U	0.908	U	0.908	U
Cyclohexane	NA	5.13		3.27		1.16	
Dibromochloromethane	NA	1.7	U	1.7	U	1.7	U
Dichlorodifluoromethane	NA	2.8		2.5		2.1	
Ethanol	NA	4.71	U	23.4		4.71	U
Ethyl Acetate	NA	1.8	U	1.8	U	1.8	U
Ethylbenzene	NA	3.91		9.95		1.82	
Freon-113	NA	1.53	U	1.53	U	1.53	U
Freon-114	NA	1.4	U	1.4	U	1.4	U
Heptane	NA	1.93		2.91		0.82	U
Hexachlorobutadiene	NA	2.13	U	2.13	U	2.13	U
Isopropanol	NA	1.23	U	1.26		1.23	U
Methyl tert butyl ether	NA	2.28		1.59		0.721	U
Methylene chloride	60	2.46		1.74	U	1.74	U
n-Hexane	NA	1.8		3.88		0.705	U
o-Xylene	NA	4.05		6.78		3.1	
p/m-Xylene	NA	8.21		16.6		5.86	
Styrene	NA	0.852	U	0.852	U	0.852	U
Tertiary butyl Alcohol	NA	1.52	U	1.52	U	1.52	U
Tetrachloroethene	100	26		12.7		4.14	
Tetrahydrofuran	NA	1.47	U	1.47	U	1.47	U
Toluene	NA	14.1		39.6		4.79	
trans-1,2-Dichloroethene	NA	0.793	U	0.793	U	0.793	U
trans-1,3-Dichloropropene	NA	0.908	U	0.908	U	0.908	U
Trichloroethene	5	1.07	U	1.07	U	1.07	U
Trichlorofluoromethane	NA	1.41		1.51		1.56	
Vinyl bromide	NA	0.874	U	0.874	U	0.874	U
Vinyl chloride	NA	0.511	U	0.511	U	0.511	U

Detected concentrations  
 Elevated concentrations  
 Concentrations above AGVs

Notes: Decision matrix values based on NYSDOH soil vapor guidance NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank



**APPENDIX C**

***Proposed Development Plans***

# 3745 3RD AVENUE

3475 3RD AVENUE, BRONX, NY 10456

## DRAWING LIST

ARCHITECTURAL		ISSUE DATE		
		10.09.2014 DOB	MM.DD.YYYY ISSUED	XXXXX
DWG No.	DRAWING NAME			
T-001.00	COVER SHEET, LIST OF DRAWINGS	●		
Z-001.00	ZONING ANALYSIS	●		
G-001.00	GENERAL NOTES, SYMBOLS, LOCATION PLAN	●		
G-001.00	ADA NOTES AND DETAILS	●		
A-100.00	SITE PLAN	●		
A-110.00	CELLAR PLAN	●		
A-111.00	GROUND FLOOR PLAN	●		
A-112.00	2ND FLOOR PLAN	●		
A-113.00	3RD - 5TH FLOOR PLANS	●		
A-114.00	6TH - 12TH FLOOR PLANS	●		
A-115.00	ROOF PLAN	●		
A-200.00	EAST AND WEST BUILDING ELEVATIONS	●		
A-300.00	BUILDING SECTION	●		

PLUMBING & SPRINKLER		ISSUE DATE		
DWG No.	DRAWING NAME	10.09.2014 DOB	MM.DD.YYYY ISSUED	XXXXX

MECHANICAL		ISSUE DATE		
DWG No.	DRAWING NAME	10.09.2014 DOB	MM.DD.YYYY ISSUED	XXXXX



OWNER:  
167-168 THIRD AVE. LLC  
PO Box 234550 | GREAT NECK, NY 11023

ARCHITECT  
OCV Architects  
203 LAFAYETTE ST, 5th FL | NEW YORK, NY 10012  
TEL: 212.675.6470 | FAX: 212.675.6728

MEP CONSULTANT:

STRUCTURAL CONSULTANT:  
WEXLER ASSOCIATES  
12 W 32ND STREET #10 | NEW YORK, NY 10001  
TEL: 212.643.1500 | FAX: 212.643.2277



DATE: 10/09/14  
JOB #: 14J17  
DRAWN BY: L.P. - S.P.

T-001.00  
PAGE# 01 OF 13

**ZONING**

3475 THIRD AVENUE  
BRONX, NY 10456

BLOCK: 2372  
LOT: 32  
ZONING MAP: 3d  
ZONE: MX7 (M1-1/R7-2)

Lot Dimensions: 210.4' x 125.09' = 24,729.6 sf

**Section 12-10 ZR**

Base Plane Calculation  
Points Along Street Wall Line  
(41.7' + 42.54' + 42.7' + 43.18' + 43.36' + 43.56') / 6 = 42.84'

**Section 123-662 ZR (Special Purpose District)**

Height Regulations  
Maximum Base Height = 60'-0"  
Proposed Base Height = 21'-0"  
Maximum Building Height = 135'-0"  
Proposed Building Height = 120'-0"  
Required Setback from Street = 10'-0"  
Proposed Setback from Street = 10'-0"

**Section 23-145 ZR (Quality Housing Standards)**

Lot Coverage  
Maximum Allowable Lot Coverage = 65%  
24,729.6 sf x 0.65 = 16,074.24 sf  
Proposed Lot Coverage = 9,767 sf

**Floor Area Ratio (ZR123-64)**

Commercial (M1-1): 1.00 (ZR123-64/24-11)  
Residential (R 7-1): 4.00 (ZR123-64/24-11)  
Community facility: 6.50 (ZR123-64)

Commercial ZFA: 24,729.6 sf  
Residential ZFA: 98,918 sf  
Community ZFA: 160,783.5 sf

Total Allowable Floor Area (Residential)  
24,729.6 x 4.00 = 98,918.4 sf  
Mechanical Exclusions: 1,215 sf  
Proposed Gross Floor Area: 106,138 sf  
Quality Housing Program Deductions: 7,423.1 sf  
Total Proposed Floor Area: 98,714.9 sf

**Section 23-22 ZR**

Maximum # of Dwelling Units:  
Maximum Allowable Floor Area/680 = 98,918/680 = 145 DU  
Proposed # of Dwelling Units = 102 DU

**Section 25-25 (a) ZR**

Required Parking:  
25% of Government Assisted Housing = 26 spaces  
25% of 102 Dwelling Units = 26 spaces  
Proposed Parking = 26 spaces

**Section 25-86 (b) ZR**

Required Bicycle Parking Waived due to insufficient space below the first story

**Section 26-41 ZR**

1 tree required per 25' of street frontage  
Total Street Frontage = 150'-0"  
Required # of trees = 150'-0"/25' = 6 trees  
Existing trees = 0 trees  
Proposed trees = 6 trees  
Planting all required trees is infeasible adjacent to zoning lot.  
Remaining (3) trees may be planted offsite as determined by the Department of Parks and Recreation.

**PERMITTED COMMUNITY FACILITY AND COMMERCIAL USES**

**Section 22-10 ZR - USES PERMITTED AS-OFF-RIGHT**

**Section 22-14 ZR**

Use Group 4  
Community Facilities: Clubs, community centers, houses of worship, monasteries, noncommercial recreation centers

**Section 42-10 ZR - USES PERMITTED AS-OFF-RIGHT**

**Section 42-11**

Use Group 4A: As noted above

**Section 42-12**

Use Group 16A: Retail or Service Establishments: Moving or storage offices

**PARKING REQUIREMENTS**

**Section 25-30 ZR - REQUIRED OFF STREET PARKING FOR PERMITTED NON-RESIDENTIAL USES**

**Section 25-31**

Community Facility (Community center): None required  
General Retail Uses: None required

**Section 44-52 ZR - REQUIRED ACCESSORY OFF-STREET LOADING BERTHS**

M1-1, Commercial uses, all retail or service use  
First 8,000 sf of floor area = none  
Next 17,000 sf of floor area = 1 loading berth  
Next 15,000 sf of floor area = 1 loading berth

Total Commercial Floor Area = 25,609.9sf  
25,609.9sf - 8,000sf = 17,609.9sf (none required)  
17,609.9sf - 17,000sf = 609.9sf (1 required berth)  
609.9sf - 15,000sf = -14,390.1sf (1 required berth)

Total Required Berths = 2

Total Provided Berths = 1

OCCUPANCY CLASSIFICATION: R2 RESIDENTIAL  
CONSTRUCTION CLASSIFICATION: I-B (2 HOUR PROTECTED)  
PROJECT DESIGN IN CONFORMANCE WITH:  
TITLE 28 NYC BUILDING CODE (EFFECTIVE JULY 2008)

**QUALITY HOUSING PROGRAM COMPLIANCE**

**Sec 23-011**

The zoning lot has existing buildings to remain.  
Existing buildings contain no residences.  
The entire zoning lot complies with QH FAR and density standards.

**Sec 28-21**

All dwelling units exceed 400 sf floor area

**Sec 28-22**

All windows to be double glazed

**Sec 28-23**

Trash room at each floor 25sf-12sf.  
Deduction of 12sf gross zoning area (12sf x 12 = 144sf deduction)  
Required storage and removal location: 2.9 cubic feet per dwelling unit (102 x 2.9 = 295.8 cubic feet)

**Sec 28-24**

Laundry Room Requirements  
1 Washer/20 D.U. = 6 washers  
Washers provided = 6 washers  
1 Dryer/40 D.U. = 3 dryers  
Dryers provided = 3 dryers

**Sec 28-25**

At least 20 sf of window is provided at corridors on 1st floor.  
50% of floor area of 1st floor vestibule and lobby may be deducted from gross zoning floor area.

1st Floor Vestibule and Lobby = 450.9 sf x 50% = 225.5 sf  
2nd Floor Terrace Corridor = 195 sf x 50% = 97.5 sf  
Total Deduction = 323 sf

**Sec 28-31**

Required recreation space = 3.3% of residential floor area = 98,918.4 sf x 3.3% = 3,264.3 sf  
Recreation space provided:  
2nd floor: Indoor = 674 sf; Outdoor = 6,461 sf  
Total proposed recreation space = 7,135 sf

**Sec 28-33**

Planted area between street line & building wall not required for egress.

**Sec 28-41**

Less than 11 dwellings on each story, 50% of corridor floor area is deducted from gross zoning floor area.  
1st Floor Vestibule, Lobby, and Corridor = 450.9 sf x 50% = 225.5 sf  
2nd Floor Corridor = 717.2 sf x 50% = 358.6 sf  
3rd - 12th Floor Corridors = 603.3 sf x 50% x 10 = 3017 sf  
Total Deduction = 3,601.1 sf

Trash Room Deduction = 12sf x 12 floors = 144 sf  
Daylight in Corridor = 323 sf  
Density per Corridor = 3,601.1 sf  
Exterior Wall Thickness Insulation = 3,355 sf

Total Quality Housing Deduction = 7,423.1 sf  
106,435.5 sf - 7,504.4 sf = 98,931.1 sf  
Total Zoning Floor Area = 98,714.9 sf

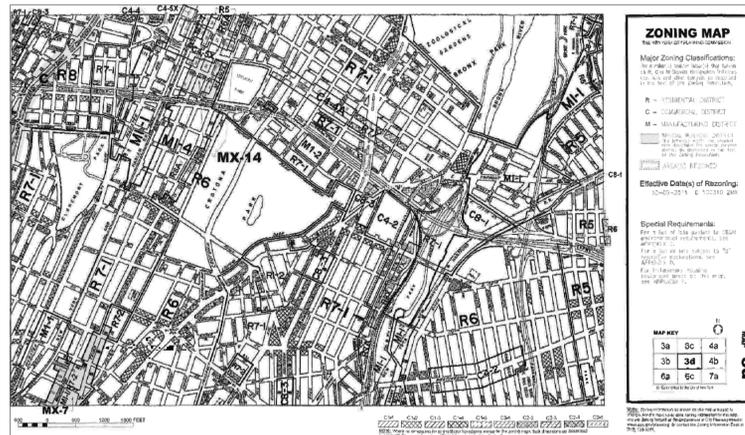
RESIDENTIAL FLOOR AREA CALCULATION									
FLOOR	GROSS SF/FL	GROSS ZONING	MECH SF/FL	ZONING SF/FL	SEC. 28-41 ZR (DENSITY)	SEC. 28-25 ZR (DAY LIGHT)	EXTERIOR WALL THICKNESS B'	REFUSE	TOTAL ADJUSTED SF
CELLAR									
FIRST	1,967.0	1,967.0	0.0	1,967.0	225.5	225.5	28.0	12.0	1,476.0
SECOND	9,767.0	9,767.0	105.0	9,662.0	358.6	97.5	312.0	12.0	8,881.9
THIRD	9,767.0	9,767.0	111.0	9,656.0	301.7	0.0	312.0	12.0	9,030.3
FOURTH	9,767.0	9,767.0	111.0	9,656.0	301.7	0.0	312.0	12.0	9,030.3
FIFTH	9,767.0	9,767.0	111.0	9,656.0	301.7	0.0	312.0	12.0	9,030.3
SIXTH	9,474.0	9,474.0	111.0	9,363.0	301.7	0.0	297.0	12.0	8,752.3
SEVENTH	9,474.0	9,474.0	111.0	9,363.0	301.7	0.0	297.0	12.0	8,752.3
EIGHTH	9,474.0	9,474.0	111.0	9,363.0	301.7	0.0	297.0	12.0	8,752.3
NINTH	9,474.0	9,474.0	111.0	9,363.0	301.7	0.0	297.0	12.0	8,752.3
TENTH	9,474.0	9,474.0	111.0	9,363.0	301.7	0.0	297.0	12.0	8,752.3
ELEVENTH	9,474.0	9,474.0	111.0	9,363.0	301.7	0.0	297.0	12.0	8,752.3
TWELFTH	9,474.0	9,474.0	111.0	9,363.0	301.7	0.0	297.0	12.0	8,752.3
BULKHEAD									
TOTAL	107,353.0	107,353.0	1,215.0	106,138.0	3601.1	323.0	3355.0	144.0	98714.9

COMMERCIAL FLOOR AREA CALCULATION			
FLOOR	EXISTING ZONING SF	NEW ZONING SF	TOTAL ZONING SF
FIRST	6,322.6	12,964.7	19,287.3
SECOND	6,322.6	0.0	6,322.6
TOTAL	12,645.2	12,964.7	25,609.9

COMMUNITY FACILITY FLOOR AREA CALCULATION			
FLOOR	EXISTING ZONING SF	NEW ZONING SF	TOTAL ZONING SF
FIRST	0.0	0.0	0.0
SECOND	0.0	0.0	0.0
THIRD	6,322.0	0.0	6,322.0
FOURTH	6,322.0	0.0	6,322.0
FIFTH	6,322.0	0.0	6,322.0
TOTAL	18,966.0	0.0	18,966.0

TOTAL FLOOR AREA CALCULATION	
TYPE	ZONING SF
RESIDENTIAL	98,714.9
COMMERCIAL	25,609.9
COMMUNITY	18,966.0
TOTAL	143,290.8

**ZONING MAP**



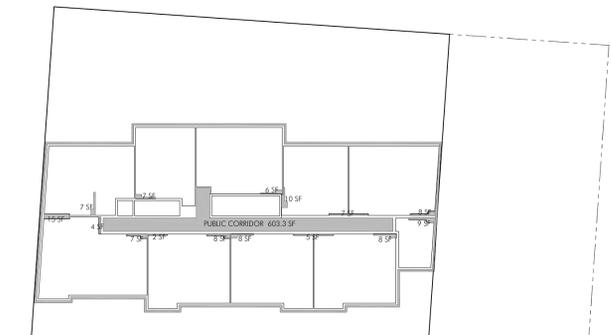
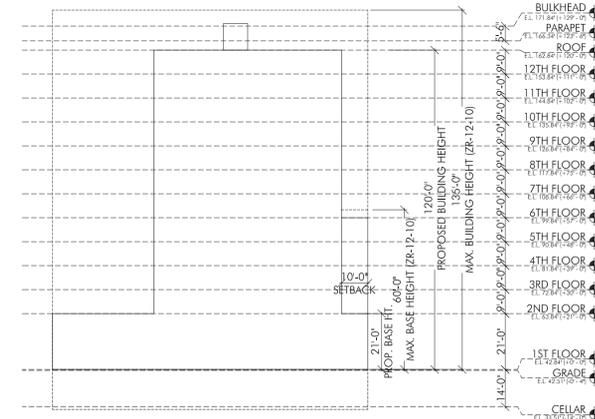
**ZONING MAP**  
The City of New York Department of City Planning  
Major Zoning Classifications:  
R - RESIDENTIAL DISTRICT  
C - COMMERCIAL DISTRICT  
M - MANUFACTURING DISTRICT  
Effective Date of Rezoning: 12/28/2011  
Special Requirements:  
MAP KEY:  
3a 3c 4a  
3b 3d 4b  
6a 6c 7a

Scale: 1" = 100'

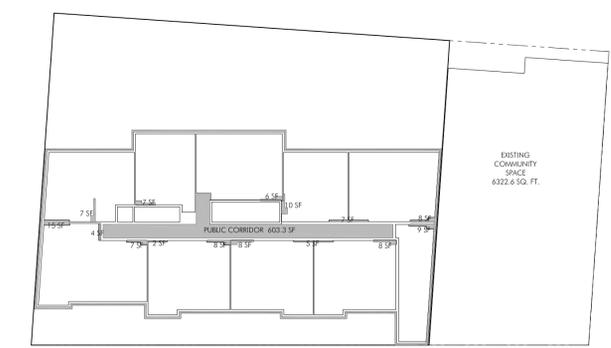
North Arrow

Scale: 1" = 100'

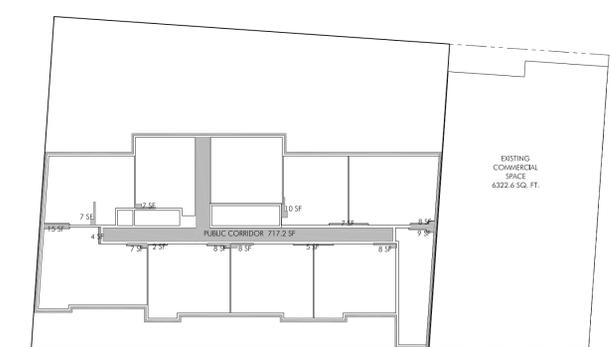
**SECTION ANALYSIS**



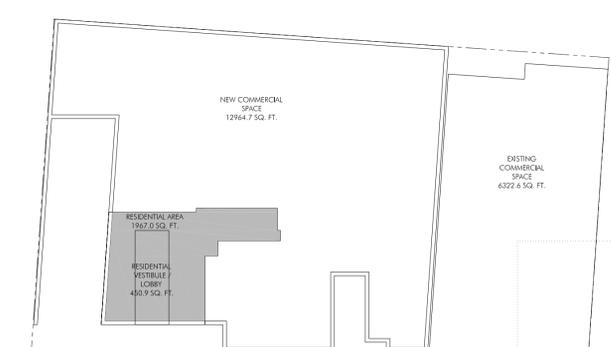
GROSS	9,474 SQ. FT.
CORRIDOR 50%	301.7 SQ. FT.
CORRIDOR W/	0 SQ. FT.
WINDOVS 50%	0 SQ. FT.
MECHANICAL	111.0 SQ. FT.
TRASH RM	12.5 SQ. FT.
EXTERIOR WALL INSULATION B'	297.0 SQ. FT.
SUBTOTAL	8,752.3 SQ. FT.
TOTAL	x1 = 81,266.9 SQ. FT.



GROSS	9,767 SQ. FT.
CORRIDOR 50%	301.7 SQ. FT.
CORRIDOR W/	0 SQ. FT.
WINDOVS 50%	0 SQ. FT.
MECHANICAL	111.0 SQ. FT.
TRASH RM	12.5 SQ. FT.
EXTERIOR WALL INSULATION B'	312.0 SQ. FT.
SUBTOTAL	9,030.3 SQ. FT.
TOTAL	x3 = 27,090.9 SQ. FT.



GROSS	9,767 SQ. FT.
CORRIDOR 50%	358.6 SQ. FT.
CORRIDOR W/	0 SQ. FT.
WINDOVS 50%	97.5 SQ. FT.
MECHANICAL	105.0 SQ. FT.
TRASH RM	12.5 SQ. FT.
EXTERIOR WALL INSULATION B'	312.0 SQ. FT.
SUBTOTAL	8,881.9 SQ. FT.
TOTAL	x1 = 8,881.9 SQ. FT.



GROSS	1,967 SQ. FT.
CORRIDOR 50%	255.5 SQ. FT.
CORRIDOR W/	0 SQ. FT.
WINDOVS 50%	0 SQ. FT.
MECHANICAL	0 SQ. FT.
TRASH RM	12.5 SQ. FT.
EXTERIOR WALL INSULATION B'	28.5 SQ. FT.
SUBTOTAL	1,476.0 SQ. FT.
TOTAL	x1 = 1,476.0 SQ. FT.

**167-168 3RD AVENUE LLC**

**3475 3RD AVENUE**

**KEY PLAN:**

**OWNER:**

**STRUCTURAL CONSULTANT:**

**MEP CONSULTANT:**

**NO. REVISION: DATE:**

**ADDRESS:**

**DRAWING TITLE:**

**ARCHITECT: SEAL & SIGNATURE:**

**DRAWING #:**

**DATE:**

**JOB #:**

**DRAWN BY:**

**SCALE INDICATOR MEASURES 1" WHEN PLOT SCALE IS 1:1**

**02 OF 13**

**FORD BOB USE ONLY**

**OCV ARCHITECTS**

**WWW.OCVARCH.COM**

**203 LAFAYETTE STREET 5TH FL**

**NEW YORK CITY NEW YORK 10012**

**212 675 6470 | 212 675 6728**

**167-168 3RD AVENUE LLC**

**P.O. BOX 234550 | GREAT NECK, NY 11023**

**12 W 32ND STREET #10 | NEW YORK, NY 10001**

**TEL: 212.643.1500 | FAX: 212.643.2277**

**3475 3RD AVENUE**

**BRONX, NY 10456**

**Z-001.00**

**10/09/14**

**14J17**

**LP-SP**

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**1**

## GENERAL NOTES:

- ALL DIMENSIONS AND CONDITIONS DESCRIBED IN THE CONTRACT DOCUMENTS ARE TO BE VERIFIED IN THE FIELD. ARCHITECT IS TO BE ADVISED OF ANY DISCREPANCIES IMMEDIATELY.
- THE CONSTRUCTION NOTES AND/OR DRAWINGS ARE SUPPLIED TO ILLUSTRATE THE DESIGN AND THE GENERAL TYPE OF CONSTRUCTION DESIRED AND ARE INTENDED TO IMPLY THE FINEST QUALITY OF MATERIALS, METHODS AND WORKMANSHIP THROUGHOUT.
- THE CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF DOB CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND SHOP DRAWINGS ON THE CONSTRUCTION FLOOR DURING ALL PHASES OF CONSTRUCTION FOR USE BY ALL TRADES AND WILL REMOVE ALL OUTDATED DRAWINGS FROM THE JOB SITE.
- THE CONTRACTOR UPON ACCEPTANCE AND APPROVAL OF THE DRAWINGS ASSUMES FULL RESPONSIBILITY FOR THE CONSTRUCTION MATERIALS AND WORKMANSHIP OF THE WORK DESCRIBED IN THESE NOTES AND DRAWINGS AND WILL EXECUTE TO COMPLY WITH THE SPIRIT AS WELL AS THE LETTER IN WHICH THEY WERE WRITTEN.
- THE DRAWINGS AND NOTES INDICATE AND REFER TO ANY INTERIOR/EXTERIOR WORK AND ARE MEANT TO CONVEY INSTRUCTIONS, WHETHER WRITTEN OR IMPLIED, FOR A COMPLETE SCOPE OF WORK, INCLUSIVE OF THOSE MINOR FIELD CONDITIONS INHERENT IN THE WORK.
- CONTRACTOR SHALL PERFORM ALL WORK IN COMPLIANCE WITH ALL APPLICABLE STATE AND CITY CODES AND REGULATIONS.
- CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED BY LAW AND PAY FOR SAME PRIOR TO ANY WORK. PERMITS SHALL BE SUBMITTED TO ALL PARTIES INVOLVED IN PROJECT AND DISPLAY SAME AT SITE AS PER DOB REGULATIONS.
- CONTRACTOR SHALL COORDINATE ALL REQUIRED INSPECTIONS OF SYSTEMS OR OTHER REQUIRED APPROVALS.
- CONTRACTOR WILL COORDINATE WORK OF ALL TRADES, INCLUDING THOSE THAT MAY BE UNDER SEPARATE CONTRACT, PROJECT SCHEDULING AND OVERALL CLEANUP.
- CONTRACTOR IS TO KEEP JOB SITE CLEAN DURING CONSTRUCTION AND REMOVE ALL DEBRIS FROM PREMISES ON A CONTINUAL BASIS.
- SUBSTITUTION OF DETAILS, FIXTURES, MATERIALS, EQUIPMENT, ETC., IS TO BE BY ARCHITECT'S WRITTEN APPROVAL ONLY.
- THE CONTRACTOR SHALL COORDINATE WORK WITH THE MANUFACTURER'S SPECIFICATIONS.
- METAL STUD WALLS AND POSTS OF METAL PARTITIONS SHALL BE SECURED TO THE STRUCTURAL ELEMENTS AT ALL LOCATIONS.
- ALL DIMENSIONS FOR PARTITIONS ARE FROM FINISH TO FINISH, UNLESS OTHERWISE INDICATED.
- WALLS SHOWN ALIGNED WITH BASE BUILDING STRUCTURE SHALL BE CONSTRUCTED FLUSH AND SMOOTH WITH BASE BUILDING STRUCTURE UNLESS OTHERWISE INDICATED.
- ALL WALLS AND CEILING SURFACES SHALL BE PROPERLY PREPARED, SPOCKLED, SANDED, ETC. TO PROVIDE A PERFECTLY SMOOTH AND TRUE FINISH AND SURFACE.
- WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE, FIRE DEPARTMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS & BEST TRADE PRACTICES.
- BEFORE COMMENCING WORK, THE CONTRACTOR SHALL FILE ALL REQUIRED CERTIFICATES OF INSURANCE WITH THE DEPARTMENT OF BUILDINGS, PAY ALL FEES REQUIRED BY GOVERNING NEW YORK CITY AGENCIES, OBTAIN ALL REQUIRED PERMITS AND PROVIDE ANY AND ALL BONDS REQUIRED BY ANY CITY AGENCY IN ORDER TO DO WORK HEREIN DESCRIBED.
- CONTRACTOR SHALL OBTAIN SEPARATE PERMIT AND APPROVAL FROM DEPARTMENT OF HIGHWAYS FOR ALL WORK BEYOND BUILDING LINES AND REQUIRED.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK AND SHALL REPORT ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS TO THE ARCHITECT IMMEDIATELY.
- MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR PROPER CONSTRUCTION OF ANY PART OF THE WORK SHALL BE INCLUDED AS IF THEY WERE INDICATED IN THE DRAWINGS.
- THE CONTRACTOR SHALL COORDINATE ALL WORK PROCEDURES WITH REQUIREMENTS OF LOCAL AUTHORITIES, BUILDING MANAGEMENT, AND OWNERS REPRESENTATIVES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL OR REMOVAL TASKS. THE CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY FOR ANY DAMAGE OR INJURIES CAUSED BY OR DURING THE EXECUTION OF THE WORK.
- THE CONTRACTOR SHALL LAYOUT HIS OWN WORK, AND SHALL PROVIDE ALL DIMENSIONS REQUIRED FOR OTHER TRADES: PLUMBING, ELECTRICAL, MECHANICAL, ETC.
- PLUMBING AND ELECTRICAL WORK SHALL BE PERFORMED BY PERSONS LICENSED IN THEIR TRADES, WHO SHALL ARRANGE OR OBTAIN INSPECTIONS AND REQUIRED SIGN-OFFS.
- THE CONTRACTOR SHALL DO ALL CUTTING, PATCHING, REPAIRING AS REQUIRED TO PERFORM ALL OF THE WORK INDICATED ON THE DRAWINGS, AND ALL OTHER WORK THAT MAY BE REQUIRED TO COMPLETE THE JOB.
- ENGINEER HAS NOT BEEN RETAINED TO SUPERVISE CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING TEMPORARY AND NEW CERTIFICATE OF OCCUPANCY, INCLUDING ALL REQUIRED FILINGS, APPLICATIONS, SIGN-OFFS, INSPECTIONS AND APPROVALS.

## DEMOLITION NOTES:

- THE CONTRACTOR SHALL PERFORM ALL OPERATIONS OF DEMOLITION AND REMOVAL INDICATED ON THE DRAWINGS AND AS MAY BE REQUIRED BY THE WORK. ALL WORK SHALL BE DONE CAREFULLY AND NEATLY, IN A SYSTEMATIC MANNER.
- DURING REPLACEMENT OF ROOF, CARE SHALL BE MADE TO MAINTAIN WATERTIGHT SEAL. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE DUE TO WATER LEAKS.
- NO DEBRIS SHALL BE ALLOWED TO ACCUMULATE ON THE SITE. DEBRIS SHALL BE REMOVED BY THE CONTRACTOR WHO SHALL ASSUME FULL RESPONSIBILITY FOR DAMAGE AND SHALL MAKE REPAIRS REQUIRED WITH NO ADDITIONAL COST TO THE OWNER.
- NO DEBRIS SHALL BE ALLOWED TO ACCUMULATE ON THE SITE. DEBRIS SHALL BE REMOVED BY THE CONTRACTOR AS THE JOB PROCEEDS. THE SITE SHALL BE LEFT BROOM CLEAN AT THE COMPLETION OF DEMOLITION.
- NO STRUCTURAL ELEMENTS SHALL BE REMOVED UNLESS PORTIONS AFFECTED ARE ADEQUATELY SUPPORTED BY EITHER TEMPORARY SHORING OR NEW STRUCTURAL ELEMENTS AS REQUIRED TO PROTECT THE STABILITY AND INTEGRITY OF THE EXISTING STRUCTURE.
- ALL ADJOINING PROPERLY AFFECTED BY ANY OPERATIONS OF DEMOLITION SHALL BE PROTECTED PER THE REQUIREMENTS OF ARTICLE 19 OF THE N.Y.C. BUILDING CODE.
- REMOVE OR RELOCATE ALL WIRING, PLUMBING, AND MECHANICAL EQUIPMENT AFFECTED BY REMOVAL OF PARTITIONS. REMOVED PIPES AND/OR LINES SHALL BE CUT TO A POINT OF CONCEALMENT BEHIND OR BELOW FINISH SURFACES, AND SHALL BE PROPERLY CAPPED OR PLUGGED.
- THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ALL TEMPORARY BARRIERS AND GUARDS, AND ALL TEMPORARY SHORING AND BRACING AS REQUIRED BY DEPARTMENT OF BUILDING RULES AND REGULATIONS.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE WEATHER PROTECTION FOR THE NEW BUILDING AND ITS CONTENTS DURING THE COURSE OF THE WORK. ALL OPENINGS IN ANY WALL OR ROOF SHALL BE PROTECTED FROM ALL FORMS OF WEATHER OR WATER.

## INTERIOR NOTES - OLD BUILDING CODE

- ALL INTERIOR WOOD TO BE USED ONLY AS PERMITTED ON SECTION C22 666.0 AND C26 667.0 OF THE NEW YORK CITY BUILDING CODE.
- STAIR SIGNS AS PER SECTION C26 608.0 (NEW CODE).
- ALL INTERIOR ROOMS TO BE MECHANICALLY VENTILATED IN ACCORDANCE W/ VENTILATION AND AIR CONDITIONING RULES EFFECTIVE JUNE 1, 1959.
- ALL ACOUSTICAL OR RATED PARTITIONS TO EXTEND TO FLOOR ABOVE.
- OWNER IS COGNIZANT OF RETROACTIVE REQUIREMENTS OF LOCAL LAW 5/73.
- ALL PENETRATIONS OF RATED CONSTRUCTION SHALL COMPLY WITH SECTION C26 684.0 OF BUILDING CODE.
- ALL PLUMBING WORK SHALL BE IN ACCORDANCE WITH ARTICLE 15 OF THE NEW YORK CITY BUILDING CODE.
- WOOD OR OTHER COMBUSTIBLE MATERIALS SHALL BE USED IN ACCORDANCE WITH THE REQUIREMENTS OF C26 667.0 (1938 CODE).
- ALL BATHROOM FLOORS TO BE MADE WATERPROOF WITH MATERIAL APPROVED BY THE DEPARTMENT OF BUILDINGS. WATERPROOF MATERIAL IS TO EXTEND A MINIMUM OF 6" ABOVE THE FLOOR AT THE BASE OF THE WALL.

## SMOKE/CARBON MONOXIDE DETECTORS NOTES PER 907.2.10.1:

- 907.2.10.1.1 SMOKE ALARMS IN GROUPS R-2, R-3, AND I-1. SINGLE OR MULTIPLE STATION SMOKE ALARMS SHALL BE INSTALLED AND MAINTAINED IN GROUPS R-2, R-3, REGARDLESS OF OCCUPANT LOAD AT ALL OF THE FOLLOWING LOCATIONS WITHIN A DWELLING UNIT:
  - ON THE CEILING OR WALL OUTSIDE OF EACH ROOM USED FOR SLEEPING PURPOSES WITHIN 15 FEET FROM THE DOOR TO SUCH ROOM.
  - IN EACH ROOM USED FOR SLEEPING PURPOSES.
  - IN EACH STORY WITHIN A DWELLING UNIT, INCLUDING BELOW-GRADE STORIES AND PENTHOUSES OF ANY AREA.
    - 907.2.10.2 POWER SOURCE. REQUIRED SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM A DEDICATED BRANCH CIRCUIT OR THE UNSWITCHED PORTION OF A BRANCH CIRCUIT ALSO USED FOR POWER AND LIGHTING, AND SHALL BE EQUIPPED WITH A BATTERY BACKUP. SMOKE ALARMS SHALL EMIT A SIGNAL WHEN THE BATTERIES ARE LOW. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN AS REQUIRED FOR OVER-CURRENT PROTECTION.
    - 907.2.10.5 GROUP R-2 OCCUPANCY. SMOKE ALARMS SHALL BE PROVIDED WITH THE CAPABILITY TO SUPPORT VISIBLE ALARM NOTIFICATION APPLIANCES IN ACCORDANCE WITH ICC/ANSI A117.1-2003

## BOILER ROOM NOTES (AS PER SEC. 65 OF MDL.1)

- WALLS ENCLOSING BOILER TO BE OF FIREPROOF MATERIAL HAVING A 1HR FIRE RATING. NOTE: 4" SQUID CINDER BLOCK IS GENERALLY USED.
- CEILING OF ENTIRE BOILER ROOM SHALL BE PROPERLY FIRE RETARDED WITH ONE OF THE FOLLOWING: (a) 1/2" PLASTER BOARDS COVERED WITH 26 GA METAL. (b) METAL LATH AND 3/4" CEMENT OR 1" GYPSUM MORTAR. (c) ROCK LATH AND 3/4" GYPSUM MORTAR.
- FLOOR OF BOILER ROOM SHALL BE OF CONCRETE CONSTRUCTION.
- FIXED VENTILATION TO OUTER AIR FOR BOILER ROOM REQUIRED MIN. AREA EQUAL TO SMOKE STACK (NORMALLY 64 SF /NOTE: WHERE DUCT IS REQUIRED TO PROVIDE FIXED VENTILATION; SAME MUST BE ENCASED IN METAL LATH AND CEMENT OR GYPSUM MORTAR.
- METERS DUMBWATER SHAFTS, ELEVATOR SHAFTS, INTERIOR STAIRS OR REQUIRED OUTSIDE CELAR ENTRANCES CANNOT BE LOCATED WITHIN BOILER ROOM.
- A MINIMUM OF 18" CLEARANCE REQUIRED BETWEEN BOILER AND ENCLOSING WALLS.
- DOOR TO BOILER ROOM TO BE 1HR TEST FIREPROOF SELF-ENCLOSING AS PER BOARD OF STANDARDS AND APPEALS APPROVAL.
- ELECTRIC LIGHT TO BE PROVIDED WITHIN BOILER ROOM.
- OIL BURNER REMOTE CONTROL SWITCH MUST BE LOCATED OUTSIDE BOILER ROOM.
- NO STORAGE PERMITTED WITHIN BOILER ROOM.

## 28-103.8.4 TENANT PROTECTION PLAN.

CONSTRUCTION DOCUMENTS FOR ALTERATIONS OF BUILDINGS IN WHICH ANY DWELLING UNIT WILL BE OCCUPIED DURING CONSTRUCTION SHALL INCLUDE A TENANT PROTECTION PLAN. SUCH PLAN SHALL CONTAIN A STATEMENT THAT THE BUILDING CONTAINS DWELLING UNITS THAT WILL BE OCCUPIED DURING CONSTRUCTION AND SHALL INDICATE IN SUFFICIENT DETAIL THE SPECIFIC UNITS THAT ARE OF MAY BE OCCUPIED DURING CONSTRUCTION, THE MEANS AND METHODS TO BE EMPLOYED TO SAFEGUARD THE SAFETY AND HEALTH OF THE OCCUPANTS, INCLUDING, WHERE APPLICABLE, DETAILS SUCH AS TEMPORARY FIRE-RATED ASSEMBLIES, OPENING PROTECTIVE, OR DUST CONTAINMENT PROCEDURES. THE ELEMENTS OF THE TENANT PROTECTION PLAN MAY VARY DEPENDING ON THE NATURE AND SCOPE OF WORK BUT AT A MINIMUM SHALL MAKE DETAILED AND SPECIFIC PROVISIONS FOR:

- EGRESS.** AT ALL TIMES IN THE COURSE OF CONSTRUCTION PROVISION SHALL BE MADE FOR ADEQUATE EGRESS AS REQUIRED BY THIS CODE AND THE TENANT PROTECTION PLAN SHALL IDENTIFY THAT EGRESS THAT WILL BE PROVIDED. REQUIRED EGRESS SHALL NOT BE OBSTRUCTED AT ANY TIME EXCEPT WHERE APPROVED BY THE COMMISSIONER.
- FIRE SAFETY.** ALL NECESSARY LAWS AND CONTROLS, INCLUDING THOSE WITH RESPECT TO OCCUPIED DWELLINGS, AS WELL AS ADDITIONAL SAFETY MEASURES NECESSITATED BY THE CONSTRUCTION SHALL BE STRICTLY OBSERVED.
- HEALTH REQUIREMENTS.** SPECIFICATION OF METHODS TO BE USED FOR CONTROL OF DUST, DISPOSAL OF CONSTRUCTION DEBRIS, PEST CONTROL AND MAINTENANCE OF SANITARY FACILITIES, AND LIMITATION OF NOISE TO ACCEPTABLE LEVELS SHALL BE INCLUDED.

- 3.1 THERE SHALL BE INCLUDED A STATEMENT OF COMPLIANCE WITH APPLICABLE PROVISIONS OF LAW RELATED TO LEAD AND ASBESTOS.

- COMPLIANCE WITH HOUSING STANDARDS.** THE REQUIREMENTS OF THE NEW YORK CITY HOUSING MAINTENANCE CODE, AND, WHERE APPLICABLE, THE NEW YORK STATE MULTIPLE DWELLING LAW SHALL BE STRICTLY OBSERVED.

- STRUCTURAL SAFETY.** NO STRUCTURAL WORK SHALL BE DONE THAT MAY ENDANGER THE OCCUPANTS.

- NOISE RESTRICTIONS.** WHERE HOURS OF THE DAY OR THE DAYS OF THE WEEK IN WHICH CONSTRUCTION WORK MAY BE UNDERTAKEN ARE LIMITED PURSUANT TO THE NEW YORK CITY NOISE CONTROL CODE, SUCH LIMITATIONS SHALL BE STATED.

## HOUSING MAINTENANCE NOTES:

- CENTRAL HEAT TO BE PROVIDED AS PER D26-17.01 HMC.
- WATER SUPPLY TO BUILDING TO COMPLY WITH SECTION 27-2024 H.M.C.
- WATER SUPPLY TO INDIVIDUAL UNITS AND FIXTURES SHALL COMPLY WITH SECTION 27-2025 H.M.C.
- SUPPLY OF HOT WATER TO COMPLY WITH SEC. 27-2031 H.M.C.
- PROVIDE MAIL SERVICE AS PER D26-21.01 HMC.
- FLOOR SIGNS SHALL BE POSTED AND MAINTAINED PER SECTION 27-2048 H.M.C.
- STREET NUMBER SHALL BE POSTED AND MAINTAINED PER SEC. 27-2049 H.M.C.
- POSTING OF REGISTRATION SIGN AS PER D26-41.15 HMC.
- BUILDINGS TO BE REGISTERED AS PER D26-41.15 HMC.
- NIGHT LIGHTING IN PUBLIC HALLS AND STAIRS OF DWELLING TO COMPLY WITH D26-19.05 HMC.
- PROVIDE KEY LOCKS FOR ALL APARTMENT DOORS, HEAVY DUTY DEAD BOLT, THUMB TURN INSIDE LATCH SET AND CHAIN DOOR GUARD AS PER D26-20.05 HMC.
- PROVIDE BSA APPROVED PEEP HOLES IN ENTRANCE DOORS TO EACH DWELLING UNIT AS PER D26-20.01 HMC.
- PAINTING OF PUBLIC PARTS WITHIN DWELLINGS TO COMPLY WITH D26-12.01 HMC.
- PAINTING OF FIRE ESCAPES AND WINDOW FRAMES AS PER D26-12.03 HMC.
- RECEPTACLES FOR COLLECTION OF WASTE PAPER TO BE PROVIDED AS PER D26-14.03 HMC, AND D26-14.05 AND D26-14.07 HMC.
- DRAINAGE OF ROOFS, COURTS, AND YARDS TO COMPLY WITH D26-16.03 HMC.
- PROPER ELECTRIC LIGHTING EQUIPMENT WITHIN DWELLING TO BE PROVIDED AND MAINTAINED AS PER D26-19.01, D26-19.05, D26-19.03 HMC.
- PROVIDE ELECTRIC LIGHTS AT ENTRANCEWAYS, YARDS AND COURTS AS PER D26-19.07 HMC, ON SEPARATE CIRCUIT OR CONNECTED TO HOUSE LINE SERVICING PUBLIC HALLS, AND IN ACCORDANCE WITH THE REQUIREMENTS OF DEPT. OF WATER SUPPLY, GAS AND ELECTRICITY.
- ENGINEER HAS NOT BEEN RETAINED TO SUPERVISE WORK.
- CONTRACTORS ARE TO VERIFY AND CHECK ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE AND REPORT ALL DISCREPANCIES TO THE ARCHITECT.
- PARTITIONS ENCLOSING BATHROOMS TO BE METAL STUDS AND MOISTURE RESISTANT GYPSUM WALL BOARD AS PER BSA 756-625M.
- ALL DOORS OPENING ON PUBLIC HALLWAY TO BE SELF CLOSING AS PER D26-20.07 HMC. ALL DOORS OPENING ON PUBLIC HALLWAY TO BE 1 HOUR FFS.
- COMPLY WITH LI 29/89 FOR LOW FLOW FIXTURES
- SMOKE/CO DETECTORS SHALL BE INSTALLED PER SUBCHAPTER 17, ARTICLE 6 PER RS 17-12 AND SHALL BE LOCATED AT OR NEAR THE CEILING WITHIN 15 FT. OF ROOMS USED FOR SLEEPING PURPOSE IN 1-2 OCCUPANCIES AND BE MAINTAINED PER H.M.C. SECTION 27-2045
- NATURAL LIGHT AND VENTILATION SHALL BE PROVIDED IN ALL LIVING ROOMS IN MULTIPLE DWELLINGS PER H.M.C. SECTION 27-2057 AND 27-2058.
- SANITARY FACILITIES SHALL BE PROVIDED IN EVERY APARTMENT IN MULTIPLE DWELLING PER H.M.C. SECTION 27-2066 AND WITH HOT WATER SUPPLIED TO PLUMBING FIXTURES PER H.M.C. SECTION 27-2031.
- KITCHENS IN MULTIPLE DWELLINGS SHALL CONFORM TO H.M.C. SECTIONS 27-2070, 27-2071, AND 27-2072.
- LIVING ROOMS IN MULTIPLE DWELLINGS SHALL BE SIZED CONFORMING TO H.M.C. SECTION 27-2074.
- THE ENTRANCE DOORS TO EACH DWELLING UNIT IN A MULTIPLE DWELLING BE PROVIDED WITH A PEEPHOLE PER H.M.C. SECTION 27-2041 AND WITH A LOCK AND CHAIN GUARD PER H.M.C. SECTION 27-2043.
- CLEANING OF ROOF, YARDS, COURTS AND OTHER OPEN SPACES SHALL COMPLY WITH H.M.C. SECTION 27-2010
- THE BUILDING OWNER SHALL MAINTAIN THE SANITARY AND STORM DRAINAGE SYSTEMS AND EQUIPMENT PER SECTIONS 27-2026 AND 27-2027 OF H.M.C.
- ELECTRIC LIGHTING FIXTURES OR OUTLETS FOR LIGHTING FIXTURES SHALL BE INSTALLED AND MAINTAINED FOR EVERY ROOM AND PUBLIC HALL PER SECTIONS 27-2937, 27-2038 AND 27-2039 H.M.C.
- PROVIDE ARTIFICIAL EXTERIOR LIGHTING AT ALL EXITOR ENTRANCE WAYS AND IN YARDS AND COURTS TO BE INSTALLED AND MAINTAINED PER SECTION 27-2040 OF H.M.C.

## MULTIPLE DWELLING NOTES:

\* BUILDING SHALL COMPLY WITH ART. 7 AND APPLICABLE PROVISIONS OF ART. 3 MULTIPLE DWELLING LAW (MDL)

- ROOMS IN BASEMENT TO COMPLY WITH SEC. 216, SEC. 34 (6) MDL, CEILING HEIGHTS TO COMPLY WITH SEC. 218 SUB (B) MDL.
- HOUSE NUMBERS SHALL BE PROPERLY DISPLAYED AS PER SEC. 886 CITY CHARTER.
- VENTILATION IN PUBLIC HALLS AND STAIRS TO COMPLY WITH SEC. 217 MDL.
- EGRESS TO COMPLY WITH SEC. 231 MDL, STAIRS TO MEET SEC. 233(B) TO SEC. 238 MDL.
- BUILDING TO COMPLY WITH SEC. 233 MDL, DOOR TO BE FIREPROOF AND SELF CLOSING.
- PUBLIC CORRIDORS AND STAIRS TO MEET SEC. 234 MDL, STAIRS IN PUBLIC CORRIDOR TO BE 3'-0" MIN.
- ALL DOORS TO PUBLIC HALLS TO BE SELF-CLOSING AND FIREPROOF.
- STAIRS TO COMPLY WITH SEC. 235, 237, 238, 239, AND 242 MDL, WINDOWS IN STAIR HALL TO BE GLAZED WITH WIRE GLASS, BALUSTRADE AND RAILING TO BE 2'-6" AND 2'-8" MAX ABOVE FRONT EDGE OF TREADS (2'-8" MIN AND 3'-0" MAX ABOVE LANDING).
- PARTITIONS AND FIRESTOPPING TO COMPLY WITH SEC. 241 MDL, SOUNDPROOFING BETWEEN APTS AND PUBLIC HALL SHALL COMPLY W/SEC. 84 MDL
- CELLAR STAIR TO COMPLY WITH SEC. 242 AND 50 MDL, STAIR TO BE ENCLOSED IN FIREPROOF ENCLOSURE AND HAVE FIREPROOF DOORS AND ASSEMBLIES AT ALL OPENINGS
- SPACES UNDER STAIRS TO COMPLY WITH SEC. 244 MDL. NO CLOSETS CONSTRUCTED UNDER STAIRS LEADING FROM ENTRANCE STORY TO UPPER STORIES. SPACES TO BE CLEAR AND FREE OF ENCUMBRANCES.
- COOKING SPACES TO COMPLY WITH SECTION 33 MDL CEILINGS AND WALLS TO BE FIRE RETARDED. PROTECT ALL COMBUSTIBLE MATERIALS WITHIN 1'-0" OF COOKING APPARATUS AS PER SEC. 33 MDL.
- ALL GAS APPLIANCES TO COMPLY WITH SEC. 64 MDL AND LOCAL LAW 124/55.
- PROVIDE FRONT, COURT, AND REAR LIGHTING AS PER SEC 26 SUB (7A) AND 35 MDL.
- ALL BUILDING ENTRANCE DOORS MUST BE SELF-CLOSING AND HAVE SELF-LOCKING DEVICES AND INTERCOMMUNICATION SYSTEM AS PER 50A MDL.
- MAIN ENTRANCE DOOR SHALL HAVE NOT LESS THAN FIVE(5) SQ.FT. OF GLAZED SURFACE AS PER 35 MDL.
- TRASH COMPACTOR CHUTE TO COMPLY WITH SECTION 51 MDL, TO HAVE FIREPROOF ENCLOSURE AND FIREPROOF DOORS AND SELF CLOSING ASSEMBLIES.
- PEEP HOLES TO COMPLY WITH SC51-A MDL.
- MAIL RECEPTACLES TO COMPLY WITH SEC. 57 MDL.
- PARAPETS AND GUARD RAILS TO COMPLY WITH SEC 62 SUB 2 MDL.
- LIGHTING, GAS METERS AND APPLIANCES ON PREMISES SHALL COMPLY WITH SEC 64 MDL, NO GAS METERS PERMITTED IN BOILER ROOM.
- BOILER ROOMS TO COMPLY WITH SEC 65 MDL ENCLOSED IN FIREPROOF WALLS AND ALL OPENINGS TO HAVE FIREPROOF AND SELF CLOSING DOORS AND ASSEMBLIES.
- SMOKE DETECTORS TO COMPLY WITH SEC. 68 MDL.
- WATER CLOSETS TO COMPLY WITH SEC. 68 MDL. ALL BATHROOMS SHALL HAVE CERAMIC TILE FLOORS AND 6" MIN CERAMIC TILE SANITARY COVE BASE AT PERIMETER AND DUCKROCK FINISH ON WALLS (BSA NO. 486.39 SM). BATHROOMS TO BE VENTED NATURALLY AS PER SEC. 76 MDL OR MECHANICALLY WITH 4 AIR CHANGES PER HOUR AND OPERATE BETWEEN 6 A.M. TO MIDNIGHT. NO NUISANCE NOISE OR VIBRATION SHALL BE CREATED BY VENTILATING UNITS.
- PLUMBING AND DRAINAGE AS PER 77 MDL.

## ENERGY NOTES (NEW YORK CITY 2011 ENERGY CONSERVATION CODE):

- THE HEATING SYSTEM WHEN INSTALLED AS DESIGNED, WILL BE IN ACCORDANCE WITH ALL APPLICABLE LAWS, ORDINANCE, AND REGULATIONS. THE SYSTEM WAS DESIGNED AS RECOMMENDED BY THE AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ASSOCIATION GUIDES. THE SYSTEM IS BASED ON THE INSIDE TEMPERATURE BEING MAINTAINED AT 72° F, WHEN THE OUTSIDE TEMPERATURE IS ±15° F WITH A 15 MPH WIND.
- CALCULATIONS FOR HEATING (HEAT LOSS) ARE BASED ON ECC CHAPTER 5 OF 2011 NYCCEC MINIMUM INSULATION STANDARDS AS NOTED BELOW. A. EXTERIOR MASS WALLS R = 11.4a B. EXTERIOR MTL. STUD WALLS R = 19 C. ROOF R = 38 (AVERAGE) D. FLOORS EXPOSED TO OUTSIDE R = 10.4a E. FLOORS OVER UNHEATED AREA R = 10.4a F. ALL WINDOWS (DOUBLE GLAZING) VINYL U = 0.40, ALUMINUM U =0.55 G. CURTAIN WALL/STOREFRONT U-0.50 H. ENTRANCE DOORS U = 0.85 NOTE U-FACTOR = BTU/HOUR SQUARE FOOT DEGREES FAHRENHEIT TEMPERATURE DIFFERENCE.

## SPECIAL INSPECTIONS AND PROGRESS INSPECTIONS:

- AS PER TITLE 28 NYC BUILDING CODE (EFFECTIVE JULY 2008) SPECIAL INSPECTIONS AND PROGRESS INSPECTIONS SHALL BE PERFORMED FOR ALL ITEMS DESIGNATED BY THE DESIGN APPLICANT. 1&1 FORMS SHALL BE FILED WITH THE NEW YORK CITY DEPARTMENT OF BUILDINGS BY THE SPECIAL/PROGRESS INSPECTION APPLICANTS DESIGNATED BY THE CONTRACTOR PRIOR TO PERMIT AND PRIOR TO SIGN-OFF.
- PRIOR TO APPROVAL:** THE P.E. OR R.A. RESPONSIBLE FOR THE PLANS SHALL IDENTIFY THE REQUIRED SPECIAL/PROGRESS INSPECTIONS AND/OR TESTS PRIOR TO APPROVAL. (DESIGN APPLICANT)
- PRIOR TO PERMIT FILING:** THE SPECIAL/PROGRESS INSPECTION APPLICANT SHALL IDENTIFY, DATE AND DESIGNATE RESPONSIBILITY FOR PERFORMING THE REQUIRED SPECIAL/PROGRESS INSPECTIONS AT PERMIT.
- PRIOR TO SIGN-OFF:** WHEN ALL OR A PORTION OF THE REQUIRED SPECIAL/PROGRESS INSPECTIONS HAVE BEEN SATISFIED THE SPECIAL/PROGRESS INSPECTION APPLICANT SHALL DATE AND CERTIFY COMPLETION OF THE SPECIFIED ITEMS.
- A LICENSED CONCRETE TESTING LABORATORY SHALL BE RETAINED TO PERFORM CONCRETE TESTS. THE LICENSED CONCRETE TESTING LAB SHALL IDENTIFY DATE AND DESIGNATE RESPONSIBILITY FOR CONCRETE TEST CYLINDERS AND CONCRETE DESIGN MIX; THIS NEED NOT BE PERFORMED BY A SPECIAL INSPECTION AGENCY. TAKE FOUR (4) CYLINDERS OF EACH 50 CUBIC YARD OF CONCRETE OF EACH CLASS PLACED ON ANY ONE DAY. TESTING ONE (1) AT 7 DAYS AND THREE (3) AT 28 DAYS. ALSO TAKE TESTS OF SLUMP, TEMPERATURE, AIR CONTENT AND UNIT WEIGHT.
- FORMS SHALL BE FILED BY THE MANUFACTURER AND SUPPLIER, RESPECTIVELY, OF STRUCTURAL MASONRY UNIT AND SHALL INDICATE STRENGTHS OF MASONRY UNITS SUPPLIED

THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FILING FEES AND ALL COSTS ASSOCIATED WITH RETAINING ENGINEERING SERVICES, INSPECTION & TESTING FOR THE FOLLOWING SPECIAL INSPECTIONS AND PROGRESS INSPECTIONS:

## E.C.C. PROGRESS INSPECTIONS

PROGRESS INSPECTION	TABLE REFERENCE IN 1RCNY 85000-01 (h)(2)
FENESTRATION THERMAL VALUES AND RATINGS	(IIA3)
FENESTRATION RATINGS FOR AIR LEAKAGE	(IIA4)
FENESTRATION AREAS	(IIA5)
HVAC AND SERVICE WATER HEATING EQUIPMENT	(IIB33)
HVAC AND SERVICE WATER HEATING SYSTEM CONTROLS	(IIB4)

## SPECIAL AND PROGRESS INSPECTIONS

SPECIAL INSPECTIONS	
FIRE STOP, DRAFTSTOP, AND FIRE BLOCK SYSTEM	BC 1704.25
PROGRESS INSPECTIONS	
FINAL	28-116.2.4.2 BC 109.5, DIRECTIVE 14 OF 1975, AND 1 RCNY 101-10

## ABBREVIATIONS

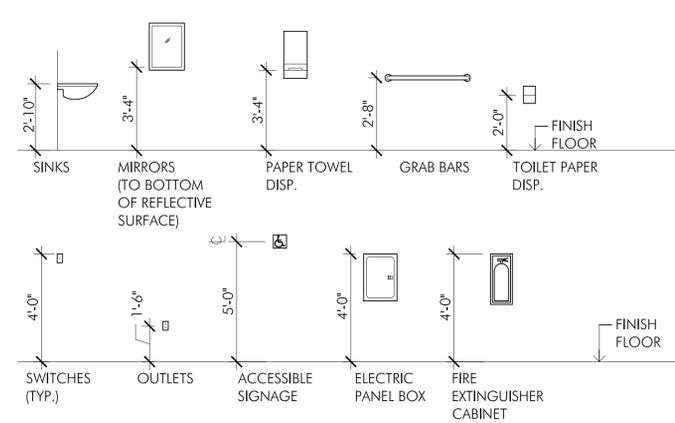
@	AT	ELEC.	ELECTRIC EQUIP.	OPNG.	OPENING
A.C.	AIR CONDITIONER	EQUIP.	EQUIPMENT	OPP.	OPPOSITE HAND
A.D.	AREA DRAIN	EXH.	EXHAUST	PART.	PARTITION
A.F.F.	ABOVE FINISHED FLOOR	EXIST.	EXISTING	PL.	PLASTER
A.F.R.	ABOVE FINISHED ROOF	EXP.	EXPANSION	PL.GL.	PLATE GLASS
ALUM.	ALUMINUM	F.A.I.	FRESH AIR INTAKE	PPLYWD.	PLYWOOD
APPVD.	APPROVED	F.C.	FIRE CODE	R.	RANGE
APT.	APARTMENT	F.D.	FLOOR DRAIN	RI.	RISER
A.S.	ALUMINUM SADDLE	FIN.	FINISHED FLOOR	R.D.	ROOF DRAIN
B.C.	BUILDING CODE	FL.	FLOOR	REIN.	REINFORCE
BD.	BOARD	F.P.	FIREPROOF	REF.	REFRIGERATOR
BLDG.	BUILDING	F.P.S.C.	FIREPROOF SELF CLOSING	REQ.	REQUIRED
BLK.	BLOCK	FT.	FOOT	REV.	REVISION
BM.	BEAM	GA.	GAUGE	R.S.	RAISED SILL
B.C.	BOTTOM OF CURB	G.I.	GALVANIZED IRON	R.U.	REMOVABLE UNIT
B.O.	BOTTOM OF	GL.	GLASS	S.	SINK
BOT.	BOTTOM	GOVT.	GOVERNMENT	S.A.B.	SOUND ATTENUATION
B.P.	BEARING PLATE	H.B.	HOSE BIBB	BLANKETS	
BR.	BEDROOM	H.C.	HOLLOW CORE	SECT.	SECTION
B.S.A.	BOARD OF STANDARDS & APPEALS	HGT.	HEIGHT	S.F.	SQUARE FEET
B.S.B.	BETWEEN STOP BEADS	H.M.	HOLLOW METAL HOUSING MAINTENANCE	SIM.	SIMILAR
B.U.	BUILT UP	H.M.C.	HOUSING MAINTENANCE CODE	S.S.	SERVICE SINK
C.L.	CENTER LINE	HR.	HOUR	STD.	STANDARD
CAB.	CABINET	INSUL.	INSULATION	STL.	STEEL
CEM.	CEMENT	INT.	INTERIOR	STR.	STAIR
CEM.PL.	CEMENT PLASTER	JT.	JOINT	SUSP.	SUSPENDED
CL.	CLOSET	KTTE	KITCHENETTE	T.	TOILET
CLG.	CEILING	LAV.	LAVATORY	T.C.	TOP OF CURB
COL.	COLUMN	LDR.	LEADER	T.O.	TOP OF
CONC.	CONCRETE	LGT.	LIGHT	T.L.	TRAFFIC LIGHT
CONT.	CONTINUOUS	LIN.	LINEN CLOSET	TY.P.	TYPICAL
CORR.	CORRIDOR	L.P.	LIGHT POLE	U.L.	UNDERWRITERS LAB
CP.	CARPET	LR/D	LIVING ROOM/DINING	V.C.T.	VINYL COMPOSITION TILE
C.T.	CERAMIC TILE	L.W.	LIGHTWEIGHT	VEST.	VESTIBULE
C.U.FT.	CUBIC FEET	MACH.	MACHINE	W.	WIDE FLANGE
D.A.	DROPPED ARCH	MAS.	MASONRY	W/	WITH
DEPT.	DEPARTMENT	MAX.	MAXIMUM	W.C.	WATER CLOSET
DET.	DETAIL	M.C.	MEDICINE CABINET	WD.	WOOD
D.H.	DOUBLE HUNG	M.ECH.	MECHANICAL	W.G.	WINDOW GUARD
DIA.	DIAMETER	MIN.	MINIMUM	W.GL.	WIRE GLASS
DIM.	DIMENSION	M.O.	MASONRY OPENING	W.H.	WATER HEATER
DN.	DOWN	M.S.	MARBLE SADDLE	W.M.	WASHING MACHINE
DR.	DOOR	M.D.L.	MULTIPLE DWELLING LAW	W.P.	WATERPROOF
DWR.	DRAWER	N.I.C.	NOT IN CONTRACT	W.R.	WATER RESISTANT
DWG.	DRAWING	NO.	NUMBER	W.W.M.	WELDED WIRE MESH
EA.	EACH	O.C.	ON CENTER	Y.D.	YARD DRAIN
EL.	ELEVATION	O.D.	OUTSIDE DIAMETER		

## SYMBOLS

	DETAIL DESIGNATION		SPOT ELEVATIONS		SMOKE DETECTOR HARD WIRED W/ NO SWITCH OTHER THAN OVER CURRENT DEVICE
	SECTION DESIGNATION		FLOOR DRAIN		SMOKE DETECTOR/CARBON MONOXIDE HARD WIRED W/ NO SWITCH OTHER THAN OVER CURRENT DEVICE
	DOOR DESIGNATION		AREA DRAIN		SMOKE DETECTOR/CARBON MONOXIDE WITH STROBE LIGHT HARD WIRED W/ NO SWITCH OTHER THAN OVER CURRENT DEVICE
	WALL DESIGNATION		APARTMENT DESIGNATION # OF BEDROOMS APARTMENT SQ FT		FIXED SECURITY BARS
	FAN DIRECTION OF		ROOM DESIGNATION		MIN 5% OF ENTIRE BUILDING = DISABLED BODY DWELLING UNITS, SEE BATH & KITCHEN DETAILS
	EXHAUST		KEYLESS, FIRE DEPT. APPROVED OPERABLE SECURITY GATE		
	WINDOW DESIGNATION		AREA OF JOIST REPLACEMENT AND/OR REPAIR		
	EXHAUST DUCT EXHAUST				

## TYPICAL MOUNTING HEIGHTS

ALL MOUNTING HEIGHTS FOR ACCESSIBLE ITEMS SHALL BE COMPLIANT WITH ICC/ANSI A117.1 AND ADAAG REQUIREMENTS



# 167-168 3RD AVENUE LLC

PROJECT TITLE:

## 3475 3RD AVENUE

KEY PLAN:



OWNER:

167-168 3RD AVENUE LLC  
P.O. BOX 234550 | GREAT NECK, NY 11023

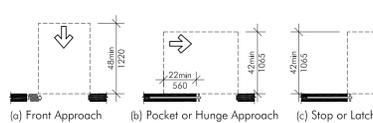
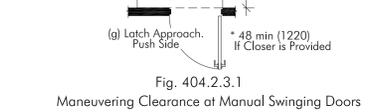
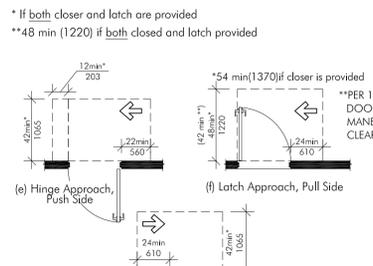
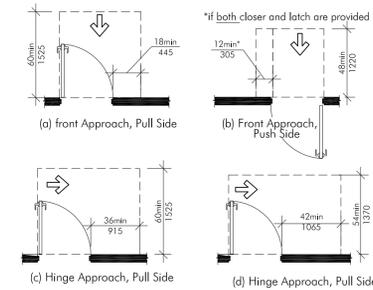
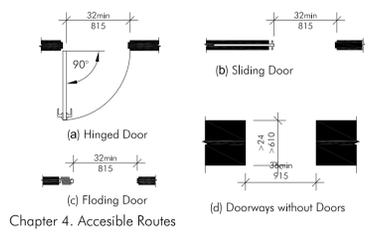
STRUCTURAL CONSULTANT:

WEXLER ASSOCIATES  
12 W 32ND STREET #10 | NEW YORK, NY 10001  
TEL: 212.643.1500 | FAX: 212.643.2277

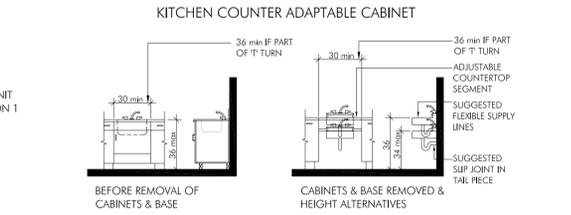
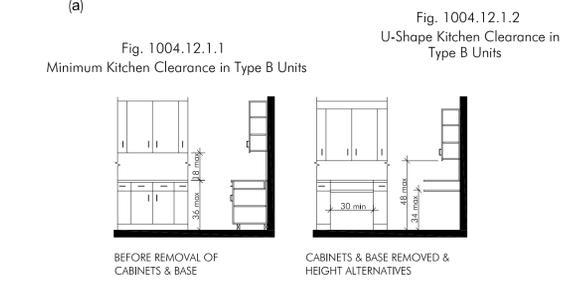
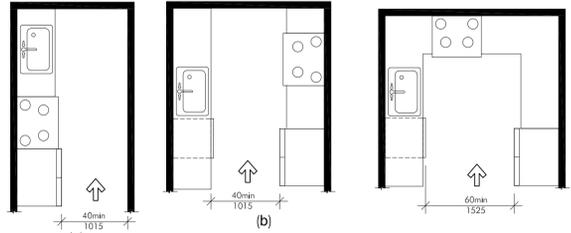
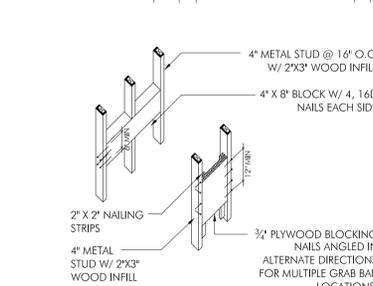
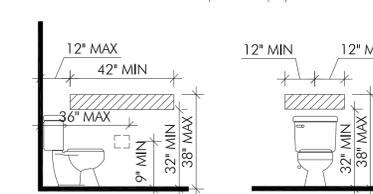
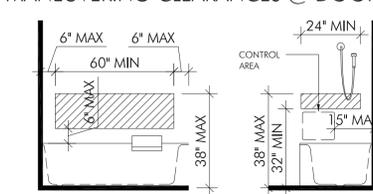
MEP CONSULTANT:

NO.:	REVISION:	DATE:
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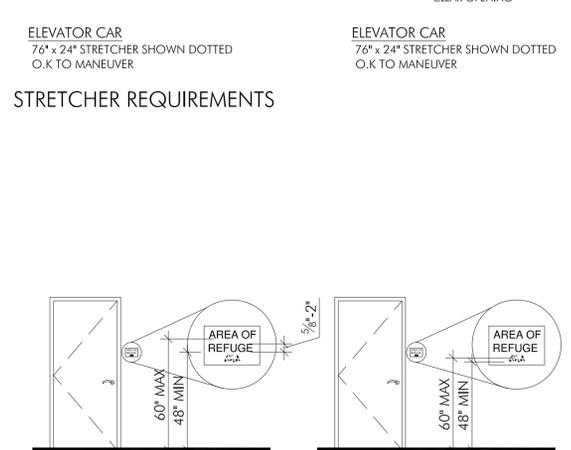
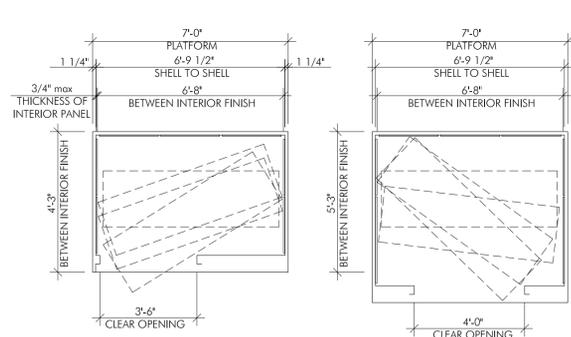
# ADA COMPLIANCE PER ICC/ANSI A117.1-2003



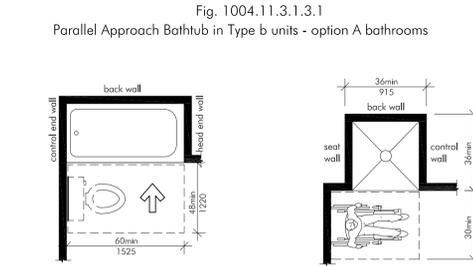
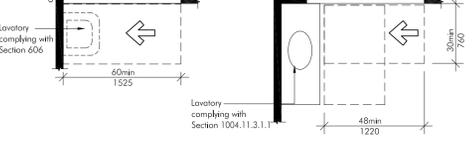
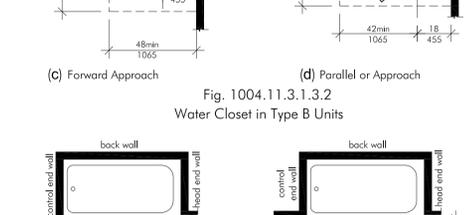
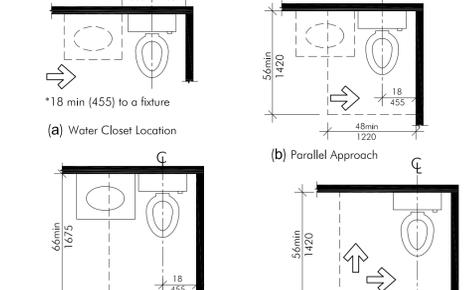
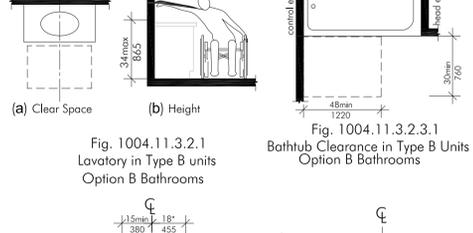
## MANEUVERING CLEARANCES @ DOORS



## TYPE 'B' UNITS - KITCHENS



703.1 General. Accessible signs shall comply with Section 703. Tactile signs shall contain both raised characters and braille. Where signs with both visual and raised characters are required, either one sign with both visual and raised characters, or two separate signs, one with visual, and one with raised characters, shall be provided.



## MANEUVERING CLEARANCES @ DOORS



## 2008 NEW YORK CITY BUILDING CODE CHAPTER 11: ACCESSIBILITY

### SECTION BC 1101: GENERAL

1101.1 Scope. The provisions of this chapter and Appendices E, N and P shall control the design and construction of facilities for accessibility to persons with physical disabilities.

1101.2 Design. Buildings and facilities shall be designed and constructed to be accessible in accordance with this code and ICC A 117.1 (Accessible and Usable Buildings and Facilities).

### SECTION BC 1102: DEFINITIONS

DWELLING UNIT (ACCESSIBILITY). For the purposes of Chapter 11 and applicable appendices: A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

DWELLING UNIT OR SLEEPING UNIT, TYPE B. A dwelling unit or sleeping unit designed and constructed for accessibility in accordance with this code, Section 1004 (Type B Units) of ICC A117.1 where applicable, and Appendix P of this code where applicable, consistent with or exceeding the design and construction requirements of the federal Fair Housing Act.

### SECTION BC 1103: SCOPING REQUIREMENTS

1103.1 Where required. Buildings and structures, temporary or permanent, including their associated sites and facilities, shall be accessible to persons with physical disabilities.

1103.2 General exceptions. Sites, buildings, facilities and elements shall be exempt from this chapter to the extent specified in this section.

1103.2.1 Specific requirements. Accessibility is not required in buildings and facilities, or portions thereof, to the extent permitted by Sections 1104 through 1110.

1103.2.2 Existing buildings. Existing buildings shall comply with Section 28-101.4 of the Administrative Code.

### SECTION BC 1104: ACCESSIBLE ROUTE

1104.1 Site arrival points. Accessible routes within the site shall be provided from public transportation stops, accessible parking and accessible passenger loading zones, and public streets or sidewalks to the accessible building entrance served.

1104.2 Within a site. At least one accessible route shall connect accessible buildings, accessible facilities, accessible elements and accessible spaces that are on the same site and shall comply with Section 1104.5.

1104.3 Connected spaces. When a building, or portion of a building, is required to be accessible, an accessible route shall be provided to each portion of the building, to accessible building entrances connecting accessible pedestrian walkways and the public way. Where only one accessible route is provided, the accessible route shall not pass through kitchens, storage rooms, restrooms, closets or similar spaces.

### SECTION BC 1105: ACCESSIBLE ENTRANCES

1105.1 Public entrances. In addition to accessible entrances required by Sections 1105.1.1 through 1105.1.6, all public entrances shall be accessible.

1105.1.1 Parking garage entrances. Where provided, direct access for pedestrians from parking structures to buildings or facility entrances shall be accessible.

1105.1.6 Tenant spaces. All entrances to tenant spaces that are required to be accessible shall be accessible entrances.

1105.1.6.1 Dwelling units and sleeping units. Doors and doorways at entrances to Accessible units, including hardware, shall comply with Section 404 (Doors and doorways) of ICC A 117.1. Doors and doorways, including hardware, at entrances to Type B units shall comply with Section 1003.5 (Doors and doorways) of ICC A 117.1.

### SECTION BC 1106: PARKING AND PASSENGER LOADING FACILITIES

1106.2 Groups R-2 and R-3. Where parking is provided for occupancies in Groups R-2 and R-3, which are required to have Accessible or Type B dwelling or sleeping units, the number of accessible parking spaces shall be in compliance with Section 1106.1 and such number of accessible parking spaces shall be dispersed in accordance with Section 1106.6. Where parking is provided within or beneath a building, accessible parking spaces shall also be provided within or beneath the building.

### SECTION BC 1107: DWELLING UNITS AND SLEEPING UNITS

1107.1 General. In addition to the other requirements of this chapter, occupancies having dwelling units or sleeping units shall be provided with accessible features in accordance with this section.

1107.2 Design. Dwelling units and sleeping units which are required to be Accessible units or Type B units shall comply with this code including Appendix P where applicable, and the applicable provisions of Chapter 10 of ICC A117.1. In addition, Type B units in R-2 occupancies shall comply with Sections 1107.2.1 through 1107.2.6. Units required to be Type B units are permitted to be designed and constructed as Accessible units.

1107.2.1 Type B unit doors and doorways in R-2 occupancy. Doors and doorways of the entrance(s) to the dwelling or sleeping unit shall comply with Section 1105.1.6. All other doors and doorways within the dwelling or sleeping unit meant for human passage shall comply with Section 1003.5 (Doors and Doorways) of ICC A117.1. In addition, doors and doorways serving toilet and bathing facilities that are required to comply with Appendix P shall also comply with Section P102.3.

Exceptions:

1. Maneuvering clearance at doors. Where pull side, latch approach maneuvering clearance is required within the dwelling or sleeping unit for a door without a closer as per Figure 404.2.3.1(f) of ICC A 117.1, the minimum maneuvering clearance perpendicular to the doorway shall be permitted to be reduced to 42 inches (1067 mm).
2. Future reversibility for bedroom doors. Bedroom doors and frames shall be permitted to be provided with mortised hinge and latch blanks to permit future reversal of the door on the same frame using common hand tools and without further alterations to the door and frame, provided such future swing of the door will not obstruct the maneuvering clearances required at the door or doorway.

1107.2.2 Type B unit toilet and bathing facilities in R-2 occupancy. Where toilet and bathing facilities are provided in the dwelling unit or sleeping unit, all such toilet and bathing facilities shall comply with Appendix P.

1107.2.3 Type B unit kitchen and kitchenette in R-2 occupancy. Where kitchens and kitchenettes are provided in the dwelling unit or sleeping unit, the primary kitchen or kitchenette shall be constructed in accordance with the kitchen requirements of Section 1003.12 (Kitchen) of ICC A117.1 and Sections 1107.2.3.1 through 1107.2.3.4. Secondary kitchens and kitchenettes within the same dwelling unit or sleeping unit shall be required to comply only with Section 1004.12 (Kitchens) of ICC A117.1.

1107.2.3.4 Kitchen and kitchenette storage. Kitchen storage, kitchen cabinets, drawers, and shelf storage areas, within kitchen and kitchenettes that are required to comply with Section 1003.12 of ICC A117.1 pursuant to Section 1107.2.3, except overhead cabinets, shall comply with Section 905 (Storage Facilities) of ICC A117.1. In addition, at least one storage shelf or cabinet, mounted above work counters at 48 inches (1219 mm) maximum above the floor, shall be provided.

1107.3 Accessible spaces. Rooms and spaces available to the general public or available for use by residents of Accessible units or Type B units shall be accessible. Accessible spaces shall include, but not be limited to, spaces for residents' use, such as laundry rooms, refuse disposal and storage locations, mailbox areas, recreational facilities, assembly and tenants' meeting rooms, storage rooms, parking areas, toilet and bathing rooms, kitchen, living and dining areas, any exterior spaces, including patios, terraces and balconies, management offices, and stores.

1107.4 Accessible route. At least one accessible route shall connect accessible building or facility entrances with the required accessible entrance(s) of each Accessible unit and Type B unit within the building or facility and with those exterior and interior spaces and facilities that serve the units.

1107.6 Group R. Occupancies in Group R shall be provided with accessible features in accordance with Sections 1107.6.1 through 1107.6.3.

1107.6.1.2 Type B units. In structures with four or more dwelling or sleeping units intended to be occupied as a residence, every dwelling and sleeping unit intended to be occupied as a residence shall be a Type B unit.

1107.6.1.4 Boarding houses, dormitories, fraternity houses and sorority houses. Accessible units and Type B dwelling units and sleeping units shall be provided in boarding houses, dormitories, fraternity houses and sorority houses in accordance with Sections 1107.6.1.4.1 and 1107.6.1.4.2.

1107.6.2 Group R2. Accessible units and Type B units shall be provided in occupancies in Group R-2 in accordance with Section 1107.6.2.1.

1107.6.2.1 Apartment houses, monasteries and convents. Type B units shall be provided in apartment houses, monasteries and convents in accordance with Section 1107.6.2.1.1.

1107.6.2.1.1 Type B units. Every dwelling unit and sleeping unit, regardless of intent to occupy such unit as a residence, shall be a Type B unit and shall comply with Section 1107.2, and Sections 1107.2.1 through 1107.2.8.

1107.7 General exceptions. Where specifically permitted by Section 1107.6, the required number of Type B units is permitted to be reduced in accordance with Sections 1107.7.1 through 1107.7.3.

1107.7.1 Buildings without elevator service. Where no elevator service is provided in a building, only the dwelling and sleeping units that are located on stories indicated in Sections 1107.7.1.1 and 1107.7.1.2 are required to be Type B units.

1107.7.3 Elevator service to the lowest story with units. Where elevator service in the building is provided for the sole purpose of complying with the provisions of Section 1107.7.1.1 to serve as an accessible route only to the lowest story containing dwelling or sleeping units intended to be occupied as a residence, only the units intended to be occupied as a residence on the lowest story served by the elevator are required to be Type B units.

### SECTION BC 1109: OTHER FEATURES AND FACILITIES

1109.1 General. Accessible building features and facilities shall be provided in accordance with 1109.2 through 1109.15.

Exception: Type B dwelling and sleeping units shall comply with Section 1107 and ICC A117.1.

1109.2 Toilet and bathing facilities. Toilet rooms and bathing facilities shall be accessible. Where a floor level is not required to be connected by an accessible route, the only toilet rooms or bathing facilities provided within the facility shall not be located on the accessible floor. At least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing facility shall be accessible.

1109.4 Kitchens, kitchenettes and wet bars. Where kitchen, kitchenettes and wet bars not located within dwelling or sleeping units, are provided in accessible spaces or rooms, they shall be accessible in accordance with ICC A117.1 including Section 804 (Kitchens and Kitchenettes).

1109.5 Drinking fountains. On floors where drinking fountains are provided, at least 50 percent, but not less than one fountain, shall be accessible.

1109.6 Elevators. Passenger elevators on an accessible route shall be accessible and comply with 3001.3.

1109.13 Controls, operating mechanisms and hardware. Controls, operating mechanisms and hardware intended for operation by the occupant, including switches that control lighting and ventilation, and electrical convenience outlets, in accessible spaces, along accessible routes or as parts of accessible elements shall be accessible.

1109.14 Recreational facilities. Recreational facilities shall y be accessible.

### SECTION BC 1110: SIGNAGE

1110.1 Signs. Required accessible elements shall be identified by the International Symbol of Accessibility at the following locations: (See BC 1110.1 for list).

1110.2 Directional signage. Directional signage indicating the route to the nearest like accessible element shall be provided at the following locations. These directional signs shall include the International Symbol of Accessibility: (See BC 1110.2 for list).

1110.3 Other signs. Signage indicating special accessibility provisions shall be provided as follows: (See BC 1110.3 for list).

167-168 3RD AVENUE LLC

PROJECT TITLE:  
3475 3RD AVENUE

KEY PLAN:



OWNER:  
167-168 3RD AVENUE LLC  
P.O. BOX 234550 | GREAT NECK, NY 11023

STRUCTURAL CONSULTANT:  
WEXLER ASSOCIATES  
12 W 32ND STREET #10 | NEW YORK, NY 10001  
TEL: 212.643.1500 | FAX: 212.643.2277

MEP CONSULTANT:

NO.	REVISION:	DATE:
1		
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7		
8		
9		
10		

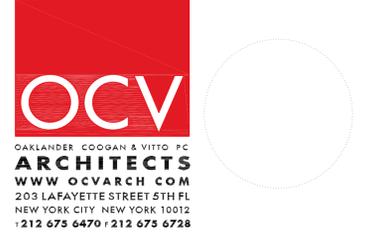
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3475 3RD AVENUE  
BRONX, NY 10456

DRAWING TITLE:

ADA NOTES

ARCHITECT: SEAL & SIGNATURE:



DRAWING #:

A-003.00

BIS #:

DATE: 10/09/14  
JOB #: 14J17  
DRAWN BY: LP-SP

SCALE INDICATOR  
MEASURES 1"=10'  
PLOT SCALE IS 1:1

04 OF 13





# 167-168 THIRD AVE. LLC

PROJECT TITLE:  
3475 THIRD AVENUE

OWNER:  
167-168 THIRD AVE. LLC  
PO BOX 234550, GREAT NECK, NY 11023

MEP CONSULTANT:

STRUCTURAL CONSULTANT:  
WEXLER ASSOCIATES  
12 W 32ND STREET # 10, NEW YORK, NY 10001  
TEL | 212.643.1500 FAX | 212.643.2277

NO.	REVISION	DATE

ADDRESS:  
3475 THIRD AVENUE  
BRONX, NY 10456

DRAWING TITLE:  
GROUND FLOOR PLAN

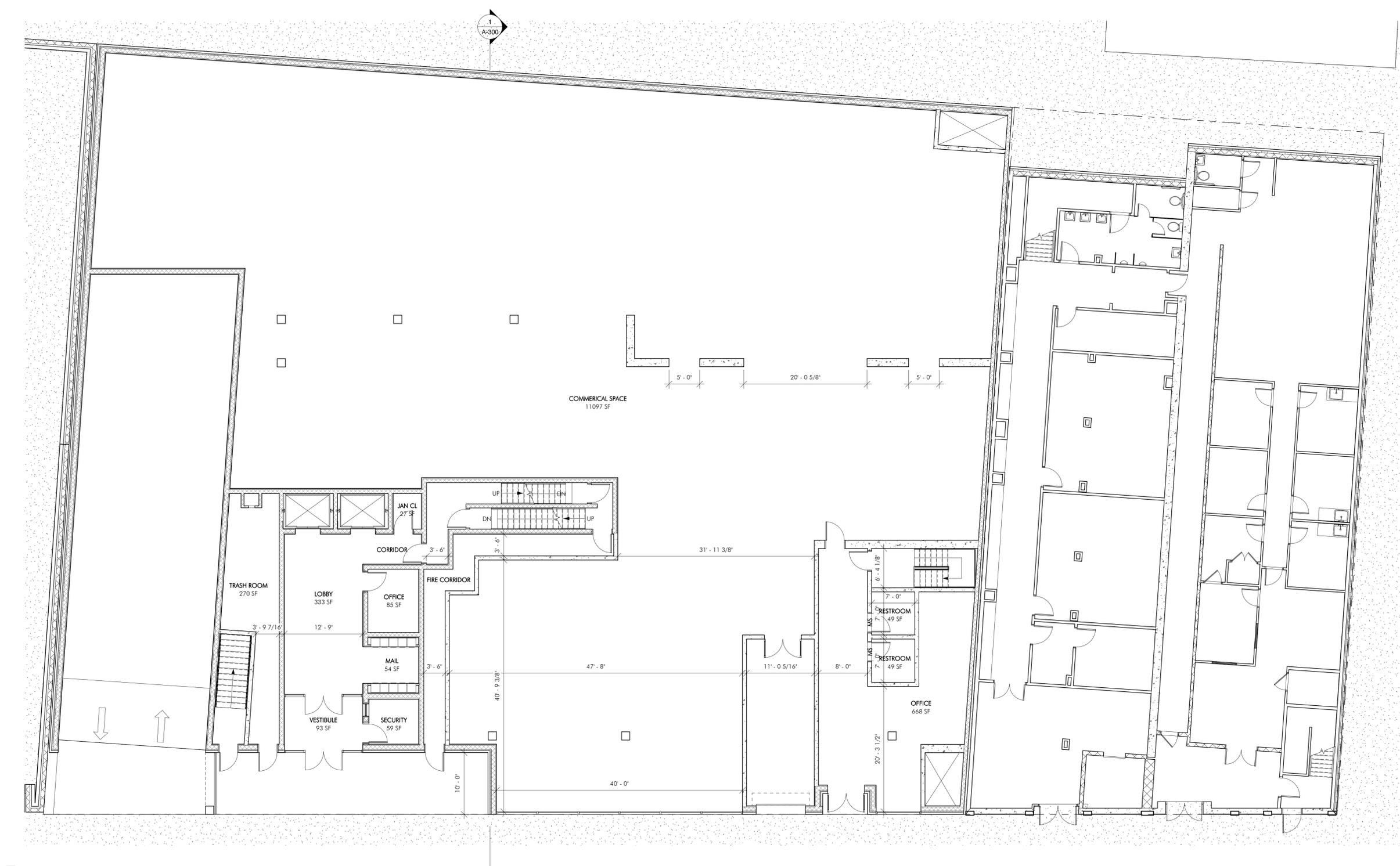
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DRAWING #: DATE:  
A-111 10/6/14

JOB #: DRAWN BY:  
14J17 LP, SP

BIS #: SCALE INDICATOR MEASURES  
1"=10'-0" SCALE IS 1/4"=1'-0"  
07 OF 13



FIRST FLOOR PLAN 1/8" = 1'-0"



PROJECT TITLE:  
3475 THIRD AVENUE

OWNER:  
167-168 THIRD AVE. LLC  
PO BOX 234550, GREAT NECK, NY 11023

MEP CONSULTANT:

STRUCTURAL CONSULTANT:  
WEXLER ASSOCIATES  
12 W 32ND STREET # 10, NEW YORK, NY 10001  
TEL | 212.643.1500 FAX | 212.643.2277

NO.	REVISION	DATE

ADDRESS:  
3475 THIRD AVENUE  
BRONX, NY 10456

DRAWING TITLE:  
3RD - 5TH FLOOR PLANS

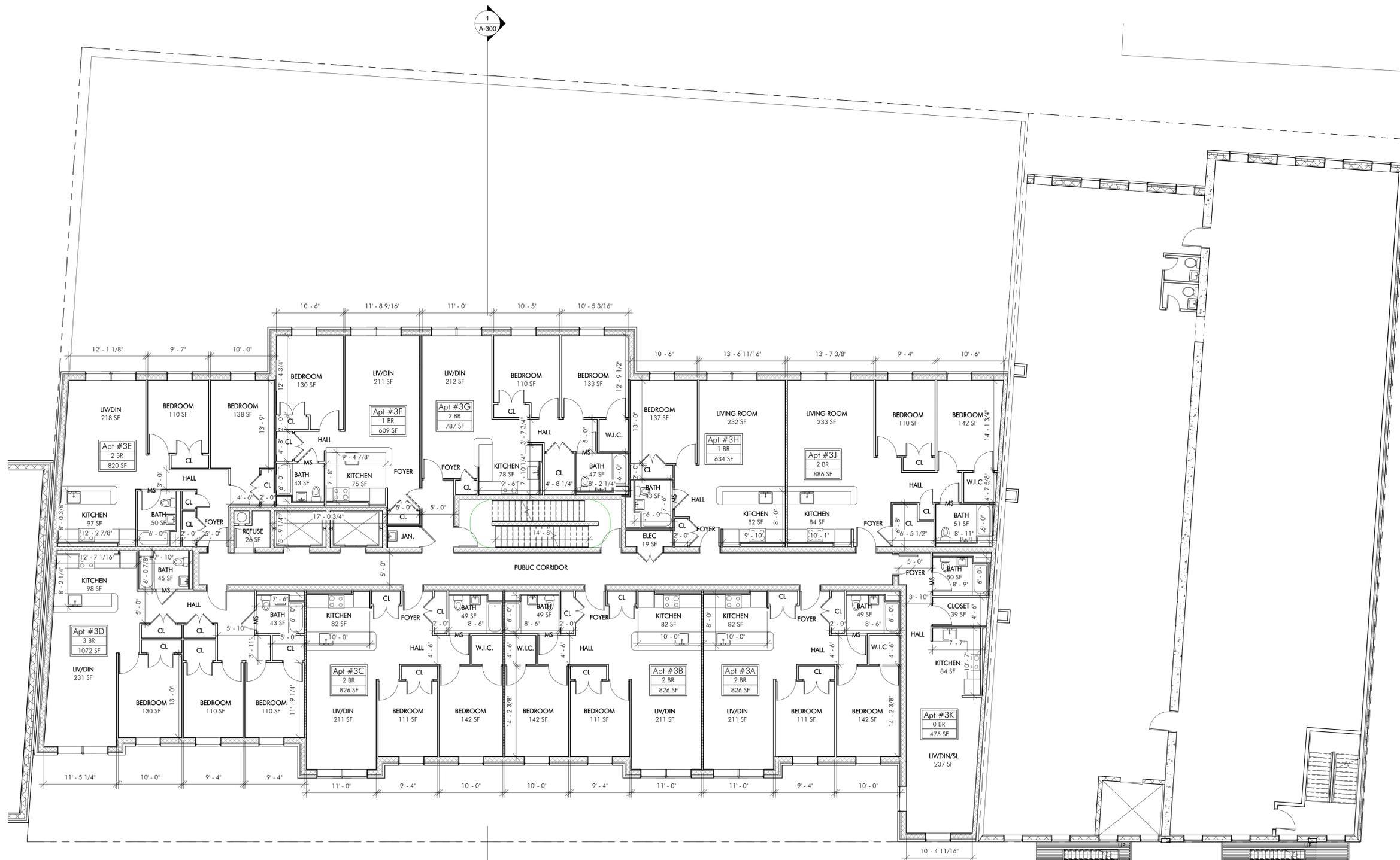
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**OCV**  
OAKLANDER, COOGAN & VITTO, PC  
**ARCHITECTS**  
WWW.OCVARCH.COM  
203 LAFAYETTE STREET 5TH FL  
NEW YORK CITY, NEW YORK 10012  
212.675.6470 • 212.675.6728

DRAWING #: **A-113** DATE: 10/6/14  
JOB #: 14J17  
DRAWN BY: LP, SP

BIS #:  
SCALE INDICATOR MEASURES 1" WHEN PLOTT SCALE IS 1:1  
09 OF 13



1 Level 3 1/8" = 1'-0"

10/9/2014 1:11:12 PM











Ecosystems Strategies, Inc.

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## **APPENDIX D**

### ***Citizen Participation Plan***

## APPENDIX D

### CITIZEN PARTICIPATION PLAN

The NYC Office of Environmental Remediation and Kingspoint Heights LLC have established this Citizen Participation Plan because the opportunity for citizen participation is an important component of the NYC Voluntary Cleanup Program. This Citizen Participation Plan describes how information about the project will be disseminated to the Community during the remedial process. As part of its obligations under the NYC VCP, Kingspoint Heights LLC will maintain a repository for project documents and provide public notice at specified times throughout the remedial program. This Plan also takes into account potential environmental justice concerns in the community that surrounds the project Site. Under this Citizen Participation Plan, project documents and work plans are made available to the public in a timely manner. Public comment on work plans is strongly encouraged during public comment periods. Work plans are not approved by the NYC Office of Environmental Remediation (OER) until public comment periods have expired and all comments are formally reviewed. An explanation of cleanup plans in the form of a public meeting or informational session is available upon request to OER's project manager assigned to this Site, Horace Zhang, who can be contacted about these issues or any others questions, comments or concerns that arise during the remedial process at (212) 788-8841.

**Project Contact List:** OER has established a Site Contact List for this project to provide public notices in the form of fact sheets to interested members of the Community.

Communications will include updates on important information relating to the progress of the cleanup program at the Site as well as to request public comments on the cleanup plan. The Project Contact List includes owners and occupants of adjacent buildings and homes, principal administrators of nearby schools, hospitals and day care centers, the public water supplier that serves the area, established document repositories, the representative Community Board, City Council members, other elected representatives and any local Brownfield Opportunity Area

(BOA) grantee organizations. Any member of the public or organization will be added to the Site Contact List on request. A copy of the Site Contact List is maintained by OER's project manager. If you would like to be added to the Project Contact List, contact NYC OER at (212) 788-8841 or by email at [brownfields@cityhall.nyc.gov](mailto:brownfields@cityhall.nyc.gov).

**Repositories:** A document repository is maintained online. Internet access to view OER's document repositories is available at public libraries. This document repository is intended to house, for community review, all principal documents generated during the cleanup program including Remedial Investigation plans and reports, Remedial Action work plans and reports, and all public notices and fact sheets produced during the lifetime of the remedial project. The library nearest the Site is:

Morrisania Public Library

610 East 169th Street

Bronx, NY, 10456

(718) 589-9268

Sun Closed

Mon 10:00am - 6:00pm

Tue 11:00am - 7:00pm

Wed 10:00am - 6:00pm

Thu 11:00am - 7:00pm

Fri 10:00am - 5:00pm

Sat 10:00am - 5:00pm

**Digital Documentation:** NYC OER requires the use of digital documents in our repository as a means of minimizing paper use while also increasing convenience in access and ease of use.

**Issues of Public Concern:** Kingspoint Heights LLC is required to identify whether there are specific issues of concern to stakeholders proximate to the project site. Such issues include but are not limited to interests of Environmental Justice communities. No issues of public concern have been identified.

**Public Notice and Public Comment:** Public notice to all members of the Project Contact List is required at three major steps during the performance of the cleanup program (listed below) and at other points that may be required by OER. Notices will include Fact Sheets with descriptive project summaries, updates on recent and upcoming project activities, repository information, and important phone and email contact information. All notices will be reviewed and approved by OER prior to distribution and mailed by the Enrollee. Public comment is solicited in public notices for all work plans developed under the NYC Voluntary Cleanup Program. Final review of all work plans by OER will consider all public comments. Approval will not be granted until the public comment period has been completed.

**Citizen Participation Milestones:** Public notice and public comment activities occur at several steps during a typical NYC VCP project. These steps include:

- **Public Notice of the availability of the Remedial Investigation Report and Remedial Action Work Plan and a 30-day public comment period on the Remedial Action Work Plan:** Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the availability of the Remedial Investigation Report and Remedial Action Work Plan and the initiation of a 30-day public comment period on the Remedial Action Work Plan. The Fact Sheet summarizes the findings of the RIR and provides details of the RAWP. The public comment period will be extended an additional 15 days upon public request. A public meeting or informational session will be conducted by OER upon request.
- **Public Notice announcing the approval of the RAWP and the start of remediation:** Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the approval of the RAWP and the start of remediation.
- **Public Notice announcing the completion of remediation, designation of Institutional and Engineering Controls and issuance of the Notice of Completion:** Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the completion of remediation, providing a list of all Institutional and Engineering Controls implemented for to the Site and announcing the issuance of the Notice of Completion.



Ecosystems Strategies, Inc.

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## **APPENDIX E**

### ***Sustainability Statement***

## APPENDIX E

### SUSTAINABILITY STATEMENT

This Sustainability Statement documents sustainable activities and green remediation efforts planned under this remedial action.

#### **Reuse of Clean, Recyclable Materials and Reduced Consumption of Non-**

**Renewable Resources:** Reuse of clean, locally-derived recyclable materials reduces consumption of non-renewable virgin resources and can provide energy savings and greenhouse gas reduction. To the extent feasible, concrete aggregate, stone and masonry derived from the Site, or imported from local sources, will be used as backfill for remedial excavations. An estimate of the quantity (in tons) of clean, non-virgin materials (reported by type of material) reused under this plan will be quantified and reported in the RAR.

#### **Reduced Energy Consumption and Promotion of Greater Energy Efficiency:**

Reduced consumption of virgin and non-renewable resources lowers the overall environmental impact of the project on the region by conserving these resources. The use of concrete aggregate, stone and masonry derived from the Site, or imported from local sources will minimize the use of virgin and non-renewable resources in the selected remedial action and development. An estimate of the quantity (in tons) of virgin and non-renewable resources, the use of which will be avoided under this plan, will be quantified and reported in the RAR.

**Conversion to Clean Fuels:** Use of clean fuel improves NYC's air quality by reducing harmful emissions. Reduced energy consumption lowers greenhouse gas emissions, improves local air quality, lessens in-city power generation requirements, can lower traffic congestion, and provides substantial cost savings. The use of concrete aggregate, stone and masonry derived from the Site, or imported from local sources will minimize energy consumption. Natural gas will be utilized for fuel in the new building.

### **Recontamination Control:**

Recontamination after cleanup and redevelopment is completed undermines the value of work performed, may result in a property that is less protective of public health or the environment, and may necessitate additional cleanup work later or impede future redevelopment.

Recontamination can arise from future releases that occur within the property or by influx of contamination from off-Site. Recontamination controls for the Site include the installation of building foundations (and cover soils as needed) and building vapor barriers, which will prevent movement of any residual contaminated soils. An estimate of the area of the Site that utilizes recontamination controls under this plan will be reported in the RAR in square feet.

**Stormwater Retention:** Stormwater retention improves water quality by lowering the rate of combined stormwater and sewer discharges to NYC's sewage treatment plants during periods of precipitation, and reduces the volume of untreated influent to local surface waters.

**Linkage with Green Building:** Green buildings provide a multitude of benefits to the city across a broad range of areas, such as reduction of energy consumption, conservation of resources, and reduction in toxic materials use. The project will emphasize sustainability and be designed to meet the Enterprise Green Communities criteria. The sustainable features will include:

- High-efficiency boilers and domestic hot water heating systems
- Cogen system, which burns gas and produces electricity for the public spaces and elevators; developed heat from this system will be used to aid with the heating of the domestic hot water.
- Efficient plumbing fixtures
- EnergyStar appliances, light fixtures, and equipment
- Florescent lighting in public areas and occupancy sensors in stairways
- Windows will have trickle vents

- High-performance building envelope – well-insulated roof and masonry cavity wall, low-E double glazing, thermally broken window frames

The number of Green Buildings that are associated with this brownfield redevelopment property will be reported in the RAR. The total square footage of green building space created as a function of this brownfield redevelopment will be quantified for residential, commercial and industrial/manufacturing uses.

**Paperless Voluntary Cleanup Program:** Kingspoint Heights LLC is participating in OER's Paperless Voluntary Cleanup Program. Under this program, submission of electronic documents will replace submission of hard copies for the review of project documents, communications and milestone reports.

**Low-Energy Project Management Program:** Kingspoint Heights LLC is participating in OER's low-energy project management program. Under this program, whenever possible, meetings are held using remote communication technologies, such as videoconferencing and teleconferencing to reduce energy consumption and traffic congestion associated with personal transportation.

**Trees and Plantings:** Trees and other plantings provide habitat and add to NYC's environmental quality in a wide variety of ways. Native plant species and native habitat provide optimal support to local fauna, promote local biodiversity, and require less maintenance. No landscaped areas are included in the project. Three trees will be planted in the Third Avenue sidewalk.



**APPENDIX F**

***Soil/Materials Management Plan***

## **APPENDIX F**

### **SOIL/MATERIALS MANAGEMENT PLAN**

#### **1.1 Soil Screening Methods**

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a Qualified Environmental Professional and will be reported in the final remedial report. Soil screening will be performed during invasive work performed during the remedy and development phases prior to issuance of final signoff by OER.

#### **1.2 Stockpile Methods**

Excavated soil from suspected areas of contamination (e.g., hotspots, 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. While stockpiles are in place, they will be inspected daily, and before and after every storm event.

Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. Excavated soils will be stockpiled on, at minimum, double layers of 8-mil minimum sheeting, will be kept covered at all times with appropriately anchored plastic tarps, and will be routinely inspected. Broken or ripped tarps will be promptly replaced.

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. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible. Hay bales or equivalent will surround soil stockpiles except for areas where access by equipment is required. Silt fencing and hay bales will be used as needed near catch basins, surface waters and other discharge points.

#### **1.3 Characterization of Excavated Materials**

Soil/fill or other excavated media that is transported off-Site for disposal will be sampled in a manner required by the receiving facility, and in compliance with applicable laws and regulations. Soils proposed for reuse on-Site will be managed as defined in this plan.

## **1.4 Materials Excavation, Load-Out, and Departure**

The PE/QEP overseeing the remedial action will:

- oversee remedial work and the excavation and load-out of excavated material;
- ensure that there is a party responsible for the safe execution of invasive and other work performed under this work plan;
- ensure that Site development activities and development-related grading cuts will not interfere with, or otherwise impair or compromise the remedial activities proposed in this RAWP;
- ensure that the presence of utilities and easements on the Site has been investigated and that any identified risks from work proposed under this plan are properly addressed by appropriate parties;
- ensure that all loaded outbound trucks are inspected and cleaned if necessary before leaving the Site;
- ensure that all egress points for truck and equipment transport from the Site will be kept clean of Site-derived materials during Site remediation.

Locations where vehicles exit the Site shall be inspected daily for evidence of soil tracking off premises. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

Open and uncontrolled mechanical processing of historical fill and contaminated soil on-Site will not be performed without prior OER approval.

## **1.5 Off-Site Materials Transport**

Loaded vehicles leaving the Site will comply with all applicable materials transportation requirements (including appropriate covering, manifests, and placards) in accordance with applicable laws and regulations, including use of licensed haulers in accordance with 6 NYCRR Part 364. If loads contain wet material capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-Site, when possible in order to minimize off Site disturbance. Off-Site queuing will be minimized.

Outbound truck transport routes are described in the remedial report. This routing takes into account the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) minimizing 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. To the extent possible, all trucks loaded with Site materials will travel from the Site using these truck routes. Trucks will not stop or idle in the neighborhood after leaving the project Site.

## **1.6 Materials Disposal Off-Site**

The following documentation will be established and reported by the PE/QEP for each disposal destination used in this project to document that the disposal of regulated material exported from the Site conforms with applicable laws and regulations: (1) a letter from the PE/QEP or Enrollee to each disposal facility describing the material to be disposed and requesting written acceptance of the material. This letter will state that material to be disposed is regulated material generated at an environmental remediation Site in New York City under a governmental remediation program. The letter will provide the project identity and the name and phone number of the PE/QEP or Enrollee. The letter will include as an attachment a summary of all chemical data for the material being transported; and (2) a letter from each disposal facility stating it is in receipt of the correspondence (1, above) and is approved to accept the material. These documents will be included in the final remedial report.

The Remedial Action Report will include an itemized account of the destination of all material removed from the Site during this remedial action. Documentation associated with disposal of all material will include records and approvals for receipt of the material. This information will be presented in the final remedial report.

All impacted soil/fill or other waste excavated and removed from the Site will be managed as regulated material and will be disposed in accordance with applicable laws and regulations. Historic fill and contaminated soils taken off-Site will be handled as solid waste and will not be disposed at a Part 360-16 Registration Facility (also known as a Soil Recycling Facility). Waste characterization will be performed for off-Site disposal in a manner required by the receiving facility and in conformance with its applicable permits. Waste characterization

sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the final remedial report. A manifest system for off-Site transportation of exported materials will be employed. Manifest information will be reported in the final remedial report. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e., clean soil removed for development purposes), including transport to a Part 360-16 Registration Facility, a formal request will be made for approval by OER with an associated plan compliant with 6NYCRR Part 360-16. This request and plan will include the location, volume and a description of the material to be recycled, including verification that the material is not impacted by site uses and that the material complies with receipt requirements for recycling under 6NYCRR Part 360. This material will be appropriately handled on-Site to prevent mixing with impacted material.

### **1.7 Materials Reuse On-Site**

Soil and fill that is derived from the property that meets the Soil Cleanup Objectives (SCOs) established in this plan may be reused on-Site. The SCOs for on-Site reuse are listed in Section 4.2 of this cleanup plan. '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 land with comparable levels of contaminants in soil/fill material, compliant with applicable laws and regulations, and addressed pursuant to the NYC VCP agreement subject to Engineering and Institutional Controls. The PE/QEP will ensure that reused materials are segregated from other materials to be exported from the Site and that procedures defined for material reuse in this remedial plan are followed. The expected location for placement of reused material is shown in Section 4.2.

Organic matter (wood, roots, stumps, etc.) or other waste derived from clearing and grubbing of the Site will not be buried on-Site. Soil or fill excavated from the site for grading or other purposes will not be reused within a cover soil layer or within landscaping berms.

## **1.8 Demarcation**

After completion of hotspot 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 SMP; 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 RAR.

This demarcation will constitute the top of the site management horizon. Materials within this horizon require adherence to special conditions during future invasive activities as defined in the Site Management Plan.

## **1.9 Import of Backfill Soil From Off-Site Sources**

This Section presents the requirements for imported fill materials to be used below the cover layer and within the clean soil cover layer. All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The backfill and cover soil quality objectives are listed in Section 4.2. Imported soils will not exceed groundwater protection standards established in Part 375. Imported soils for Track 1 remedial action projects will not exceed Track 1 SCO's.

A process will be established to evaluate sources of backfill and cover soil to be imported to the Site, and will include an examination of source location, current and historical use(s), and any applicable documentation. Material from industrial sites, spill sites, environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The following potential sources may be used pending attainment of backfill and cover soil quality objectives:

- Clean soil from construction projects at non-industrial sites in compliance with applicable laws and regulations;
- Clean soil from roadway or other transportation-related projects in compliance with applicable laws and regulations;
- Clean recycled concrete aggregate (RCA) from facilities permitted or registered by the regulations of NYS DEC.
- All materials received for import to the Site will be approved by a PE/QEP and will be in compliance with provisions in this remedial plan. The final remedial report will report the source of the fill, evidence that an inspection was performed on the source, chemical sampling results, frequency of testing, and a Site map indicating the locations where backfill or soil cover was placed.
- All material will be subject to source screening and chemical testing.
- Inspection of imported fill material will include visual, olfactory and PID screening for evidence of contamination. Materials imported to the Site will be subject to inspection, as follows:
  - Trucks with imported fill material will be in compliance with applicable laws and regulations and will enter the Site at designated locations;
  - The PE/QEP is responsible to ensure that every truck load of imported material is inspected for evidence of contamination; and
  - Fill material will be free of solid waste including pavement materials, debris, stumps, roots, and other organic matter, as well as ashes, oil, perishables or foreign matter.

Composite samples of imported material will be taken at a minimum frequency of one sample for every 500 cubic yards of material. Once it is determined that the fill material meets imported backfill or cover soil chemical requirements and is non-hazardous, and lacks petroleum contamination, the material will be loaded onto trucks for delivery to the Site.

Recycled concrete aggregate (RCA) will be imported from facilities permitted or registered by NYSDEC. Facilities will be identified in the final remedial report. A PE/QEP is responsible to ensure that the facility is compliant with 6NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will

not require additional testing, unless required by NYSDEC under its terms for operation of the facility. RCA imported to the Site must be derived from recognizable and uncontaminated concrete. RCA material is not acceptable for, and will not be used as cover material.

### **1.10 Fluids Management**

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable laws and regulations. Liquids discharged into the New York City sewer system will receive prior approval by New York City Department of Environmental Protection (NYC DEP). The NYC DEP regulates discharges to the New York City sewers under Title 15, Rules of the City of New York Chapter 19. Discharge to the New York City sewer system will require an authorization and sampling data demonstrating that the groundwater meets the City's discharge criteria. The dewatering fluid will be pretreated as necessary to meet the NYC DEP discharge criteria. If discharge to the City sewer system is not appropriate, the dewatering fluids will be managed by transportation and disposal at an off-Site treatment facility.

Discharge of water generated during remedial construction to surface waters (i.e. a stream or river) is prohibited without a SPDES permit issued by New York State Department of Environmental Conservation.

### **1.11 Stormwater Pollution Prevention**

Applicable laws and regulations pertaining to stormwater pollution prevention will be addressed during the remedial program. Erosion and sediment control measures identified in this remedial plan (silt fences and barriers, and hay bale checks) will be installed around the entire perimeter of the remedial construction area and inspected once a week and after every storm event to ensure that they are operating appropriately. Discharge locations will be inspected to determine whether erosion control measures are effective in preventing significant impacts to receptors. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. All necessary repairs shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. Undercutting or erosion of the silt fence toe anchor will be repaired immediately with appropriate backfill

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

## **1.12 Contingency Plan for Unknown Contamination Sources**

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 OER's Project Manager. Petroleum spills will be reported to the NYS DEC 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 OER. Chemical analytical testing will be performed for TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs, as appropriate.

## **1.13 Odor, Dust, and Nuisance Control**

### **Odor Control**

All necessary means will be employed to prevent on- and off-Site odor 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) use of foams to cover exposed odorous soils. If odors develop and cannot otherwise be controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; and (e) use of chemical odorants in spray or misting systems.

This odor control plan is capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. OER will be notified of all odor complaint events. Implementation of all odor controls, including halt of work, will be the responsibility of the PE/QEP's certifying this remedial plan.

## **Dust Control**

Dust management during invasive on-Site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles.
- Use of properly anchored tarps to cover stockpiles.
- Exercise extra care during dry and high-wind periods.
- Use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface.

This dust control plan is capable of controlling emissions of dust. If nuisance dust emissions are identified, work will be halted and the source of dusts will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. OER will be notified of all dust complaint events. Implementation of all dust controls, including halt of work, will be the responsibility of the PE/QEP's responsible for certifying this remedial plan.

## **Other Nuisances**

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards.

Rodent control will be provided during Site clearing and grubbing and during the remedial program, as necessary, to prevent nuisances.



Ecosystems Strategies, Inc.

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## **APPENDIX G**

### ***Construction Health and Safety Plan***

**CONSTRUCTION HEALTH AND SAFETY PLAN**

**FOR**

**SITE REMEDIATION ACTIVITIES**

**3475 Third Avenue  
Borough of Bronx  
New York City, New York**

**April 2015**

**ESI File: KB15012.40**

**Prepared By**



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## **1.0 INTRODUCTION**

### **1.1 Purpose**

This Construction Health and Safety Plan (CHASP) has been developed to provide the requirements and general procedures to be followed by Ecosystems Strategies, Inc. (ESI) and designated subcontractors while performing remedial construction activities (e.g. excavation of urban fill soils) at the site located at 3475 Third Avenue in the Morrisania section of Bronx, New York. A Site Location Map and a Site Excavation Map are attached to this CHASP.

This CHASP describes the responsibilities, training requirements, protective equipment, and standard operating procedures to be utilized by all personnel involved in Site remediation activities. This document is designed to supplement the General Contractor's overall Health and Safety Plan for construction activities and is specifically prepared to address potential impacts associated with known on-site environmental contamination. This CHASP incorporates by reference the applicable Occupational Safety and Health Administration (OSHA) requirements in 29 CFR 1910 and 29 CFR 1926. This CHASP incorporates policies, guidelines, and procedures that have the objective of protecting the health of on-site workers and the surrounding area community during the performance of fieldwork activities by establishing guidelines to minimize exposure to hazards during fieldwork, and by planning for and responding to emergencies.

The requirements and guidelines in this CHASP are based on a review of available information and evaluation of potential on-site hazards. This CHASP will be discussed with Site personnel and will be available on-site for review while work is underway. On-site personnel will report to the Site Safety and Health Officer (SSHO) in matters of health and safety. The on-site project supervisor(s) are responsible for enforcement and implementation of this CHASP.

This CHASP is specifically intended for the conduct of activities within the defined scope of work in specified areas of the Site. Changes in site conditions and future actions that may be conducted at this site may necessitate the modification of the requirements of the CHASP. Although this CHASP can be made available to interested persons for informational purposes, ESI has no responsibility over the interpretations or activities of any other persons or entities other than employees of ESI and designated subcontractors to ESI.

### **1.2 Site Location and Description**

The Site consists of portions of one lot in the Morrisania section of Bronx, New York and is identified as Block 2372 and Lot 32 on the New York City Tax Map. The Site is approximately 17,600-square feet (Lot 32 is 24,728 square feet in total) and is bounded by lots 11, 13, 15 and 18 to the west, which include vacant land, parking and residential uses; to the north are two, five story commercial structures (these buildings are the northern portion of Lot 32); Lot 41 to the south contains a multi-family residential building, and Third Avenue is located to the east. A Site Location Map is provided as an Attachment.



### **1.3 Work Activities**

Environmental investigation activities are detailed in the Remedial Action Plan (RAP) dated April 2015. The specific tasks detailed in the RAP are wholly incorporated by reference into this CHASP. The tasks described in the RAP are proposed to address known and possible environmental conditions at the Site (presence of metals contamination associated with on-site fill materials and two vaulted petroleum bulk storage (PBS) tanks).

The following field tasks will be performed:

- Excavation and removal of urban fill soils; and
- Excavation and removal of two vaulted PBS tanks

A Site Excavation Map is provided as an Attachment.

## **2.0 HEALTH AND SAFETY HAZARDS**

### **2.1 Hazard Overview for On-site Personnel**

Elevated levels of metals likely to be associated with on-site urban fill are present in on-site soils. The documented metal concentrations are typically encountered in urban settings. These substances are present at levels that may present a health risk during soil disturbance and air-quality sampling activities. General precautions, such as air monitoring for dust and the use of gloves during sampling collection, will be sufficient protective actions.

During the installation of the barrier layer the possibility exists for on-site personnel to contact contaminated soils, dust, and vapor. Contact with contaminated substances may present a skin contact, inhalation, and/or ingestion hazard. Additional potential hazards are addressed in Sections 3.0 through 11.0, and below.

PAHs are likely to be associated with the PBS tanks during their removal, although data from soils in the vicinities support the conclusion that a release from the tanks is unlikely. PAHs are compounds that generally occur as complex mixtures and are derived from both natural and non-natural sources, including forest fires, vehicle exhaust, plastics, and building products such as roofing tar and asphalt. They are found throughout the environment in the air, water, and soil. They can occur in the air as vapors or attached to dust particles, in water in a dissolved state or attached to solid particles, or as solids in soil or sediment. The short-term health effects of exposure to PAHs are not well defined. Long-term exposure may lead to the development of cancer. PAHs in Site soils are at levels typically encountered in urban settings but occur at concentrations somewhat above applicable NYSDEC guidance levels.

Elevated levels of metals are known to be present in surface and near surface soils. Metals are compounds that occur naturally in soils and are widespread throughout the man-made environment. Most metals are present in quantities and forms that present minimal health risks. Typical materials that present significant potential risks are chips of lead-based paint, lead dust from deteriorated paint and automobile exhaust, and soil impacted by industrial discharges (e.g., sediment in floor drains). They can occur in the air attached to dust particles (or as vapors in specific circumstances), in water in a dissolved



state or attached to solid particles, or as solids in soil or sediment. Health effects are variable, are generally dose dependent, and occur over both the short term and the long term. Several metals, however, occur at concentrations somewhat above applicable NYSDEC guidance levels.

Routes of exposure for VOCs, PAHs, and metals are potentially through inhalation and ingestion during soil disturbance activities. Proper protective actions include:

- Air monitoring for dust and vapors, where appropriate;
- Use of particulate masks and/or air-purifying respirators (if warranted); and,
- Use of gloves for field technicians handling soil.

## **2.2 Potential Hazards to the Public from Fieldwork Activities**

The potential exists for the public to be exposed to contaminated soils, dust, and vapor, which may present a skin contact, inhalation, and/or ingestion hazard. Additional potential hazards to the public that are associated with fieldwork activities include mechanical/physical hazards, traffic hazards from fieldwork vehicles, and noise impacts associated with operation of mechanical equipment.

Impacts to public health and safety are expected to be limited to hazards that could directly affect on-site visitors and/or trespassers. These effects will be mitigated through site access and control measures (see Section 6.0, below). Specific actions will be taken to protect the public health (presented in Sections 3.0 through 11, below) to minimize any potential off-site impacts from contaminant migration, noise, and traffic hazards.



### **3.0 PERSONAL PROTECTIVE EQUIPMENT**

The levels of protection identified for the services specified in the CHASP represent a best estimate of exposure potential and protective equipment needed for that exposure. Determination of levels was based on data provided by previous studies of the Site and current and past Site usage. The SSHO may recommend revisions to these levels based on an assessment of actual exposures.

The level of protective clothing and equipment selected for this project is Level D. Workers will wear Level D protective clothing including, but not limited to, a hard hat, steel-toed boots, latex gloves (when directly handling soils and/or sampling equipment), and safety goggles (when decontaminating equipment). Personal protective equipment (PPE) will be worn at all times, as designated by this CHASP. The requirement for the use of PPE by official on-site visitors shall be determined by the SSHO. All on-site visitors shall, at a minimum, be required to wear an approved hardhat and be provided with appropriate hearing protection as necessary.

The need for an upgrade in PPE will be determined based upon measurements taken in the breathing zone of the work area using a photo-ionization detector (PID) and a digital dust monitor. As outlined in Section 5.0, below, an upgrade to a higher level of protection will begin when PID readings and/or dust levels above specified limits are measured.

If any equipment fails and/or any employee experiences a failure or other alteration of their protective equipment that may affect its protective ability, that person will immediately leave the work area. The Project Manager and the SSHO will be notified and, after reviewing the situation, determine the effect of the failure on the continuation of on-going operations. If the failure affects the safety of personnel, the work site, or the surrounding environment, personnel will be evacuated until appropriate corrective actions have been taken.

### **4.0 CONTAMINANT CONTROL**

Precautions will be taken during dry weather (e.g., wetting or covering exposed soils) to avoid generating and breathing dust from on-site soils. A PID and a digital dust monitor will be used to monitor potential contaminant levels. Response to the monitoring will be in accordance with the action levels provided in Section 5.0.

### **5.0 MONITORING AND ACTION LEVELS**

Concentrations of hydrocarbons (VOCs/SVOCs) and heavy metals in the air are expected to be below the OSHA Permissible Exposure Limits (PELs). Air monitoring will be conducted for VOCs and dust. Monitoring will be conducted during all investigative and soil disturbance activities during testing and construction related work that are likely to generate emissions. PID readings in excess of 5 ppm, and dust levels in excess of 150  $\mu\text{g}/\text{m}^3$  will be used as an indication of the need to initiate personnel monitoring, increase worker protective measures, and/or modify or cease on-site operations in order to mitigate off-site community exposure.



## **6.0 SITE ACCESS AND CONTROL**

Site control procedures will be established to reduce the possibility of worker/visitor contact with compounds present in the soil, to protect the public in the area surrounding the Site and to limit access to the Site to only those persons required to be in the work zone. Notices will be placed near the Site warning the public not to enter fieldwork areas and directing visitors to report to the Project Manager or SSHO. Measures will be taken to limit the entry of unauthorized personnel into the specific areas of field activity and to safely direct and control all vehicular traffic in and near the Site (e.g., placement of traffic cones and warning tape).

## **7.0 NOISE CONTROL**

All fieldwork activities will be conducted in a manner designed to reduce unnecessary noise generation, and to minimize the potential for both on-site and off-site harmful noise levels. The Project Manager and SSHO will establish noise reduction procedures (as appropriate to the Site and the work) to meet these requirements.

## **8.0 PERSONNEL TRAINING**

Work zones that will accomplish the general objectives stated above will be established by the Project Manager and the SSHO. Site access will be monitored by the SSHO, who will maintain a log-in sheet for personnel that will include, at a minimum, personnel on the Site, their arrival and departure times, and their destination on the Site. All workers will be properly trained in accordance with OSHA requirements (29 CFR 1910). Personnel exiting the work zone(s) will be decontaminated prior to exiting the Site.

Site-specific training will be provided to each employee. Personnel will be briefed by the SSHO as to the potential hazards to be encountered. Topics will include:

- Availability of this CHASP;
- General site hazards and specific hazards in the work areas, including those attributable to known or suspect on-site contaminants;
- Selection, use, testing, and care of the PPE being worn, with the limitations of each;
- Decontamination procedures for PPE, and other equipment used on the Site;
- Emergency response procedures and requirements;
- Emergency alarm systems and other forms of notification, and evacuation routes to be followed; and,
- Methods to obtain emergency assistance and medical attention.



## **9.0 DECONTAMINATION**

The SSHO will establish site-appropriate decontamination system and procedures to prevent potentially hazardous materials from leaving the Site. Site vehicles will be brushed to remove materials adhering to their surfaces. Decontaminated or clean sampling equipment not in use will be covered with plastic and stored in a designated storage area in the work zone.

## **10.0 EMERGENCY RESPONSE**

### **10.1 Notification of Site Emergencies**

In the event of an emergency, the SSHO will be immediately notified of the nature and extent of the emergency (the names and contact information for key site safety and management personnel, as well as other site safety contact telephone numbers, shall be posted at the Site).

Table 1 in this CHASP contains Emergency Response Telephone Numbers, and immediately following is a map detailing the directions to the nearest hospital emergency room. This information will be maintained at the worksite by the SSHO. The location of the nearest telephone will be determined prior to the initiation of on-site activities. In addition to any permanent phone lines, a cellular phone will be available for use on-site.

### **10.2 Responsibilities**

Prior to the initiation of on-site work activities, the SSHO will:

1. Notify individuals, authorities, and/or health care facilities as necessary of the potentially hazardous activities and potential wastes that may develop as a result of the investigation.
2. Confirm that first aid supplies and a fire extinguisher are available on-site.
3. Have a working knowledge of safety equipment available.
4. Confirm that a map detailing the most direct route to the hospital is prominently posted with the emergency telephone numbers.

The SSHO will be responsible for directing notification, response, and follow-up actions and for contacting outside response personnel (ambulance, fire department, or others). In the case of an evacuation, the SSHO will account for personnel. A log of individuals entering and leaving the Site will be kept so that everyone can be accounted for in an emergency.

Upon notification of an exposure incident, the SSHO will contact the appropriate emergency response personnel for recommended medical diagnosis and, if necessary, treatment. The SSHO will determine whether and at what levels exposure actually occurred, the cause of such exposure, and the means to prevent similar incidents from occurring again.



### **10.3 Accidents and Injuries**

In the event of an accident or injury, measures will be taken to assist those who have been injured or exposed and to protect others from hazards. If an individual is transported to a hospital or doctor, a copy of the CHASP will accompany the individual.

The SSHO will be notified and will respond according to the severity of the incident. The SSHO will perform an investigation of the incident and prepare a signed and dated report documenting the investigation. An exposure-incident report will also be completed by the SSHO and the exposed individual. The form will be filed with the employee's medical and safety records to serve as documentation of the incident and the actions taken.

### **10.4 Communication**

No special hand signals will be utilized within the work zone. Field personnel will utilize standard hand signals during the operation of any heavy equipment.

### **10.5 Safe Refuge**

Vehicles will serve as the immediate place of refuge in the event of an emergency. If evacuation from the area is necessary, project vehicles will be used to transport on-site personnel to safety.

### **10.6 Site Security and Control**

Site security and control during emergencies, accidents, and incidents will be monitored by the SSHO. The SSHO is responsible for limiting access to the Site to authorized personnel and for oversight of remediation activities.

### **10.7 Emergency Evacuation**

In case of an emergency, personnel will evacuate to the safe refuge identified by the SSHO, both for their personal safety and to prevent the hampering of response/rescue efforts.

### **10.8 Resuming Work**

A determination that it is safe to return to work will be made by the SSHO and/or any personnel assisting in the emergency, e.g., fire department, police department, utility company, etc. No personnel will be allowed to return to the work areas until a full determination has been made by the above-identified personnel that all field activities can continue unobstructed. Such a determination will depend upon the nature of the emergency (e.g., downed power lines -- removal of all lines from the property; fire -- extinguished fire; etc.). Before on-site work is resumed following an emergency, necessary emergency equipment and supplies will be recharged, refilled, or replaced. Government agencies will be notified as appropriate. An Incident Report Form will be filed.



## **10.9 Fire Fighting Procedures**

A fire extinguisher will be available in the work zone during on-site activities. This extinguisher is intended for small fires. When a fire cannot be controlled with the extinguisher, the area will be evacuated immediately. The SSHO will be responsible for directing notification, response, and follow-up actions and for contacting ambulance and fire department personnel.

## **10.10 Emergency Decontamination Procedure**

The extent of emergency decontamination depends on the severity of the injury or illness and the nature of the contamination. Whenever possible, minimum decontamination will consist of washing, rinsing, and/or removal of contaminated outer clothing and equipment. If time does not permit decontamination, the person will be given first aid treatment and then wrapped in plastic or a blanket prior to transport to medical care.

## **10.11 Emergency Equipment**

The following on-site equipment for safety and emergency response will be maintained in the on-site vehicle of the SSHO: fire extinguisher; first-aid kit; and, extra copy of this CHASP.

## **11.0 SPECIAL PRECAUTIONS AND PROCEDURES**

The activities associated with this investigation may involve potential risks of exposure to both chemical and physical hazards. The potential for chemical exposure to hazardous or regulated substances will be significantly reduced through the use of monitoring, personal protective clothing, engineering controls, and implementation of safe work practices.

### **11.1 Heavy Equipment**

Working in the vicinity of heavy equipment is the primary safety hazard at the Site. Physical hazards in working near heavy construction equipment include the following: overhead hazards, slips/trip/falls, hand and foot injuries, moving part hazards, improper lifting/back injuries, and noise. All workers will be properly trained in accordance with OSHA requirements (29 CFR 1910).

### **11.2 Open Pits**

The creation of open pits is not expected to occur during the remedial activities. In the event that Site conditions require soil excavation activities, no workers will be permitted within any excavated areas without proper personal protective equipment (PPE), including, as warranted, respirators, Tyvek suits and/or gloves. Air monitoring for VOCs will be conducted in accordance with the CHASP. During off-hours, temporary fencing will be erected to prevent unauthorized or accidental access to these areas.



### 11.3 Heat/Cold Stress

Training in prevention of heat/cold stress will be provided as part of the site-specific training. The timing of this project is such that heat/cold stress may pose a threat to the health and safety of personnel. Work/rest regimens will be employed, as necessary, so that personnel do not suffer adverse effects from heat/cold stress. Special clothing and appropriate diet and fluid intake regimens will be recommended to personnel to further reduce this temperature-related hazard. Rest periods will be recommended in the event of high/low temperatures and/or humidity to counter the negative effects of heat/cold stress.

### 11.4 Additional Safety Practices

The following are important safety precautions which will be enforced during this investigation:

- Medicine and alcohol can aggravate the effect of exposure to certain compounds. Controlled substances and alcoholic beverages will not be consumed during investigation activities. Consumption of prescribed drugs will only be at the discretion of a physician familiar with the person's work.
- Eating, drinking, chewing gum or tobacco, smoking, or other practices that increase the probability of hand-to-mouth transfer and ingestion of material is prohibited except in areas designated by the SSHO.
- Contact with potentially contaminated surfaces will be avoided whenever possible. Workers will not unnecessarily walk through puddles, mud, or other discolored surfaces; kneel on the ground; or lean, sit, or place equipment on drums, containers, vehicles, or the ground.
- Personnel and equipment in the work areas will be minimized, consistent with effective site operations.
- Unsafe equipment left unattended will be identified by a "DANGER, DO NOT OPERATE" tag.
- Work areas for various operational activities will be established.

### 11.5 Daily Log Contents

The SSHO will establish a system appropriate to the Site, the work, and the work zones that will record, at a minimum, the following information:

1. Personnel on the Site, their arrival and departure times, and their destination on the Site.
2. Incidents and unusual activities that occur on the Site such as, but not limited to, accidents, spills, breaches of security, injuries, equipment failures, and weather-related problems.
3. Changes to the CHASP.
4. Daily information generated such as: changes to work and health and safety plans; work accomplished and the current Site status; and monitoring results.



## 12.0 TABLE AND FIGURES

Table 1: Emergency Response Telephone Numbers

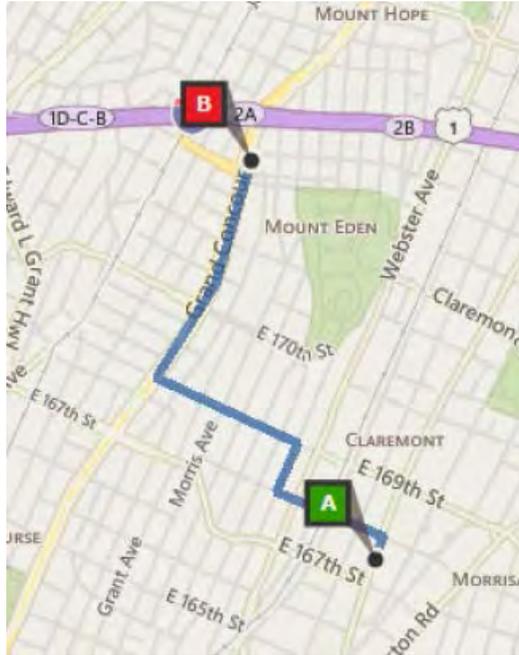
Emergency Agencies	Phone Numbers
<b>EMERGENCY</b>	<b>911</b>
<b>Bronx Lebanon Hospital</b> 1650 Grand Concourse, Bronx, NY 10457	<b>(718) 590-1800</b> or 911
<b>New York Police Department</b>	<b>(212) 678-2432</b> or 911
<b>New York City Fire Department</b>	<b>(917) 597-7937</b> or 911 <b>(718) 999-2000 (General Number)</b>
<b>New York Water &amp; Sewer</b>	<b>(212) 442-1904</b>
<b>Qualified Environmental Professional</b> Paul Ciminello, ESI	<b>(845) 452-1658</b>

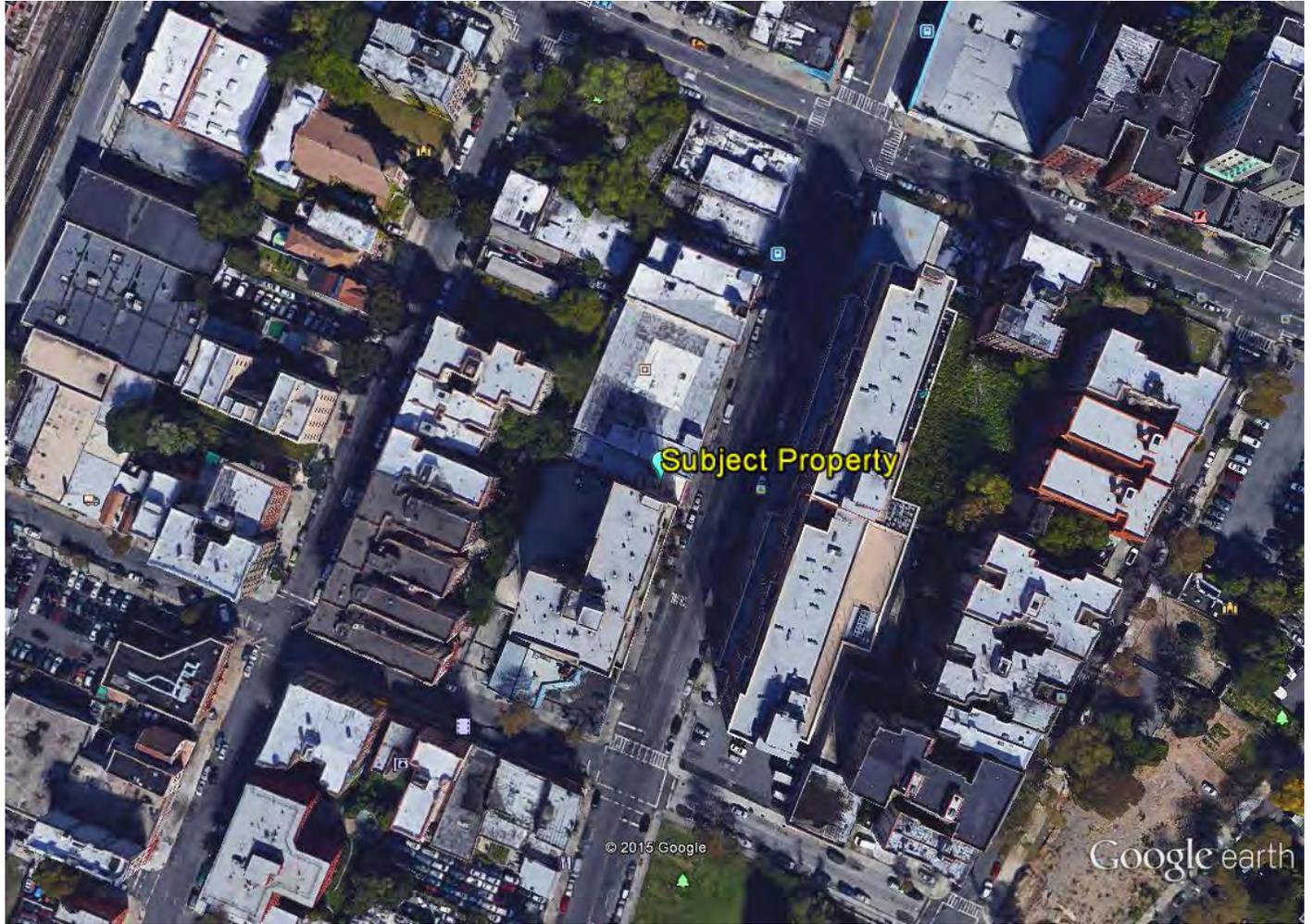
Figure 1: Directions to Hospital

<b>A</b>	3475 3rd Ave, Bronx, NY 10456	<b>A-B: 1.4 mi</b> 6 min
	1. Depart 3rd Ave toward E 168th St	285 ft
	2. Turn left onto E 168th St	0.3 mi
	3. Turn right onto Clay Ave	0.1 mi
	4. Turn left onto E 169th St	0.4 mi
	5. Turn right onto Grand Concourse	240 ft
	6. Road name changes to Grand Concourse St	282 ft
	7. Keep left onto Grand Concourse	0.5 mi
<b>B</b>	8. Arrive at 1650 Grand Concourse, Bronx, NY 10457 <i>The last intersection is E Mt Eden Ave If you reach E 173rd St, you've gone too far</i>	



**Figure 2: Map to Hospital (overview)**





**Site Location Map**  
3475 Third Avenue  
Borough of Bronx  
New York City, New York



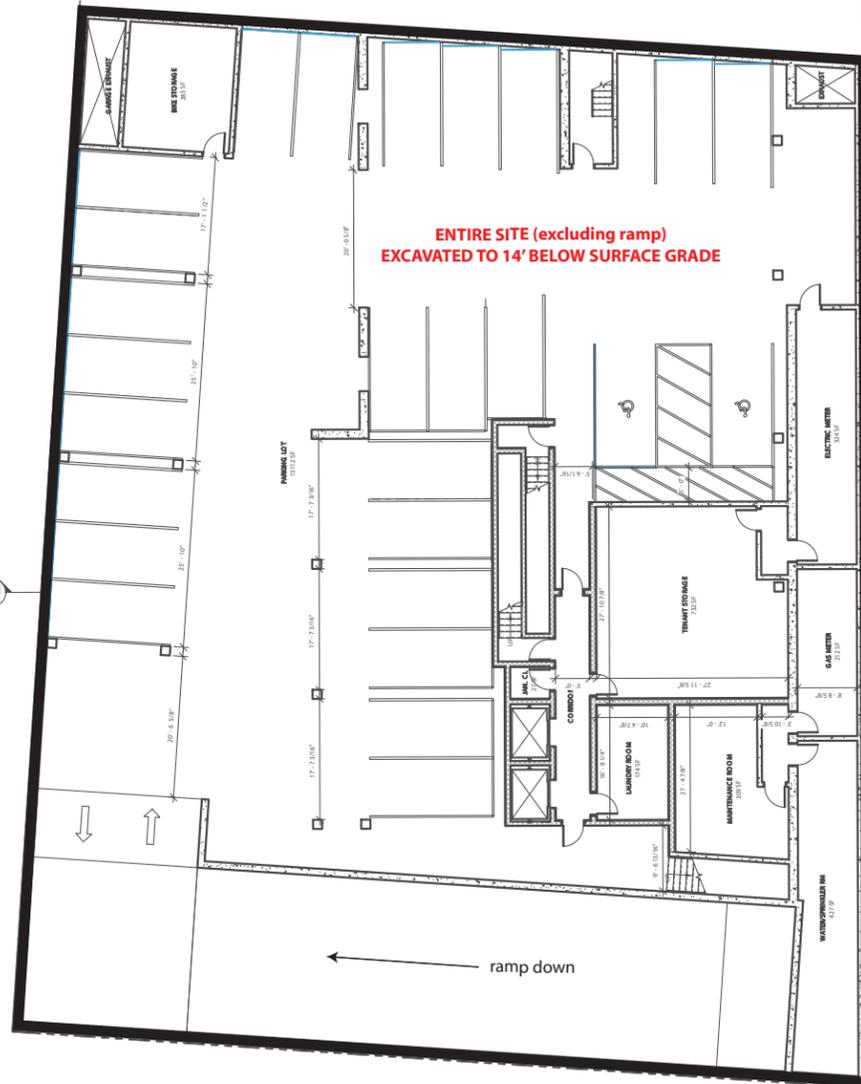
ESI File: KB15012.40

April 2015

Attachment



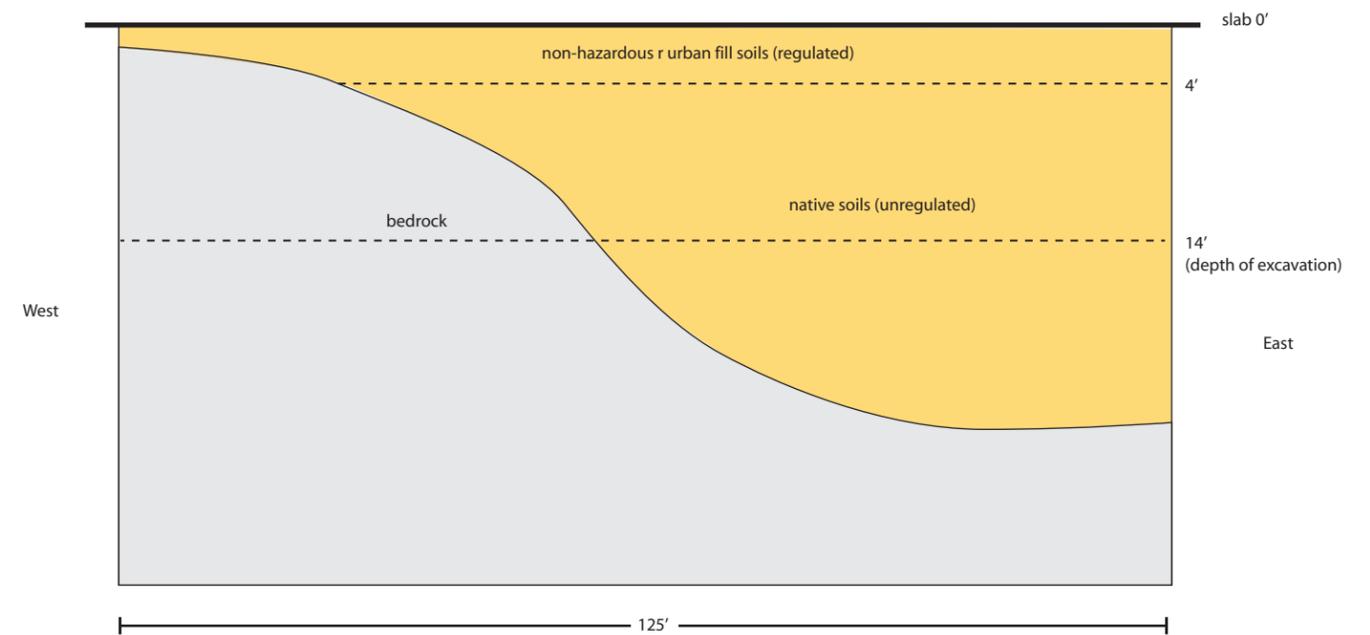
SITE EXCAVATION



THIRD AVENUE

CELLAR PLAN  
1/8" = 1'-0"

SCHEMATIC SITE EXCAVATION CROSS SECTION  
LOOKING FROM SOUTH TO NORTH



Base map provided by OCV Architects - Cellar Plan dated 10/6/14. All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Legend:

— subject property border

Site Excavation Map

3475 Third Avenue  
Borough of Bronx  
New York City, New York

ESI File: KB15012.40

Scale as shown

April 2015

Attachment



## **APPENDIX H**

### ***Specifications for Waterproofing Membrane***

# UNDER-SLAB GAS BARRIER / VAPOR RETARDER (Class A)

## PART 1 – GENERAL

### 1.1 SUMMARY

#### A. Products Supplied Under This Section

1. Gas Barrier / Vapor Retarder, Seam Tape, and Pipe Boots

### 1.2 REFERENCES

#### A. American Society for Testing and Materials (ASTM)

1. ASTM E 1745 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil Or Granular Fill Under Concrete Slabs
2. ASTM E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs
3. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials
4. ASTM E 1643 Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs
5. ASTM D 1434 Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting

#### B. SP Technical Research Institute of Sweden

#### C. American Concrete Institute (ACI)

1. ACI 302.1R-6 & 7 Section 3.2.3 Vapor Retarder

### 1.3 SUBMITTALS

#### A. Testing/Specifications

1. Laboratory test results showing compliance with ASTM & ACI Standards.
2. Manufacturer's samples, literature.
3. Manufacturer's installation instructions for placement and seaming.

## PART 2 – PRODUCTS

### 2.1 MATERIALS

#### **A. Provide a Gas Barrier / Vapor Retarder that meets the following:**

1. ASTM E-1745 Standard for Plastic Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs
  - a) Must meet all Class "A" criteria.
2. ASTM D 1434 Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting
  - a) Methane Permeability:  $< 5 \times 10^{-10} \text{ m}^2/\text{d}\cdot\text{atm}$
  - b) Radon Diffusion Coefficient:  $< 0.25 \times 10^{-12} \text{ m}^2/\text{s}$

- VaporBlock® Plus™ 20

*Other Manufacturer accepted meeting the above specification:*

- CETCO Liquid Boot Company - 714-384-0111

## 2.2 ACCESSORIES

### A. Seam Tape

1. VaporBond Plus or other 4" wide gas barrier tape approved by the gas barrier / vapor retarder manufacturer.
2. Butyl Seal Tape by Raven Industries, or other 2" wide double -sided reinforced butyl rubber tape.

### B. Pipe Boots

1. VaporBoot Plus System or other manufacturer's supplied pipe boot system.

## PART 3 – EXECUTION

### 3.1 PREPARATION

#### A. Ensure that subsoil is approved by architect

1. Level and tamp or roll aggregate, sand or tamped earth base.

### 3.2 INSTALLATION

#### A. Install Gas Barrier / Vapor Retarder:

1. Installation shall be in accordance with manufacturer's instructions and ASTM E 1643. (Instructions on architectural or structural drawings should be reviewed and followed.)
  - A. Unroll VaporBlock Plus with the longest dimension parallel with the direction of the pour and pull open all folds to full width.
  - B. Lap VaporBlock Plus over footings and seal to the vertical foundation walls with 2-Sided Butyl Seal tape.
  - C. Overlap joints a minimum of 12 inches and seal in-between overlap with 2-Sided Butyl Seal tape then seal overlap with VaporBond Plus Tape or other 4" wide barrier tape approved by gas barrier / vapor retarder manufacturer.
  - D. Seal around sewer pipes, support columns or any other penetration with the VaporBoot System or at minimum a combination of VaporBlock Plus and VaporBond Plus Tape, creating a monolithic membrane between the surface of the slab and moisture sources below as well as at the slab perimeter.
  - E. When VaporBlock Plus gas barrier is used as a part of an active control system for radon gas and other VOCs, a ventilation system will be required. When installed as a passive system it is still recommended to include a ventilation system that could be converted to an active system later.
  - F. Repair damaged areas by cutting patches of VaporBlock Plus, overlapping damaged area 12 inches and taping all four sides with VaporBond Plus Tape or other 4" wide barrier tape approved by vapor retarder / gas barrier manufacturer.

07/08 EFD1133

GLOBAL PLASTIC SHEETING  
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Vista, CA 92081  
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Fax: 760-597-9574  
[www.globalplasticsheeting.com](http://www.globalplasticsheeting.com)

Phone 866.597.9298



## VaporBlock®20 Plus-Stop Radon, Methane Gas and Mold Migration!



**VaporBlock 20 Plus** is a highly resilient underslab / vertical wall barrier designed to restrict naturally occurring gases such as radon and/or methane from migrating through the ground and concrete slab. VaporBlock Plus is more than 50 times less permeable than typical high performance polyethylene vapor retarders against Methane, Radon and other harmful VOC's. This is due to the tight cell structure.

**VaporBlock 20 Plus™** is a seven-layer co-extruded barrier made from state-of-the-art polyethylene and barrier resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission.

**VaporBlock 20 Plus** is one of the most effective underslab (underlayment for concrete) barriers in the building industry today far exceeding ASTM E-1745 (Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs) Class A, B and C requirements. Available in 6 (Class C) and 20 (Class A) mil thicknesses designed to meet the most stringent requirements.

**VaporBlock20 Plus** is produced within the strict guidelines of our ISO 9001:2000 Certified Management System.

### PRODUCT USE

**VaporBlock 20 Plus** resists gas and moisture migration into the building envelop when properly installed. It can be installed as a passive or active control system extending across the entire building including floors, walls and crawl spaces. When installed as a passive system it is recommended to also include a ventilated system with sump(s) that could be converted to an active control system with properly designed ventilation fans.

**VaporBlock 20 Plus** works to protect your flooring and other moisture-sensitive furnishings in the building's interior from moisture and water vapor migration, greatly reducing condensation, mold and degradation.

### SIZE & PACKAGING

**VaporBlock Plus 20 comes in 10' x 150' rolls** to maximize coverage. All rolls are folded on heavy-duty cores for ease in handling and installation. Other custom sizes with factory welded seams are available based on minimum volume requirements. Installation instructions and ASTM E-1745 classifications accompany each roll.

#### [More information and photos](#)

For a quote, please phone or email us about this product.

(760) 597-9298 | (866) 597-9298 | [email](#)

Global Plastic Sheeting provides our customers with our exact shipping costs; including our significant discounts with NO HANDLING fees or other fees of any kind. No Surprises! Office Hours: 6:30 am - 5:30 pm Pacific Time Zone, Monday - Friday

#### [Request a free product catalog](#)

#### [Contact Us](#)

Part Number: VB20+ 12X200

## PRODUCT DESCRIPTION

VaporBlock Plus™ is a seven-layer co-extruded barrier made from state-of-the-art polyethylene and barrier resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission. VaporBlock Plus is a highly resilient underslab/ vertical wall barrier designed to restrict naturally occurring gases such as radon and/or methane from migrating through the ground and concrete slab. VaporBlock Plus is more than 50 times less permeable than typical high-performance polyethylene vapor retarders against Methane, Radon and other harmful VOCs.

VaporBlock Plus is one of the most effective underslab barriers in the building industry today far exceeding ASTM E-1745 (Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs) Class A, B and C requirements. Available in 6 (Class C) and 20 (Class A) mil thicknesses designed to meet the most stringent requirements. VaporBlock Plus is produced within the strict guidelines of our ISO 9001:2000 Certified Management System.

## PRODUCT USE

VaporBlock Plus resists gas and moisture migration into the building envelop when properly installed. It can be installed as a passive or active control system extending across the entire building including floors, walls and crawl spaces. When installed as a passive system it is recommended to also include a ventilated system with sump(s) that could be converted to an active control system with properly designed ventilation fans.

VaporBlock Plus works to protect your flooring and other moisture-sensitive furnishings in the building's interior from moisture and water vapor migration, greatly reducing condensation, mold and degradation.

## SIZE & PACKAGING

VaporBlock Plus 6 is available in 12' x 200' rolls and VaporBlock Plus 20 in 10' x 150' rolls to maximize coverage. All rolls are folded on heavy-duty cores for ease in handling and installation. Other custom sizes with factory welded seams are available based on minimum volume requirements. Installation instructions and ASTM E-1745 classifications accompany each roll.

PRODUCT	PART NUMBER
---------	-------------

VaporBlock Plus 6	VBP 6
-------------------	-------

VaporBlock Plus 20	VBP 20
--------------------	--------

## COMMON APPLICATIONS

- Radon Barrier
- Methane Barrier
- VOCs Barrier
- Under-Slab Vapor Retarder
- Foundation Wall Vapor Retarder



TECHNICAL DATA SHEET					
PROPERTIES	TEST METHOD	VAPORBLOCK PLUS 6		VAPORBLOCK PLUS 20	
		English	Metric	English	Metric
APPEARANCE		White/Black		White/Gold	
THICKNESS, NOMINAL		6 mil	0.15 mm	20 mil	0.51 mm
WEIGHT		28 lbs/MSF	139 g/m <sup>2</sup>	102 lbs/MSF	498 g/m <sup>2</sup>
CLASSIFICATION	ASTM E 1745	CLASS C		CLASS A, B & C	
TENSILE STRENGTH 1" (2.54 cm) Average MD & TD (New Material)	ASTM E 154 Section 9 (D882)	22 lbs	98 N	58 lbs	258 N
PUNCTURE RESISTANCE	ASTM D 1709 *Method B	800 g		2600 g	
MAXIMUM USE TEMPERATURE		180°F	82°C	180°F	82°C
PERMEANCE (New Material)	ASTM E 154 Section 7  ASTM E 96 Procedure B	0.090 U.S. Perms	0.060 Metric Perms	0.025 U.S. Perms	0.016 Metric Perms
**RADON DIFFUSION COEFFICIENT		N/A		< 0.25 x 10 <sup>-12</sup> m <sup>2</sup> /s	
METHANE PERMEABILITY	ASTM D 1434	N/A		< 5 x 10 <sup>-10</sup> m <sup>2</sup> /d·atm	

\*Method B conditioned at 65% humidity for 14 days.

\*\*SP Technical Research Institute of Sweden.

## VaporBlock<sup>®</sup> Plus<sup>™</sup> Placement

All instructions on architectural or structural drawings should be reviewed and followed.

Detailed installation instructions accompany each roll of VaporBlock<sup>®</sup> Plus<sup>™</sup> and can also be located on our website.

ASTM E-1643 also provides general installation information for vapor retarders.



VaporBlock<sup>®</sup> Plus<sup>™</sup> is a seven-layer co-extruded barrier made using high quality virgin-grade polyethylene and barrier resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission.

Note: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. NO WARRANTIES ARE MADE AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and we disclaim all liability for resulting loss or damage.



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**ISO 9001:2000**  
 CERTIFIED MANAGEMENT SYSTEM

# VaporBlock® Plus™

UNDERSLAB VAPOR RETARDER / GAS BARRIER

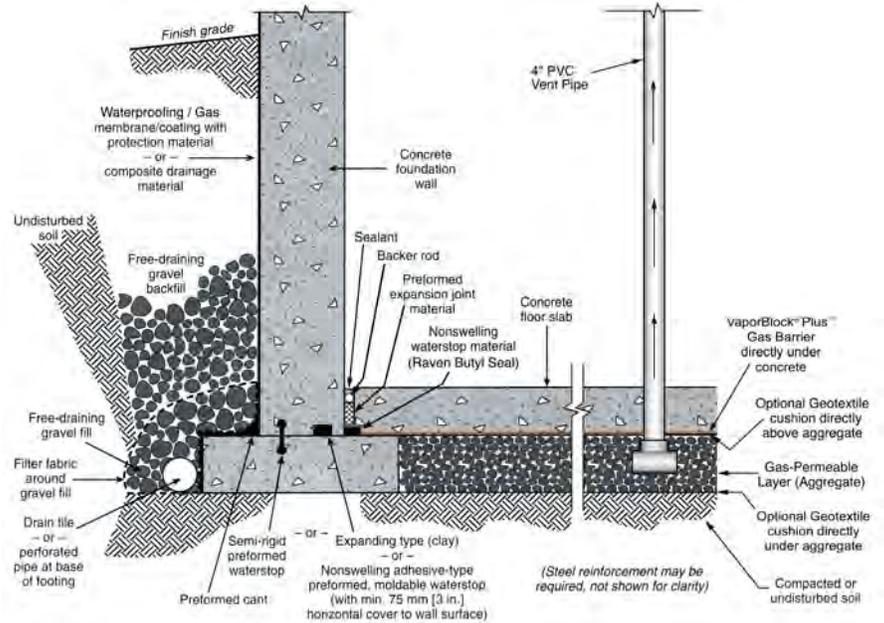
## INSTALLATION GUIDELINES

**Please Note:** Read these instructions thoroughly before installation to ensure proper use of VaporBlock® Plus™. ASTM E 1465, ASTM E 2121 and, ASTM E 1643 also provide valuable information regarding the installation of vapor / gas barriers. When installing this product, contractors shall conform to all applicable local, state and federal regulations and laws pertaining to residential and commercial building construction.

- When VaporBlock Plus gas barrier is used as part of an active control system for radon or other gas, a ventilation system will be required.
- If designed as a passive system, it is recommended to install a ventilation system that could be converted to an active system if needed.

### Materials List:

VaporBlock® Plus™ Vapor / Gas Barrier  
 VaporBond Plus 4" Foil Seaming Tape  
 Butyl Seal 2-Sided Tape  
 VaporBoot Plus Pipe Boots 12/Box (recommended)  
 VaporBoot Tape (optional)



Elements of a moisture/gas-resistant floor system. General illustration only. (Note: This example shows multiple options for waterstop placement.)

## VaporBlock® Plus™ PLACEMENT

- 1.1. Level and tamp or roll granular base as specified. A base for a gas-reduction system may require a 4" to 6" gas permeable layer of clean coarse aggregate as specified by your architectural or structural drawings after installation of the recommended gas collection system. In this situation, a cushion layer consisting of a non-woven geotextile fabric placed directly under VaporBlock Plus will help protect the barrier from damage due to possible sharp coarse aggregate.
- 1.2. Unroll VaporBlock Plus running the longest dimension parallel with the direction of the pour and pull open all folds to full width. (Fig. 1)
- 1.3. Lap VaporBlock Plus over the footings and seal with Raven Butyl Seal tape at the footing-wall connection. Overlap joints a minimum of 6" and seal overlap with Raven VaporBond Tape. When used as a gas barrier, overlap joints a minimum of 12" and seal in-between overlap with 2-sided Raven Butyl Seal Tape then seal overlap with VaporBond Plus Tape. (Fig. 2)

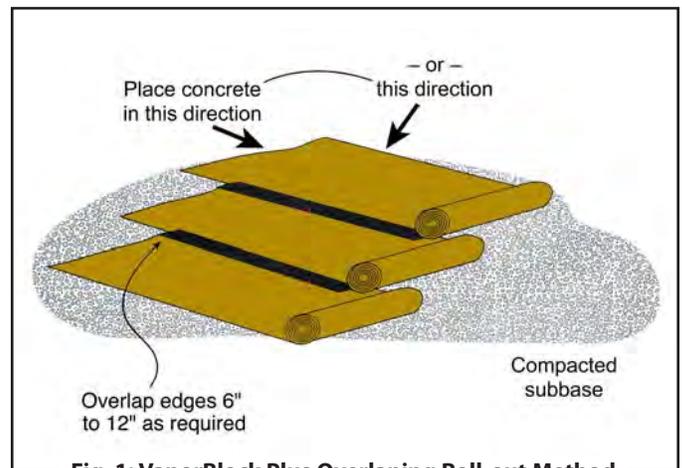


Fig. 1: VaporBlock Plus Overlapping Roll-out Method

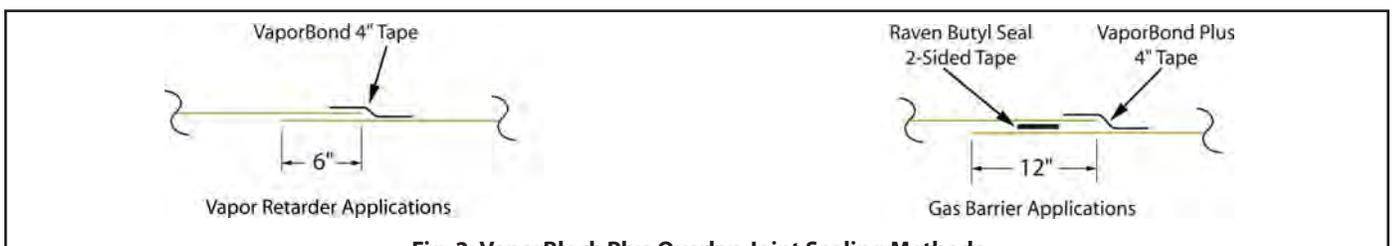


Fig. 2: VaporBlock Plus Overlap Joint Sealing Methods

# SINGLE PENETRATION PIPE BOOT INSTALLATION

1.4. Seal around all plumbing, conduit, support columns or other penetrations that come through the **VaporBlock Plus** membrane. Pipes four inches or smaller can be sealed with Raven VaporBoot Plus preformed pipe boots. VaporBoot Plus preformed pipe boots are formed in steps for 1", 2", 3" and 4" PVC pipe or IPS size and are sold in units of 12 per box (Fig. 3 & 5).

Pipe boots may also be fabricated from excess **VaporBlock Plus** membrane (Fig. 4 & 6) and sealed with VaporBoot Tape or VaporBond Plus Tape (sold separately).

*Reminder Note: All holes or penetrations through the membrane will need a patch cut to a minimum of 12" from the opening in all directions.*

To fabricate pipe boots from **VaporBlock Plus** excess material (see Fig. 4 & 6 for A-F):

- A) Cut a square large enough to overlap 12" in all directions.
- B) Mark where to cut opening on the center of the square and cut four to eight slices about 3/8" less than the diameter of the pipe.
- C) Force the square over the pipe leaving the tightly stretched cut area around the bottom of the pipe with approximately a 1/2" of the boot material running vertically up the pipe. *(no more than a 1/2" of stretched boot material is recommended)*

D) Once boot is positioned, seal the perimeter to the membrane by applying 2-sided Raven Butyl Seal Tape inbetween the two layers. Secure boot down firmly over the membrane taking care not to have any large folds or creases.

E) Use VaporBoot Tape or VaporBond Plus Tape to secure the boot to the pipe.

VaporBoot Tape (option) – fold tape in half lengthwise, remove half of the release liner and wrap around the pipe allowing 1" extra for overlap sealing. Peel off the second half of the release liner and work the tape outward gradually forming a complete seal.

VaporBond Plus Tape (option) - Tape completely around the pipe overlapping the to get a tight seal against the pipe.

F) Complete the process by taping over the boot perimeter edge with VaporBond Plus Tape to create a monolithic membrane between the surface of the slab and gas/moisture sources below and at the slab perimeter. (Fig. 4 & 6)

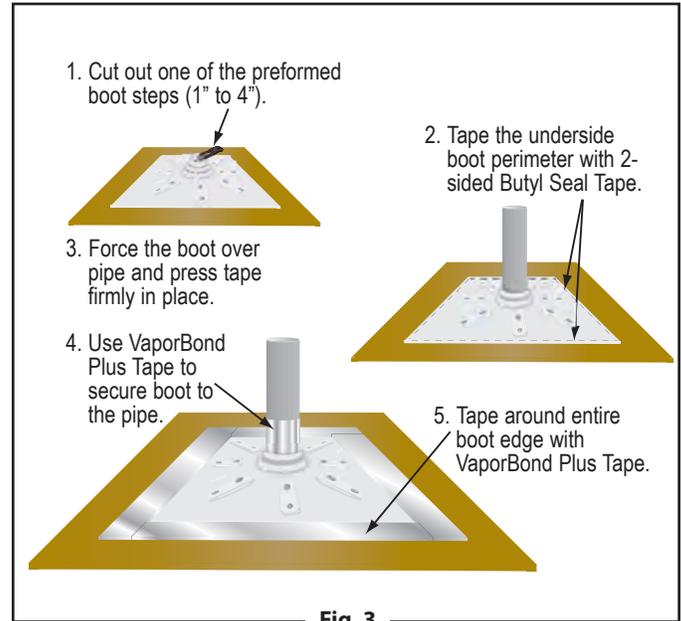


Fig. 3

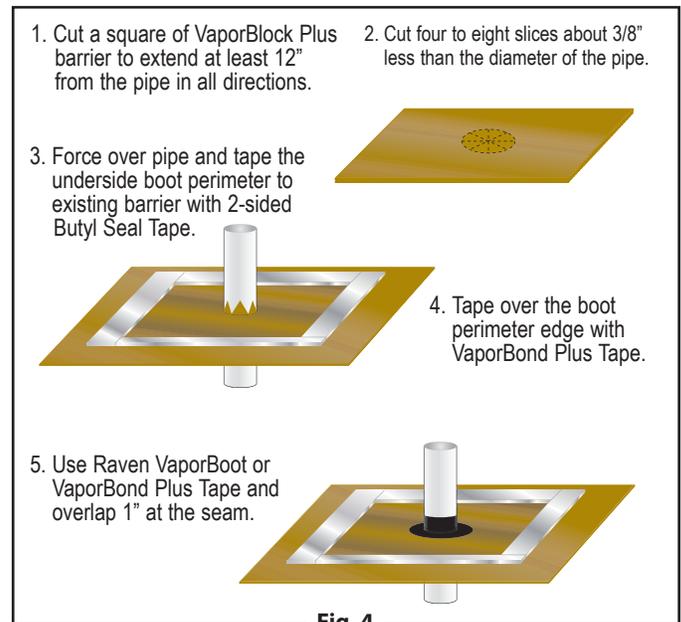


Fig. 4

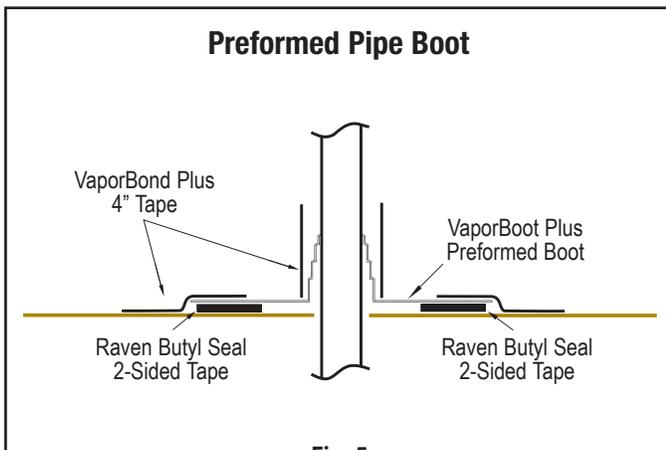


Fig. 5

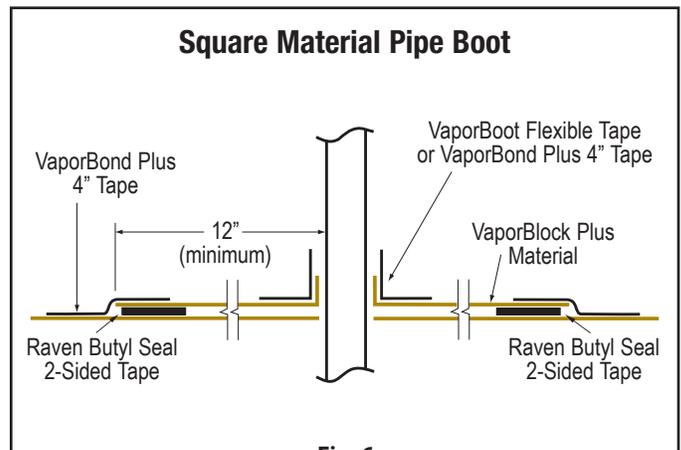


Fig. 6

# MULTIPLE PENETRATION PIPE BOOT INSTALLATION

1.5. For side-by-side multiple penetrations;

- A) Cut a patch large enough to overlap 12" in all directions (Fig. 7) of penetrations.
- B) Mark where to cut openings and cut four to eight slices about 3/8" less than the diameter of the penetration for each.
- C) Slide patch material over penetration to achieve a tight fit.
- D) Once patch is positioned, seal the perimeter to the membrane by applying 2-sided Raven Butyl Seal Tape in-between the two layers. (Fig. 8)
- E) After applying Raven Butyl Seal Tape between the patch and membrane, tape around each of the penetrations and the patch with VaporBond Plus 4" foil tape. (Fig. 9) For additional protection apply an acceptable polyurethane elastomeric sealant around the penetrations. (Fig. 10)

1.6. Holes or openings through **VaporBlock Plus** are to be repaired by cutting a piece of **VaporBlock Plus** 12" larger in all directions from the opening. Seal the patch to the barrier with 2-sided Raven Butyl Seal Tape and seal the edges of the patch with VaporBond Plus Tape.

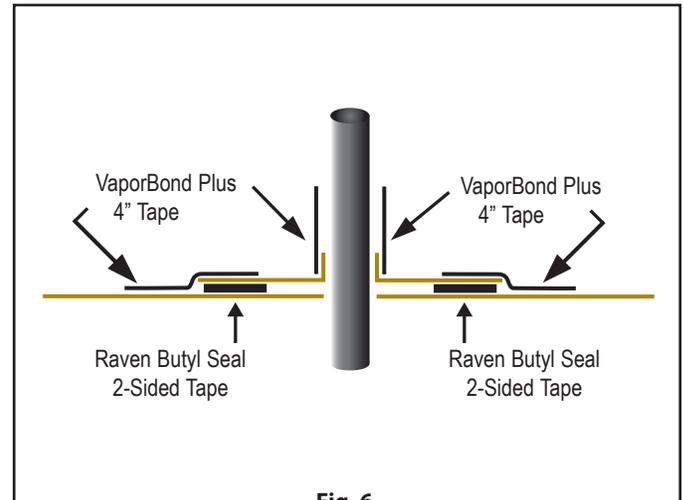


Fig. 6

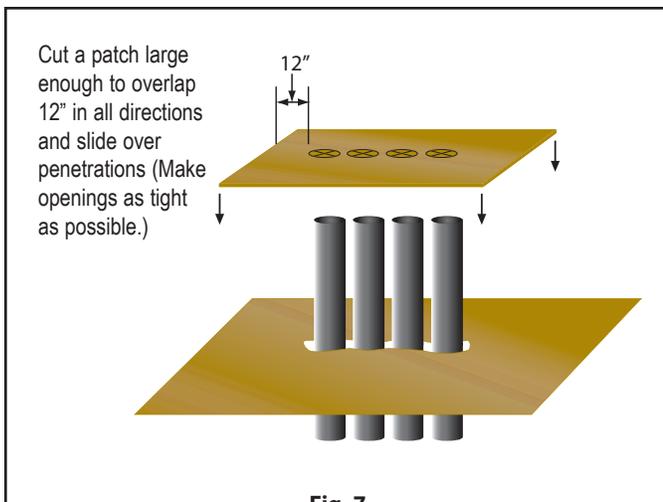


Fig. 7

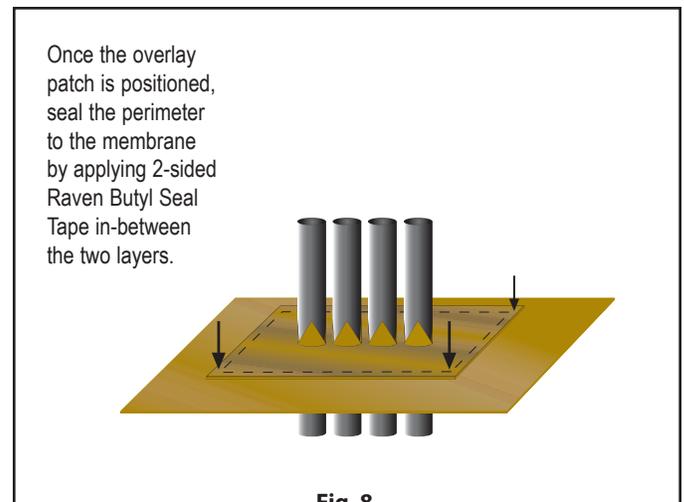


Fig. 8

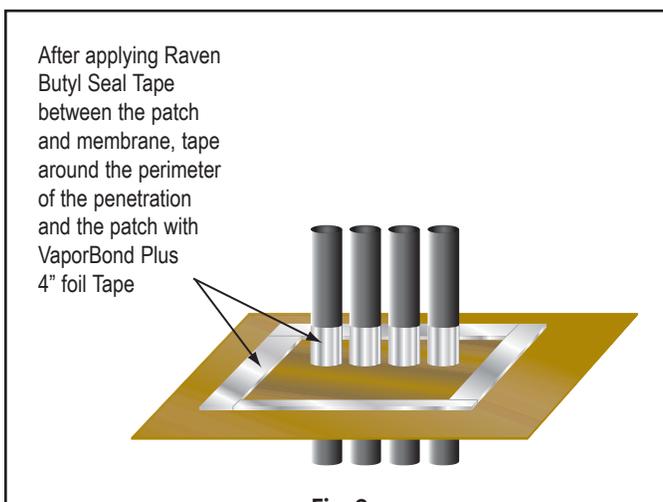


Fig. 9

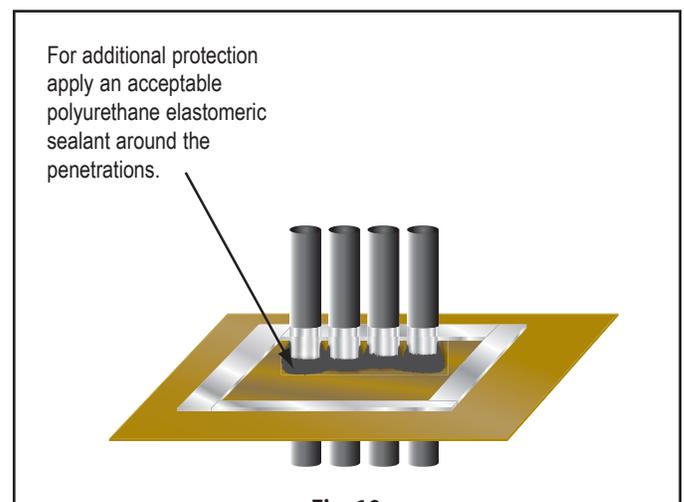


Fig. 10

- 2.1. When installing reinforcing steel and utilities, in addition to the placement of concrete, take precaution to protect **VaporBlock Plus**. Carelessness during installation can damage the most puncture-resistant membrane. Sheets of plywood cushioned with geotextile fabric temporarily placed on **VaporBlock Plus** provide for additional protection in high traffic areas including concrete buggies.
- 2.2. Use only brick-type or chair-type reinforcing bar supports to protect **VaporBlock Plus** from puncture.
- 2.3. Avoid driving stakes through **VaporBlock Plus**. If this cannot be avoided, each individual hole must be repaired.
- 2.4. If a cushion or blotter layer is required in the design between **VaporBlock Plus** and the slab, additional care should be given if sharp crushed rock is used. Washed rock will provide less chance of damage during placement. Care must be taken to protect blotter layer from precipitation before concrete is placed.



Note: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. NO WARRANTIES ARE MADE AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage.



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