

**NYU LANGONE MEDICAL CENTER – KIMMEL  
PAVILION**

**MANHATTAN, NEW YORK**

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**Remedial Investigation Report**

**NYC VCP Number: 14CVCP183M  
OER Project Number 12RHAZ027M  
DEP Project Number 11DEPTECH015M  
CEQR Number 11BSA029M  
Restrictive Declaration 2011000084677  
DOB Job Number 120448284**

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OER Remedial Investigation Report

# **REMEDIAL INVESTIGATION REPORT**

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## LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
CAMP	Community Air Monitoring Plan
COC	Contaminant of Concern
CPP	Citizen Participation Plan
CSM	Conceptual Site Model
DER-10	New York State Department of Environmental Conservation Technical Guide 10
FID	Flame Ionization Detector
GPS	Global Positioning System
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
IRM	Interim Remedial Measure
NAPL	Non-aqueous Phase Liquid
NYC VCP	New York City Voluntary Cleanup Program
NYC DOHMH	New York City Department of Health and Mental Hygiene
NYC OER	New York City Office of Environmental Remediation
NYS DOH ELAP	New York State Department of Health Environmental Laboratory Accreditation Program
OSHA	Occupational Safety and Health Administration
PID	Photoionization Detector
QEP	Qualified Environmental Professional
RI	Remedial Investigation
RIR	Remedial Investigation Report
SCO	Soil Cleanup Objective
SPEED	Searchable Property Environmental Electronic Database

## CERTIFICATION

I, Marcus Simons, am a Qualified Environmental Professional, as defined in RCNY § 43-1402(ar). I have primary direct responsibility for implementation of the Remedial Investigation for the NYU Langone Medical Center Kimmel Pavilion Site (Restrictive Declaration No. 2011000084677). I am responsible for the content of this Remedial Investigation Report (RIR), have reviewed its contents and certify that this RIR is accurate to the best of my knowledge and contains all available environmental information and data regarding the property.

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Qualified Environmental Professional

Date

Signature

## **EXECUTIVE SUMMARY**

The Remedial Investigation Report (RIR) provides sufficient information for establishment of remedial action objectives, evaluation of remedial action alternatives, and selection of a remedy pursuant to RCNY§ 43-1407(f). The remedial investigation (RI) described in this document is consistent with applicable guidance.

### **Site Location and Current Usage**

The Site is located on East 34<sup>th</sup> Street between First Avenue and FDR Drive in the Kips Bay section of Manhattan, New York and is identified as Block 962, Lot 7501 on the New York City Tax Map. Figure 1 is a Site location map. The Site is approximately 95,400 square feet and is part of the NYU Langone Medical Center (NYULMC). The Site is bounded by East 34th Street to the north, the remainder of NYULMC to the south, the FDR Drive (and East River) to the east, and two Amtrak ventilation towers and First Avenue to the west. Currently, the Site contains three connected medical buildings (Rusk Institute, Perelman Building, and North Service Wing), parking and loading dock areas, and open space. One of the medical buildings, Rusk Institute (Rusk), includes the Auxiliary Pavilion, a greenhouse complex and several smaller structures. The Site was assigned CEQR Project No. 11BSA029M/11DEPTECH015M during its review by NYCDEP, and was subsequently assigned OER Project No. 12RHAZ027M. Restrictive Declaration No. 2011000084677 was assigned to the Site on February 24, 2011.

A portion of the Consolidated Edison (Con Ed) East 32<sup>nd</sup> Street Station, New York State Voluntary Cleanup Program (VCP) Site V00543, is located in the southern portion of the Site. Site V00543 was investigated by Con Ed in 2010, as summarized in Sections 2.2 and 2.3. No contamination associated with historical Manufactured Gas Plant (MGP) operation was identified, and the New York State Department of Environmental Conservation (NYSDEC) assigned a “C” classification to this site, i.e., no further remediation is required.

### **Summary of Proposed Redevelopment Plan**

The proposed redevelopment of the Site will consist of a new medical facility; layout is presented on Figure 3. The proposed building would have an approximately 53,000-square foot

footprint and an approximately 900,000 gross square foot floor area. Previous investigations, summarized in Section 2.2, indicated that bedrock is present approximately 60 to 100 ftbg, and that groundwater is first encountered at approximately 2 to -2 feet MBD (4 to 8 ftbg), and is tidally influenced due to proximity to the East River. The current zoning is R8 (general residence). The proposed redevelopment will cover the entire footprint of the Site and will entail the following:

1. Demolition of all existing structures;
2. Construction of a new 19-story medical facility with a three-level mechanical penthouse but no basement level in the eastern portion of the Site as shown on Figure 3;
3. Construction of driveways and paved and landscaped open space on the remainder of the Site.

The proposed redevelopment would entail soil disturbance within the new building footprint to approximately 1 to 10 feet below grade (ftbg), i.e. elevation +5 to -4 feet Manhattan Borough Datum (MBD), for the building foundations including a pressure slab (used as a foundation and flood-proofing measure). Some deeper disturbance (up to approximately 25 ftbg) would be required for footings, elevator pits, fuel storage, etc. The proposed pressure slab bottom elevations are shown on Figure 8. The excavation plan is shown on Figure 9. Dewatering will likely be required for the deeper excavations. The new building's ground floor will be occupied by a lobby, offices, utility rooms, storage rooms, and loading and parking areas, and would not include any acute care areas. Outside of the proposed building footprint, the proposed redevelopment would entail limited excavation (generally less than 2 ftbg) or filling for Site re-grading.

Approximately 60% of the Site will be covered by the new building, 25% will be covered with paved surfaces (driveways, walkways and a service yard), and the remaining 15% will be landscaped. The paved outdoor areas will be capped by 3 to 4-inch thick pavement underlain by a 1-inch bituminous base, 4 to 6 inches of concrete and 6 to 7 inches of imported sub-base (a total of 14 to 18 inches). All areas not capped by an impervious surface (e.g., concrete slab or pavement) would be capped with at least 2 feet of OER-certified imported uncontaminated soil.

Based on proposed excavation depths, it is estimated that approximately 13,000 cubic yards (approximately 19,500 tons) of soil would be excavated and transported off-site for disposal from beneath the area of new foundation slabs and Site cap and/or potentially to replace existing fill with structurally appropriate fill,. Approximately 11,000 cubic yards (approximately 16,500 tons) of soil will be imported as backfill, with approximately 9,500 cubic yards used as fill for existing basements, structural fill and sub-base for paved areas, and approximately 1,500 cubic yards used as landscaping soil.

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

The Site was created by landfilling in the mid-1800s and early 1900s. Geotechnical borings in the vicinity of the Site (conducted in the 1950s and 1960s) encountered a 10 to 35-foot thick layer of urban fill containing miscellaneous construction debris. Prior to construction of the current structures, the Site had a variety of uses including stores, a portion of Standard Gas Light Co. (the VCP Site described above) including two small aboveground tanks with unspecified contents, a portion of a coal yard, a lumber yard and a silk hose factory. The Standard Gas Light Co. facility was present in approximately 1886-1930, with the property still owned by Con Ed in the 1940s. Computerized NYC Buildings Department records identified a filling station at 596 First Avenue in 1934. However, historical Sanborn maps reviewed for the Phase I ESA (Appendix A) indicated that this filling station was actually historically located off the Kimmel Pavilion site but within the western portion of the superblock at 566 First Avenue (between East 32<sup>rd</sup> and East 33<sup>rd</sup> Streets), and that no filling station existed on-site in the past. The location of the historical filling station was recently excavated to below the water table under AKRF oversight as part of the NYULMC Emergency Department expansion, and no evidence of contamination was noted.

NYU purchased the Site in approximately 1946, with most of the existing buildings constructed in the 1950s and 1960s. NYULMC uses at the Site included medical buildings, greenhouses, and parking and loading dock areas. Cleaning, maintenance, medical and laboratory chemicals were stored on-site, with no evidence of spills observed. The surrounding area had a long history of manufacturing and industrial activities.

Although historical uses of the Site, on-site use of laboratory chemicals, and historical uses in the surrounding area were identified as potential sources of contamination, a subsurface (Phase II) investigation conducted by AKRF in June 2011 identified no evidence of a spill or MGP-related wastes in the 0 to 6-ftbg interval beneath the Site. The investigation identified urban fill materials containing moderately elevated concentrations of metals, semi-volatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs). Moderately elevated concentrations of metals, SVOCs, and the pesticide 4,4'-DDT were detected in groundwater.

The former Standard Gas Light Co. site was investigated by Con Ed in 2010 as VCP site V00543. No contamination associated with MGP operation was identified, and NYSDEC assigned a "C" classification to this site, i.e., no further remediation is required.

The following Areas of Concern (AOCs) were identified based on previous studies:

1. Urban fill materials beneath the Site;
2. Potential soil vapor contamination due to past and present Site uses; and
3. Potential soil vapor contamination due to historical uses in the surrounding area.

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

On behalf of NYULMC, AKRF performed the following in August 2013 in accordance with an OER-approved scope of work (included in Appendix A):

1. Conducted a Site inspection to identify AOCs and physical obstructions (e.g., structures or buildings); and
2. Installed 7 soil vapor probes within the proposed building footprint and collected 7 vapor samples for laboratory analysis.

### **Summary of On-Site Environmental Findings**

1. The Site elevation varies from approximately 4.5 to 10 feet above the Manhattan Borough Datum (MBD), with the current grade in the area of the proposed building approximately 6 feet MBD.
2. Groundwater elevation ranges from approximately 2 to -2 feet MBD, i.e., approximately 4 to 8 ftbg within the proposed building footprint.

3. Based on topography, groundwater is anticipated to flow generally from west to east. Groundwater elevation and flow direction are likely tidally influenced due to the East River, approximately 200 feet to the east.
4. Depth to bedrock is approximately 60 to 100 feet.
5. The Site is located on land created by filling in the mid-1800s and early 1900s. The origin of this fill is unknown. Prior to construction of the current structures, the Site had various uses including stores, a portion of a manufactured gas holder facility including two small aboveground tanks with unspecified contents, and a silk hose factory. The manufactured gas facility was present in approximately 1886-1930, with the property still owned by Con Ed in the 1940s. Computerized NYC Buildings Department records for a filling station at 596 First Avenue in 1934. However, historical Sanborn maps reviewed for the Phase I ESA (Appendix A) indicated that this filling station was actually historically located off the Kimmel Pavilion site but within the western portion of the superblock at 566 First Avenue (between East 32<sup>rd</sup> and East 33<sup>rd</sup> Streets), and that no filling station existed on-site in the past. The location of the historical filling station was recently excavated to below the water table under AKRF oversight as part of the NYULMC Emergency Department expansion, and no evidence of contamination was noted. NYU purchased the Site in approximately 1946, with most of the existing buildings constructed in the 1950s and 1960s. Site uses at the time of the Phase I ESA included medical buildings, greenhouses, and parking and loading dock areas. Cleaning, maintenance, medical and laboratory chemicals were stored on-Site, with no evidence of spills observed. The surrounding area has a long history of manufacturing and industrial activities.
6. As indicated by past geotechnical investigations, the stratigraphy of the Site, from the surface down, consists of approximately 10 to 45 feet of urban fill materials (observed during the Phase II to contain sand, silt, and gravel with brick, asphalt, coal, wood, and glass) underlain by approximately 40 to 55 feet of sand, clay, silt and/or gravel, with competent bedrock present approximately 60 to 100 feet below grade.

7. Laboratory analysis of the soil vapor samples collected during the RI identified 30 VOCs. The detected VOCs were generally associated with petroleum/gasoline compounds. Total petroleum related VOC concentrations ranged from 5.89 to 1,930  $\mu\text{g}/\text{m}^3$ . Chlorinated VOCs including tetrachloroethene (max. of 14.2  $\mu\text{g}/\text{m}^3$ ), trichloroethene (max. of 5.3  $\mu\text{g}/\text{m}^3$ ), TCA (max. of 461  $\mu\text{g}/\text{m}^3$ ) and carbon tetrachloride (12.6  $\mu\text{g}/\text{m}^3$ ) were present in one or more soil vapor samples. TCA was detected in two of seven samples at concentrations of 7.26 and 461  $\mu\text{g}/\text{m}^3$ , with only the 461  $\mu\text{g}/\text{m}^3$  sample SV-6 being in the range where monitoring (and potentially mitigation) are recommended based the New York State Department of Health (NYSDOH) Final Guidance on Soil Vapor Intrusion (October 2006). No NYSDOH Air Guideline Value (AGV) has been established for TCA. Sample SV-6 was collected at the eastern edge of the proposed building footprint as shown on Figure 4; this portion of the Site would be excavated below the water table for construction of building's pressure slab. TCE was detected in one of seven samples (SV-1) at a concentration of 5.3  $\mu\text{g}/\text{m}^3$ , slightly above its NYSDOH AGV of 5  $\mu\text{g}/\text{m}^3$  and within the range where monitoring (and potentially mitigation) may be recommended based on the NYSDOH Soil Vapor Intrusion guidance document. SV-1 was collected in the northern portion of the proposed building footprint as shown on Figure 4; this area would be excavated to below the water table for construction of the building's elevator pits and other foundation elements. No TCA or TCE was detected in the remaining samples. Acetone, typically a laboratory artifact, was also detected in all samples at a maximum concentration of 2,240  $\mu\text{g}/\text{m}^3$ . Overall, the detected concentrations appeared to be randomly distributed throughout the Site with no pattern indicative of a release or plume. Soil vapor laboratory analytical data is summarized in Table 1, with sampling locations and exceedances of NYSDOH background levels and AGVs shown on Figure 7.
8. Analytical results for soil/fill samples collected during the 2011 AKRF Phase II Investigation were compared to NYSDEC 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (USCOs) and Restricted - Commercial Use Soil Cleanup Objectives (CSCO). The solvent-related VOC, trichloroethene (TCE), was detected

in one of the 14 samples, but at a concentration well below its Unrestricted Use SCO. SVOCs, detected in all soil samples, were polycyclic aromatic hydrocarbons (PAHs), a class of compounds commonly found in urban fill (especially coal ash and other combustion byproducts) as well as some petroleum products, and included benzo(a)anthracene (detected in 7 of 14 samples, max. of 44 mg/Kg), benzo(a)pyrene (detected in 7 of 14 samples, max. of 71 mg/Kg), benzo(b)fluoranthene (detected in 11 of 14 samples, max. of 75 mg/Kg), benzo(k)fluoranthene (detected in 5 of 14 samples, max. of 22 mg/Kg), chrysene (detected in 7 of 14 samples, max. of 37 mg/Kg), and indeno(1,2,3-cd)pyrene (detected in 7 of 14 samples, max. of 71 mg/Kg). These PAHs were at levels exceeding the Restricted Residential Use SCOs, and four of these also exceeded Restricted Commercial SCOs. Several metals were detected in all samples, and of these, arsenic (max. of 21 mg/Kg) in two samples; barium (at 470 mg/Kg) in one sample; and copper (max. of 390 mg/Kg) in two samples also exceeded Restricted Residential and/or Commercial Use SCOs. Pesticides were detected in six samples and included 4,4'-DDD (max. of 32 ppb), 4,4'-DDE (max. of 473 ppb), 4,4'-DDT (max. of 946 ppb), and dieldrin (max. of 88 ppb) at concentrations exceeding Unrestricted Use SCOs. None of pesticides exceeded Commercial SCOs. PCBs (with 7.25 ppm) exceeded the Unrestricted Use SCO in one soil sample, but was well below the hazardous waste threshold of 50 ppm. Soil laboratory analytical data is summarized in Tables 2 through 5, with sampling locations and exceedances of USCOs and CSCOs shown on Figure 5.

9. Analytical results for the groundwater sample collected at 4 to 5 ftbg during the Phase II Investigation were compared to NYSDEC Class GA Ambient Water Quality Standards, which are intended for current or potential potable water supplies, even though groundwater in Manhattan is not a potable source. No VOCs were detected. The PAHs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were detected at concentrations slightly exceeding Class GA standards. Twenty metals were detected in the unfiltered (total) sample, 12 at levels exceeding Class GA standards. However, only seven metals were detected in the filtered (dissolved) sample and only iron,

magnesium, and sodium were at a level above Class GA Standards. The pesticide 4,4'-DDT was detected, but at a concentration well below the Class GA standard. No PCBs were detected. The SVOCs, metals and pesticides detected in the groundwater sample are likely attributable to suspended sediment (from the surrounding urban fill) entrained in the sample though some detected metals may be attributable to brackish water (given the proximity to the East River). The pesticide detection may be attributable to past on-site activities or to the fill material. Groundwater laboratory analytical data is summarized in Tables 6 through 8, with the sampling location and exceedances of Class GA standards shown on Figure 6.

### **Summary of Off-Site Environmental Findings**

1. An investigation conducted at the former Con Ed facility in 2010 consisted of the collection of soil and groundwater samples approximately 40 to 200 feet south of the Site's eastern boundary. Soil/fill samples collected during the off-site 2010 Con Ed investigation from the 6.5 to 24 ftbg intervals showed trace concentrations of petroleum-related VOCs and carbon disulfide below USCOs. Acetone was detected in one of the four soil samples slightly above its USCO. The SVOCs detected included PAHs and bis(2-ethylhexyl)phthalate, which is associated with plastics, and were present at concentrations below USCOs. Several metals (arsenic, barium, chromium, copper, lead, mercury and zinc) were detected in exceedance of USCOs. No exceedances of CSCOs were found. The findings appeared to be typical of urban fill rather than indicative of MGP wastes or other spills/releases and NYSDEC assigned a "C" classification to this site, i.e., no further remediation is required. For further detail, refer to the complete report in Appendix A.
2. Subsequent to the Con Ed investigation, AKRF conducted a 2010 investigation of the Energy Building site (located in the eastern portion of the former Con Ed facility), which consisted of the collection of soil and groundwater samples approximately 60 to 200 feet south of the Site's eastern boundary. Soil/fill samples collected during the Energy Building investigation from the 1 to 6 ftbg intervals showed trace concentrations of toluene and tetrachloroethene below USCOs. Several PAHs were

- detected at concentrations slightly above USCOs and/or CSCOs. Several metals (arsenic, barium, copper, lead, nickel and zinc) were detected in exceedance of USCOs, with barium also exceeding its CSCO. The findings appeared to be typical of urban fill rather than indicative of MGP wastes or other spills/releases. For further detail, refer to the complete report in Appendix A.
3. Groundwater samples collected during the off-site 2010 Con Ed investigation detected the VOC carbon disulfide in two of the three samples, but at concentrations well below the Class GA standards; no SVOCs were detected. Metals were detected in all three samples, with iron, magnesium, manganese, selenium and sodium exceeding Class GA standards, which was likely attributable to suspended sediments in the samples and the brackish nature of the water. Overall, the Con Ed investigation did not identify evidence of any significant impacts from the historical MGP operations, or other evidence of spills or releases and the New York State Department of Environmental Conservation (NYSDEC) assigned a “C” classification to this site, i.e., no further remediation is required. For further detail, refer to the complete report in Appendix A.
  4. Groundwater samples were collected from the Con Ed monitoring wells as part of AKRF’s 2010 Energy Building investigation. Similarly to Con Ed findings, laboratory analysis detected the VOC carbon disulfide in two of the three samples, but at concentrations well below the Class GA standards. Metals were detected in all three samples, with iron, magnesium, manganese, selenium and sodium exceeding Class GA standards, which was likely attributable to suspended sediments in the samples and the brackish nature of the water. Overall, the Energy Building investigation did not identify evidence of any significant impacts from the historical MGP operations, or other evidence of spills or releases. For further detail, refer to the complete report in Appendix A.

# REMEDIAL INVESTIGATION REPORT

## 1.0 SITE BACKGROUND

NYULMC is proposing to redevelop a 95,400-square foot site located on East 34th Street between First Avenue and FDR Drive in the Kips Bay section of Manhattan, New York (the Site). The Site has been assigned a Restrictive Declaration following CEQR review of the proposed redevelopment in 2011. Commercial use (a medical facility) is proposed for the Site. The RI work was performed on August 14, 2013. This RIR summarizes the nature and extent of contamination and provides sufficient information for establishment of remedial action objectives, evaluation of remedial action alternatives, and selection of a remedy that is protective of human health and the environment consistent with the use of the property pursuant to RCNY§ 43-1407(f).

### 1.1 SITE LOCATION AND CURRENT USAGE

The Site is located on East 34th Street between First Avenue and FDR Drive in the Kips Bay section of Manhattan, New York and is identified as Block 962, Lot 7501 on the New York City Tax Map. Figure 1 is a Site location map. The Site is approximately 95,400 square feet and is part of the NYU Langone Medical Center (NYULMC). The Site is bounded by East 34th Street to the north, the remainder of NYULMC to the south, the FDR Drive (and East River) to the east, and two Amtrak ventilation towers and First Avenue to the west. Currently, the Site contains three connected medical buildings (Rusk Institute, Perelman Building, and North Service Wing), parking and loading dock areas, and open space. One of the medical buildings, Rusk Institute (Rusk), includes the Auxiliary Pavilion, a greenhouse complex and several smaller structures. The Site was assigned CEQR Project No. 11BSA029M / 11DEPTECH015M during its review by NYCDEP, and was subsequently assigned OER Project No. 12RHAZ027M. Restrictive Declaration No. 2011000084677 was assigned to the Site on February 24, 2011.

A portion of the Consolidated Edison (Con Ed) East 32<sup>nd</sup> Street Station, New York State Voluntary Cleanup Program (VCP) Site V00543, is located in the southern portion of the Site. Site V00543 was investigated by Con Ed in 2010, as summarized in Section 2.2. No contamination associated with historical Manufactured Gas Plant (MGP) operation was

identified, and the New York State Department of Environmental Conservation (NYSDEC) assigned a “C” classification to this site, i.e., no further remediation is required.

## **1.2 PROPOSED REDEVELOPMENT PLAN**

The proposed redevelopment of the Site will consist of a new medical facility; layout is presented on Figure 3. The proposed building would have an approximately 53,000-square foot footprint and an approximately 900,000 gross square foot floor area. Previous investigations, summarized in Section 2.2, indicated that bedrock is present approximately 60 to 100 ftbg, and that groundwater is first encountered at approximately 2 to -2 feet MBD (4 to 8 ftbg), and is tidally influenced due to proximity to the East River. The current zoning is R8 (general residence). The proposed redevelopment will cover the entire footprint of the Site and will entail the following:

1. Demolition of all existing structures;
2. Construction of a new 19-story medical facility with a three-level mechanical penthouse but no basement level in the eastern portion of the Site as shown on Figure 3;
3. Construction of driveways and paved and landscaped open space on the remainder of the Site.

The proposed redevelopment would entail soil disturbance within the new building footprint to approximately 1 to 10 feet below grade (ftbg), i.e. elevation +5 to -4 feet Manhattan Borough Datum (MBD), for the building foundations including a pressure slab (used as a foundation and flood-proofing measure). Some deeper disturbance (up to approximately 25 ftbg) would be required for footings, elevator pits, fuel storage, etc. The proposed pressure slab bottom elevations are shown on Figure 8. The excavation plan is shown on Figure 9. Dewatering will likely be required for the deeper excavations. The new building’s ground floor will be occupied by a lobby, offices, utility rooms, storage rooms, and loading and parking areas, and would not include any acute care areas. Outside of the proposed building footprint, the proposed redevelopment would entail limited excavation (generally less than 2 ftbg) or filling for Site re-grading.

Approximately 60% of the Site will be covered by the new building, 25% will be covered with paved surfaces (driveways, walkways and a service yard), and the remaining 15% will be used as landscaped areas. The paved outdoor areas will be capped by 3 to 4-inch thick pavement underlain by a 1-inch bituminous base, 4 to 6 inches of concrete and 6 to 7 inches of imported sub-base (a total of 14 to 18 inches). All areas not capped by an impervious surface (e.g., concrete slab or pavement) would be capped with at least 2 feet of OER-certified imported uncontaminated soil.

Based on proposed excavation depths, it is estimated that approximately 13,000 cubic yards (approximately 19,500 tons) of soil would be excavated (and transported off-site for disposal) from beneath the area of new foundation slabs and Site cap and/or to replace existing fill with structurally appropriate fill as needed. Approximately 11,000 cubic yards (approximately 16,500 tons) of soil will be imported as backfill, with approximately 9,500 cubic yards used as fill for existing basements, structural fill and sub-base for paved areas, and approximately 1,500 cubic yards used as landscaping soil.

### **1.3 DESCRIPTION OF SURROUNDING PROPERTY**

The Site is bounded by the remainder of the NYULMC superblock to the south, FDR Drive (and East River) to the east, East 34th Street to the north, and two Amtrak ventilation towers and First Avenue to the west. The off-site portion of the NYULMC superblock is occupied by medical buildings. The Office of the Chief Medical Examiner (which is not part of NYULMC) is located in the southwestern corner of the superblock. Two ventilation towers for Amtrak tunnels running deep beneath the Site are located in the western portion of the superblock. The surrounding area is occupied by medical, office and residential buildings (many with ground-floor retail/commercial uses) and is zoned for commercial and residential uses. A heliport and ferry terminal are located east of the Site across FDR Drive. The NYULMC campus includes a hospital. Additional medical facilities are located to the south and elsewhere within a 500-foot radius of the Site.

## **2.0 SITE HISTORY**

### **2.1 PAST USES AND OWNERSHIP**

The Site was created by landfilling in the mid-1800s and early 1900s. Geotechnical borings in the vicinity of the Site (conducted in the 1950s and 1960s) encountered a 10 to 35-foot thick

layer of urban fill containing miscellaneous construction debris. Prior to construction of the current structures, the Site had a variety of uses including stores, a portion of Standard Gas Light Co. (the VCP Site described in more detail in Section 2.2) including two small aboveground tanks with unspecified contents, a portion of a coal yard, a lumber yard and a silk hose factory. The Standard Gas Light Co. facility was present in approximately 1886-1930, with part of it still owned by Con Ed in the 1940s.

Computerized NYC Buildings Department records identified a filling station at 596 First Avenue in 1934. However, historical Sanborn maps reviewed for the Phase I ESA (Appendix A) indicated that this filling station was actually historically located off the Kimmel Pavilion site but within the western portion of the superblock at 566 First Avenue (between East 32<sup>rd</sup> and East 33<sup>rd</sup> Streets), and that no filling station existed on-site in the past. The location of the historical filling station was recently excavated to the water table under AKRF oversight as part of the NYULMC Emergency Department expansion, and no evidence of contamination was noted.

NYU purchased the Site in approximately 1946, with most of the existing buildings constructed in the 1950s and 1960s. NYULMC uses at the Site included medical buildings, greenhouses, and parking and loading dock areas. Cleaning, maintenance, medical and laboratory chemicals were stored on-site, with no evidence of spills observed. The surrounding area had a long history of manufacturing and industrial activities.

Although historical uses of the Site, on-site use of laboratory chemicals, and historical uses in the surrounding area were identified as potential sources of contamination, a subsurface (Phase II) investigation conducted by AKRF in June 2011 identified no evidence of a spill or MGP-related wastes in the 0 to 6-ftbg interval beneath the Site. The investigation identified urban fill materials containing moderately elevated concentrations of metals, semi-volatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs). Moderately elevated concentrations of metals, SVOCs and the pesticide 4,4'-DDT were detected in the on-site groundwater sample.

## **2.2 HISTORICAL CON ED FACILITY**

According to a Site Characterization Report prepared for Con Ed (Tetra Tech EC, Inc., November 2010) and AKRF's October 2010 Phase I ESA, the southeastern corner of the Site and land to the south were occupied by a Standard Gas Light Co. manufactured gas storage facility in

approximately 1886-1891; this land was sold to other owners in portions in 1903 and 1930, and a portion of this facility was owned by Con Ed in 1943-1944. The on-site portion of the Standard Gas Light Co. facility consisted of two small aboveground tanks with unspecified contents and two boilers, which were shown on historical Sanborn maps in 1910-1929. Two additional small aboveground tanks with unspecified contents (shown in 1910-1929) and a large aboveground manufactured gas holder tank (shown in 1910) were located off Site, further south.

### 2.3 PREVIOUS ON-SITE INVESTIGATIONS

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

- *Phase I Environmental Site Assessment - NYULMC Kimmel and Energy Buildings, New York, New York, October 2010, prepared by AKRF, Inc (the Phase I ESA included the Site and the south-adjacent NYULMC Energy Building site).*
- *Sampling Protocol and Health and Safety Plan - NYULMC Kimmel Pavilion, New York, New York, November 2010, prepared by AKRF, Inc.*
- *Subsurface (Phase II) Investigation – NYULMC Kimmel Pavilion, New York, New York, June 2011, prepared by AKRF, Inc.*

The following work has been performed at the Site:

- Conducted Site inspections to identify AOCs and physical obstructions (e.g., structures or buildings);
- Installed 10 soil borings across the Site, and collected 14 soil samples for chemical analysis from the soil borings to evaluate soil quality;
- Installed one temporary groundwater monitoring well at the Site and collected one groundwater sample for chemical analysis to evaluate groundwater quality;

The previous investigations indicated the following:

1. The Site elevation varies from approximately 4.5 to 10 feet above the Manhattan Borough Datum (MBD), with the current grade in the area of the proposed building approximately 6 feet MBD.
2. Groundwater elevation ranges from approximately 2 to -2 feet MBD, i.e., approximately 4 to 8 ftbg within the proposed building footprint.
3. Based on topography, groundwater is anticipated to flow generally from west to east. Groundwater elevation and flow direction are likely tidally influenced due to the East River, approximately 200 feet to the east.

4. Depth to bedrock is approximately 60 to 100 feet.
5. The Site is located on land created by filling in the mid-1800s and early 1900s. The origin of this fill is unknown. Prior to construction of the current structures, the Site had various uses including stores, a portion of a manufactured gas holder facility including two small aboveground tanks with unspecified contents, and a silk hose factory. The manufactured gas facility was present in approximately 1886-1930, with the property still owned by Con Ed in the 1940s. Computerized NYC Buildings Department records for a filling station at 596 First Avenue in 1934. However, historical Sanborn maps reviewed for the Phase I ESA (Appendix A) indicated that this filling station was actually historically located off the Kimmel Pavilion site but within the western portion of the superblock at 566 First Avenue (between East 32<sup>rd</sup> and East 33<sup>rd</sup> Streets), and that no filling station existed on-site in the past. The location of the historical filling station was recently excavated to below the water table under AKRF oversight as part of the NYULMC Emergency Department expansion, and no evidence of contamination was noted. NYU purchased the Site in approximately 1946, with most of the existing buildings constructed in the 1950s and 1960s. Site uses at the time of the Phase I ESA included medical buildings, greenhouses, and parking and loading dock areas. Cleaning, maintenance, medical and laboratory chemicals were stored on-Site, with no evidence of spills observed. The surrounding area has a long history of manufacturing and industrial activities.
6. As indicated by past geotechnical investigations, the stratigraphy of the Site, from the surface down, consists of approximately 10 to 45 feet of urban fill materials (observed during the Phase II to contain sand, silt, and gravel with brick, asphalt, coal, wood, and glass) underlain by approximately 40 to 55 feet of sand, clay, silt and/or gravel, with competent bedrock present approximately 60 to 100 feet below grade.
7. Laboratory analysis of the soil vapor samples collected during the RI identified 30 VOCs. The detected VOCs were generally associated with petroleum/gasoline compounds. Total petroleum related VOC concentrations ranged from 5.89 to 1,930  $\mu\text{g}/\text{m}^3$ . Chlorinated VOCs including tetrachloroethene (max. of 14.2  $\mu\text{g}/\text{m}^3$ ),

trichloroethene (max. of  $5.3 \mu\text{g}/\text{m}^3$ ), TCA (max. of  $461 \mu\text{g}/\text{m}^3$ ) and carbon tetrachloride ( $12.6 \mu\text{g}/\text{m}^3$ ) were present in one or more soil vapor samples. TCA was detected in two of seven samples at concentrations of 7.26 and  $461 \mu\text{g}/\text{m}^3$ , with only the  $461 \mu\text{g}/\text{m}^3$  sample SV-6 being in the range where monitoring (and potentially mitigation) are recommended based the New York State Department of Health (NYSDOH) Final Guidance on Soil Vapor Intrusion (October 2006). No NYSDOH Air Guideline Value (AGV) has been established for TCA. Sample SV-6 was collected at the eastern edge of the proposed building footprint as shown on Figure 4; this portion of the Site would be excavated below the water table for construction of building's pressure slab. TCE was detected in one of seven samples (SV-1) at a concentration of  $5.3 \mu\text{g}/\text{m}^3$ , slightly above its NYSDOH AGV of  $5 \mu\text{g}/\text{m}^3$  and within the range where monitoring (and potentially mitigation) may be recommended based on the NYSDOH Soil Vapor Intrusion guidance document. SV-1 was collected in the northern portion of the proposed building footprint as shown on Figure 4; this area would be excavated to below the water table for construction of the building's elevator pits and other foundation elements. No TCA or TCE was detected in the remaining samples. Acetone, typically a laboratory artifact, was also detected in all samples at a maximum concentration of  $2,240 \mu\text{g}/\text{m}^3$ . Overall, the detected concentrations appeared to be randomly distributed throughout the Site with no pattern indicative of a release or plume. Soil vapor laboratory analytical data is summarized in Table 1, with sampling locations and exceedances of NYSDOH background levels and AGVs shown on Figure 7.

8. Analytical results for soil/fill samples collected from 1 to 6 ftbg during the 2011 AKRF Phase II Investigation were compared to NYSDEC 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (USCOs) and Restricted - Commercial Use Soil Cleanup Objectives (CSCO). The solvent-related VOC, trichloroethene (TCE), was detected in one of the 14 samples, but at a concentration well below its USCO and CSCO. SVOCs, detected in all soil samples, were polycyclic aromatic hydrocarbons (PAHs), a class of compounds commonly found in urban fill (especially coal ash and other combustion byproducts) as well as some petroleum products. Some

PAHs were at levels exceeding the USCOs and/or CSCOs, but total PAHs did not exceed 500 ppm. Metals were detected in all samples, with eight metals exceeding USCOs and three above CSCOs: arsenic in two samples; barium in one sample; and copper in two samples. Pesticides were detected in six samples with exceedances of the USCOs for 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and dieldrin. None exceeded CSCOs. PCBs were detected in 11 of the 14 samples. Only one sample, in the southeastern corner of the proposed building footprint, (with 7.25 ppm) exceeded the USCO and CSCO for PCBs, but was well below the hazardous waste threshold of 50 ppm. Based on the field observations and analytical data, the findings are most likely attributable to the observed fill materials (some of the metals may be naturally occurring) rather than MGP wastes or a spill. The pesticide detections may be attributable to past on-site activities or to urban fill materials. Soil laboratory analytical data is summarized in Tables 2 through 5, with sampling locations and exceedances of USCOs and CSCOs shown on Figure 5.

9. Analytical results for the groundwater sample collected at 4 to 5 ftbg during the Phase II Investigation were compared to NYSDEC Class GA Ambient Water Quality Standards, which are intended for current or potential potable water supplies, even though groundwater in Manhattan is not a potable source. No VOCs were detected. The PAHs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were detected at concentrations slightly exceeding Class GA standards. Twenty metals were detected in the unfiltered (total) sample, 12 at levels exceeding Class GA standards. However, only seven metals were detected in the filtered (dissolved) sample and only iron, magnesium, and sodium were at a level above Class GA Standards. The pesticide 4,4'-DDT was detected, but at a concentration well below the Class GA standard. No PCBs were detected. The SVOCs, metals and pesticides detected in the groundwater sample are likely attributable to suspended sediment (from the surrounding urban fill) entrained in the sample though some detected metals may be attributable to brackish water (given the proximity to the East River). The pesticide detection may be attributable to past on-site activities or to the fill material. Groundwater laboratory

analytical data is summarized in Tables 6 through 8, with the sampling location and exceedances of Class GA standards shown on Figure 6.

Digital (PDF) copies of the above referenced environmental work plans and reports are included as Appendix A.

#### **2.4 PREVIOUS OFF-SITE INVESTIGATIONS**

Due to the presence of Amtrak tunnels and numerous utility lines and structures beneath the Site, the sampling depths and locations were limited to those approved by Amtrak. Thus, the 2011 borings were only advanced to depths of 1 to 6 ftbg. Groundwater was encountered in only one boring during the June 2011 Phase II investigation. Therefore, the off-site Con Ed and Energy Building investigations are discussed below as a supplement to the on-site groundwater data. The Energy Building site is located south-adjacent to the Site and in the eastern portion of the former Con Ed site, which is shown on Figure 4. The footprint of the former manufactured gas facility, including the location of the largest gas holder, has been extensively developed with NYULMC buildings (most recently the Energy Building), with only historical fill materials but no MGP-related or other contamination noted during excavation.

The following environmental work plans and reports were developed for the nearby off-site Con Ed and Energy Building sites:

- Phase I Environmental Site Assessment - NYULMC Kimmel and Energy Buildings, New York, New York, October 2010, prepared by AKRF, Inc (the Phase I ESA included the Site and the south-adjacent NYULMC Energy Building site).
- Site Characterization Report - Consolidated Edison East 32nd Street Station Site, NYULMC, November 2010, prepared by Tetra Tech EC, Inc.
- Subsurface (Phase II) Investigation – NYULMC Energy Building, New York, New York, November 2010, prepared by AKRF, Inc.

The following work has been performed at the nearby off-site properties:

- As part of the off-site Con Ed investigation, installed 4 soil borings and collected 4 soil samples for chemical analysis approximately 40 to 200 feet south of the Site's eastern boundary;

- As part of the off-site Con Ed investigation, installed 3 groundwater monitoring wells and collected 3 groundwater samples for chemical analysis approximately 40 to 200 feet south of the Site's eastern boundary;
- As part of the off-site Energy Building investigation, installed six borings and collected 12 soil samples for chemical analysis approximately 60 to 200 feet south of the Site's eastern boundary; and
- As part of the off-site Energy Building investigation, collected 3 groundwater samples for chemical analysis from the three monitoring wells installed during the Con Ed investigation.

The previous investigations indicated the following:

1. Soil/fill samples collected during the off-site 2010 Con Ed investigation from the 6.5 to 24 ftbg intervals showed trace concentrations of petroleum-related VOCs and carbon disulfide below USCOs. Acetone was detected in one of the four soil samples slightly above its USCO. The SVOCs detected included PAHs and bis(2-ethylhexyl)phthalate, which is associated with plastics, and were present at concentrations below USCOs. Several metals (arsenic, barium, chromium, copper, lead, mercury and zinc) were detected in exceedance of USCOs. No exceedances of CSOCs were found. The findings appeared to be typical of urban fill rather than indicative of MGP wastes or other spills/releases and the New York State Department of Environmental Conservation (NYSDEC) assigned a "C" classification to this site, i.e., no further remediation is required. For further detail, refer to the complete report in Appendix A.
2. Groundwater samples collected during the off-site 2010 Con Ed investigation detected the VOC carbon disulfide in two of the three samples, but at concentrations well below the Class GA standards; no SVOCs were detected. Metals were detected in all three samples, with iron, magnesium, manganese, selenium and sodium exceeding Class GA standards, which was likely attributable to suspended sediments in the samples and the brackish nature of the water. Overall, the Con Ed investigation did not identify evidence of any significant impacts from the historical MGP operations, or other evidence of spills or releases and the New York State Department of Environmental Conservation (NYSDEC) assigned a "C" classification to this site, i.e., no further remediation is required. For further detail, refer to the complete report in Appendix A.

3. Soil/fill samples collected during the off-site Energy Building investigation from the 1 to 6 ftbg intervals showed trace concentrations of toluene and tetrachloroethene below USCOs. Several PAHs were detected at concentrations slightly above USCOs and/or CSCOs. Several metals (arsenic, barium, copper, lead, nickel and zinc) were detected in exceedance of USCOs, with barium also exceeding its CSCO. The findings appeared to be typical of urban fill rather than indicative of MGP wastes or other spills/releases. For further detail, refer to the complete report in Appendix A.

4. Groundwater samples were collected from the Con Ed monitoring wells as part of AKRF's 2010 Energy Building investigation. Similarly to Con Ed findings, laboratory analysis detected the VOC carbon disulfide in two of the three samples, but at concentrations well below the Class GA standards. Metals were detected in all three samples, with iron, magnesium, manganese, selenium and sodium exceeding Class GA standards, which was likely attributable to suspended sediments in the samples and the brackish nature of the water. Overall, the Energy Building investigation did not identify evidence of any significant impacts from the historical MGP operations, or other evidence of spills or releases. For further detail, refer to the complete report in Appendix A.

Digital (PDF) copies of the above referenced environmental work plans and reports are included as Appendix A.

## **2.5 SITE INSPECTION**

On August 6, 2010, Ms. Asya Bychkov of AKRF conducted a Site inspection as part of the Phase I ESA. At that time, the Site included three connected buildings, parking areas and loading docks, and open space. The buildings included: Rusk Institute (Rusk), a seven-story (plus mechanical penthouse and basement) medical building; the North Service Wing, a one-story medical building; and Perelman Building (Perelman), a nine-story (plus mechanical penthouse and basement) laboratory and medical building. Rusk included the Auxiliary Pavilion (a one-story occupational therapy building), a greenhouse complex, and several smaller structures. The locations of these buildings are shown on Figure 2. The buildings included cable-driven (electrical) elevators and were heated by Con Ed steam. Cleaning, maintenance, medical and laboratory chemicals were stored in the buildings.

A greenhouse complex and associated open space with asphalt and brick pavement and planting beds were located in the northwestern corner of the Site. The greenhouse complex, which was connected to the other Site buildings, consisted of two greenhouses and a one-story vacant building (Horizon House) connected to a one-story President's Suite. Another open space (a garden with stone tile pavement, planting beds and trees) was located east of Rusk between the Auxiliary Pavilion and the North Service Wing.

A parking lot with two-level hydraulic car lifts occupied the northeastern corner of the Site. Minor staining, likely associated with parked vehicles, was noted on the asphalt pavement. The car lifts were connected to a single hydraulic tank in the southern portion of the parking lot. This tank was noted to be leaking in 2010. The lifts and associated tanks were removed in 2012, and no evidence of the past leak was noted in 2013. The hydraulic lifts were reportedly installed after 1996 and thus were unlikely to utilize PCB-containing hydraulic fluid. A trailer used as office space was located in the southern portion of the parking lot. The trailer was removed by 2013.

A concrete and asphalt-paved loading dock was north-adjacent to the North Service Wing. Trash storage was noted in the loading dock. Surface staining, likely from vehicles, was observed. Some damaged pavement was observed, indicating a possibility of minor subsurface impact associated with the staining.

A one-story structure containing an emergency generator was located east-adjacent to the Auxiliary Pavilion. The generator room contained emergency generators and two 100-gallon aboveground diesel day tanks. The day tanks were supplied from a below-grade diesel tank located south-adjacent to the generator room. An access port and a fill port for this tank were observed. NYULMC staff indicated that the tank was not buried but located in a below-grade vault and was 5,000 gallons in size. No odors or staining were noted in the generator room. The one-story structure, generators and 100-gallon ASTs were removed by 2013.

A second emergency generator room was located on the Rusk roof on a steel and concrete platform. A spill cleanup kit was observed in this generator room, and no odors or staining were noted. A 275-gallon diesel aboveground storage tank (AST) was reportedly located on the roof, but was not viewed. The rooftop tank was supplied by an off-site 8,000-gallon diesel AST, which was located south-adjacent to the Site in 2010 but had been removed by 2013.

Prior to conducting the RI, Mr. Erik Nimlos of AKRF conducted an inspection of the proposed sampling locations to determine accessibility on August 14, 2013. At the time of the 2013 inspection, Rusk and Perelman were vacant, and the North Service Wing was scheduled to be vacated in late 2013. No new or additional concerns were noted.

## **2.6 AREAS OF CONCERN**

The AOCs identified for this Site based on previous studies include:

1. Urban fill materials beneath the Site;
2. Potential soil vapor contamination due to past and present Site uses; and
3. Potential soil vapor contamination due to historical uses in the surrounding area.

The Phase I ESA Report and other previous studies are presented in Appendix A. All AOCs pertain to the entire Site.

### **3.0 PROJECT MANAGEMENT**

#### **3.1 PROJECT ORGANIZATION**

The Qualified Environmental Profession (QEP) responsible for preparation of this RIR is Marcus Simons.

#### **3.2 HEALTH AND SAFETY**

All work described in this RIR was performed in full compliance with applicable laws and regulations, including Site and OSHA worker safety requirements and HAZWOPER requirements.

#### **3.3 MATERIALS MANAGEMENT**

All material encountered during the RI was managed in accordance with applicable laws and regulations.

## **4.0 REMEDIAL INVESTIGATION ACTIVITIES**

On behalf of NYULMC, AKRF performed the following scope of work in August 2013:

1. Conducted a Site inspection to identify AOCs and physical obstructions (e.g., structures or buildings);
2. Installed 7 soil vapor probes within the proposed building footprint and collected 7 samples for chemical analysis.

## **4.1 SAMPLE COLLECTION AND CHEMICAL ANALYSIS**

### **4.1.1 Soil Vapor Sampling**

A total of seven soil vapor samples were collected. The soil vapor probes were installed with a remote-access Geoprobe<sup>®</sup> unit. At each location, a monitoring point (consisting of tubing connected to an expendable drive point) was installed to approximately 3.5 feet below grade (i.e., approximately one foot or more above the water table). The tubing was then retracted approximately 12 inches to create a void. The boring was backfilled with clean sand to approximately one foot above the top of the drive point, and hydrated bentonite was used to seal the remaining gap around the tubing.

Samples were collected in six-liter Summa canisters which had been certified clean by the laboratory and analyzed using USEPA Method TO-15. The flow rate of both purging and sampling did not exceed 0.2 L/min. Sampling at each probe point occurred for two hours. Sample log sheets were maintained summarizing sample identification, date and time of sample collection, identity of samplers, sampling methods and devices, soil vapor purge volumes, volume of the soil vapor extracted, vacuum of canisters before and after the samples were collected, and chain of custody protocols.

As part of the vapor sampling, a tracer gas was used in accordance with NYSDOH protocols to serve as quality assurance/quality control (QA/QC) for verifying integrity of the soil vapor probe seal. Helium was used as the tracer gas and a box was used to keep it in contact with the probe during testing. A portable monitoring device was used to analyze a sample of soil vapor for the tracer prior to sampling. If the tracer sample results showed a significant presence of the tracer, the probe seals would have been adjusted to prevent infiltration. At the conclusion of the

sampling round, tracer monitoring was performed a second time to confirm the integrity of the probe seals. No helium was detected during monitoring, verifying an adequate seal for all probes.

Soil vapor sample collection data is reported in Table 1. Soil vapor sampling logs are included in Appendix B. Methodologies used for soil vapor assessment conform to the *NYSDOH Final Guidance on Soil Vapor Intrusion, October 2006*.

#### 4.1.2 Chemical Analysis

Chemical analytical work presented in this RIR has been performed in the following manner:

<b>Factor</b>	<b>Description</b>
Quality Assurance Officer	The chemical analytical quality assurance is directed by Axel Schwendt of AKRF, Inc.
Chemical Analytical Laboratory	Chemical analytical laboratory(s) used in the RI is NYS ELAP certified and were Alpha Analytical Laboratories of Mansfield, MA
Chemical Analytical Methods	Soil vapor analytical methods: <ul style="list-style-type: none"> <li>• VOCs by TO-15</li> </ul>

#### 4.1.3 Results of Chemical Analyses

Laboratory data for soil vapor are summarized in Table 1. Laboratory data deliverables for all samples evaluated in this RIR are provided in digital form in Appendix C.

## 5.0 ENVIRONMENTAL EVALUATION

### 5.1 SOIL VAPOR CHEMISTRY

Concentrations of VOCs detected in the soil vapor samples were compared to criteria published in the 2006 *NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, specifically to NYSDOH Indoor Air Guideline Values (AGVs) and to background levels of VOCs in indoor air presented in Appendix C of the Vapor Intrusion Guidance document, including: USEPA Building Assessment and Survey Evaluation (BASE) 90<sup>th</sup> percentile indoor air values; Upper Fence Limit indoor air values from “Table C-1. NYSDOH 2003: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes;” and 95<sup>th</sup> Percentile Indoor Air Values from “Table C-5. Health Effects Institute (HEI) 2005: Relationship of Indoor, Outdoor and Personal Air.” These comparison criteria all relate to indoor air rather than soil vapor, and were conservatively included for comparison purposes in the absence of soil vapor criteria.

Laboratory analysis of the soil vapor samples identified 30 VOCs, 27 of which exceeded the background indoor air values used for comparison in one or more samples. VOCs typically associated with petroleum/gasoline (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 2,2,4-trimethylpentane, 4-ethyltoluene, benzene, ethanol, ethylbenzene, heptane, isopropanol, n-hexane, xylenes, propylene, and toluene), where detected, were present at concentrations ranging from approximately 5.89 to 1,930 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). VOCs typically associated with solvents, refrigerants and/or laboratory uses [1,1,1-trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene, 2-butanone, carbon disulfide, chloroethane, chloroform, chloromethane, cis-1,2-dichloroethene, cyclohexane, dichlorodifluoromethane, ethanol, tetrachloroethene (PCE), trichloroethene (TCE), and trichlorotrifluoromethane], where detected, were present at concentrations ranging from approximately 4.52 to 461  $\mu\text{g}/\text{m}^3$ . The VOC 1,3-butadiene, generally associated with manufacturing (e.g., synthetic rubber and nylon production), where detected, was present at concentrations ranging from approximately 3.12 to 24.3  $\mu\text{g}/\text{m}^3$ . Acetone, which though sometimes associated with solvents or urban fill, is more commonly a laboratory artifact, was detected in all samples at concentrations ranging from approximately 316 to 2,240  $\mu\text{g}/\text{m}^3$ . Overall, the detected concentrations appeared to be randomly distributed throughout the Site with no pattern indicative of a release or plume.

Only one sample (SV-1) exceeded an AGV: TCE was detected in sample SV-1 at 5.37  $\mu\text{g}/\text{m}^3$ , above the AGV of 5  $\mu\text{g}/\text{m}^3$ ; TCE was not detected in any other soil vapor sample. Of note, the AGVs were developed for indoor air samples, and the soil vapor concentrations would not be expected to occur in air above a future building slab.

The June 2011 Phase II investigation identified TCE in one soil sample, SB-6 (1-2'), at an estimated concentration of 0.017 milligrams per kilogram (mg/kg). No other VOCs were detected in any of the soil or groundwater samples from the Phase II investigation. Boring SB-6 was located in the northeastern corner of the Site, nearest to soil vapor samples SV-2 and SV-3 (where no TCE was detected) and approximately 60 feet east of SV-1. The Vapor Intrusion Guidance Document provides "decision matrices" for four VOCs: carbon tetrachloride, PCE, 1,1,1-trichloroethane and TCE. Carbon tetrachloride was not detected in any of the soil vapor samples. Based on the detected concentrations of 1,1,1-trichloroethane (detected in two samples at concentrations of 7.26 and 461  $\mu\text{g}/\text{m}^3$ ), TCE (detected in one sample at a concentration of 5.37  $\mu\text{g}/\text{m}^3$ ) and PCE (detected in four samples at concentrations ranging from 8.68 to 14.2  $\mu\text{g}/\text{m}^3$ ), the decision matrices recommended monitoring or mitigation, depending on corresponding indoor air levels.

Data collected during the RI is sufficient to delineate the distribution of contaminants in soil vapor at the Site. A summary table of data for chemical analyses performed on soil vapor samples is included in Table 1.

Figure 4 shows the locations of the soil vapor samples.

## **5.2 PRIOR ACTIVITY**

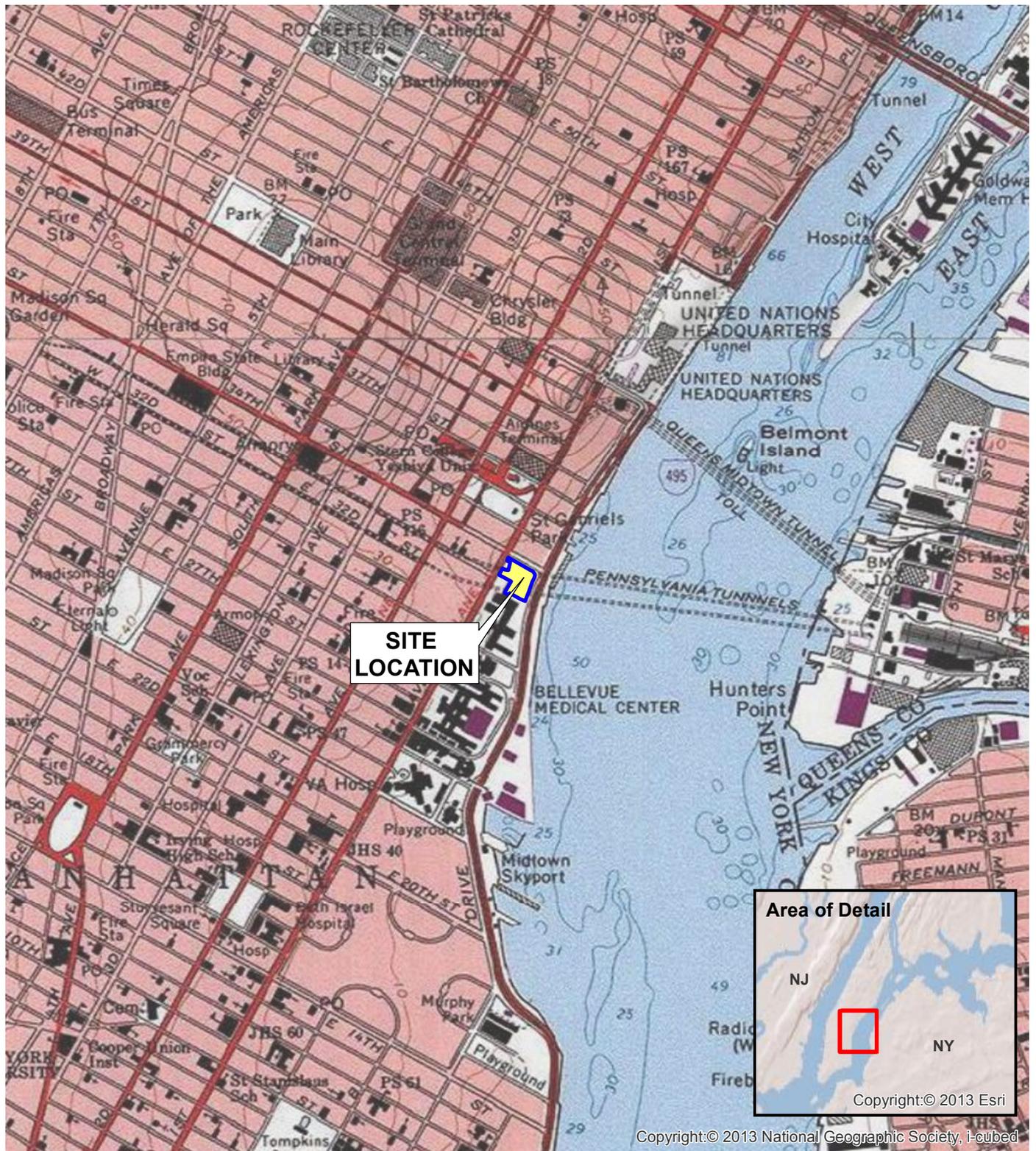
Based on an evaluation of the data and information from the RIR, disposal of significant amounts of hazardous waste is not suspected at this Site.

## **5.3 IMPEDIMENTS TO REMEDIAL ACTION**

There are no known impediments to remedial action at this Site.

## **Figures**

© 2012 AKRF, Inc. Environmental Consultants O:\Projects\11243 - NYU LANGONE MEDICAL CENTER-KIMMEL\Maps\NYU Kimmel Fig 1 loc map.mxd



**SOURCE**  
 USGS 7.5 Minute Topographic Map BROOKLYN Quad 1995



**NYU LANGONE MEDICAL CENTER  
 KIMMEL PAVILION  
 NEW YORK, NEW YORK**



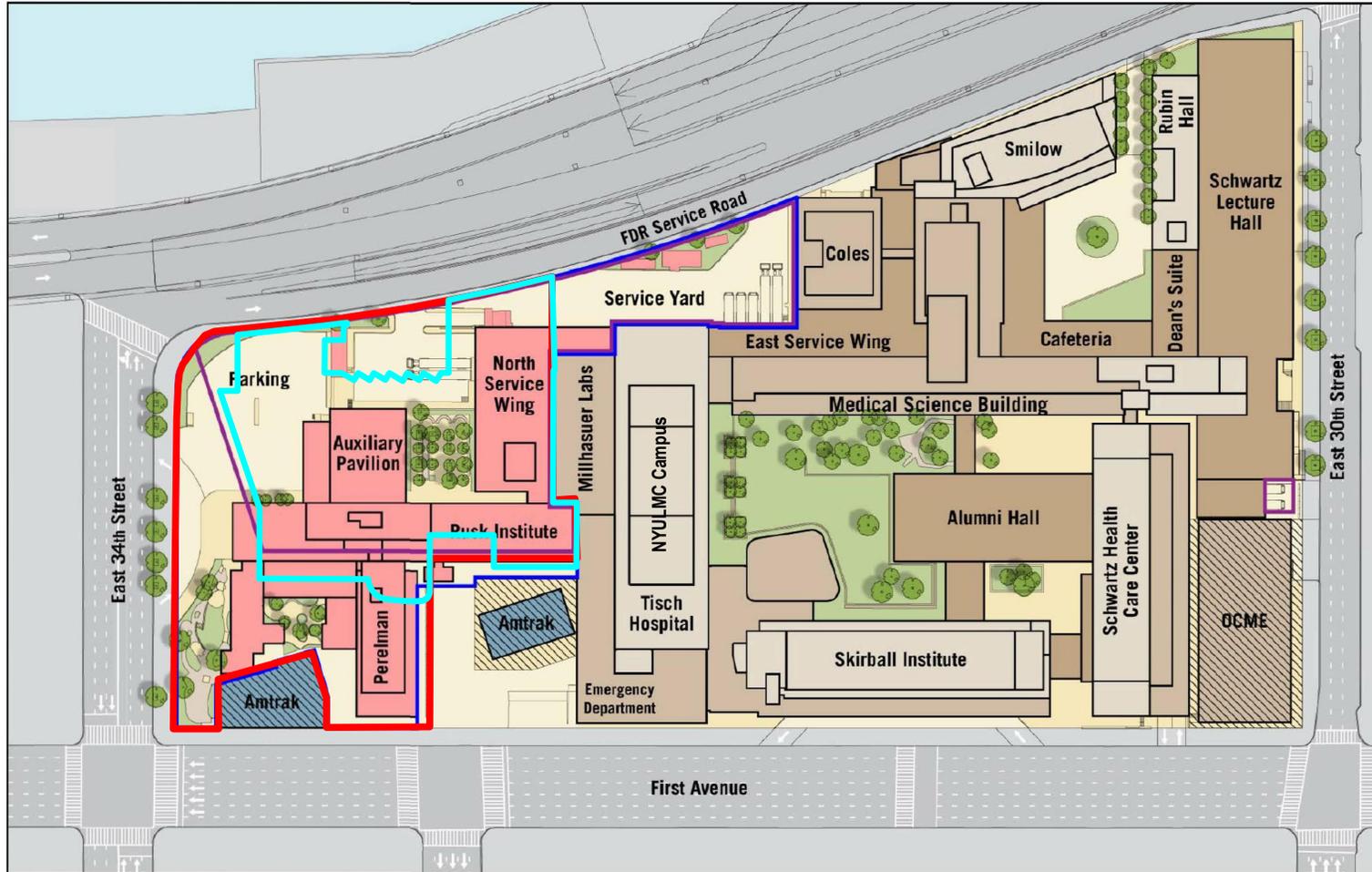
**Environmental Consultants**  
 440 Park Avenue South, New York, N.Y. 10016

DATE  
**10/4/2013**

PROJECT No.  
**11243**

FIGURE  
**1**

**SITE MAP**



**LEGEND**

- PROJECT SITE BOUNDARY
- APPROXIMATE NEW BUILDING OUTLINE



**NYU LANGONE MEDICAL CENTER  
KIMMEL PAVILION  
NEW YORK, NEW YORK**

**EXISTING CONDITIONS**



**Environmental Consultants**  
440 Park Avenue South, New York, N.Y. 10016

DATE  
**10.9.2013**

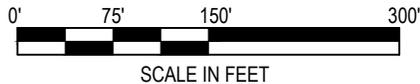
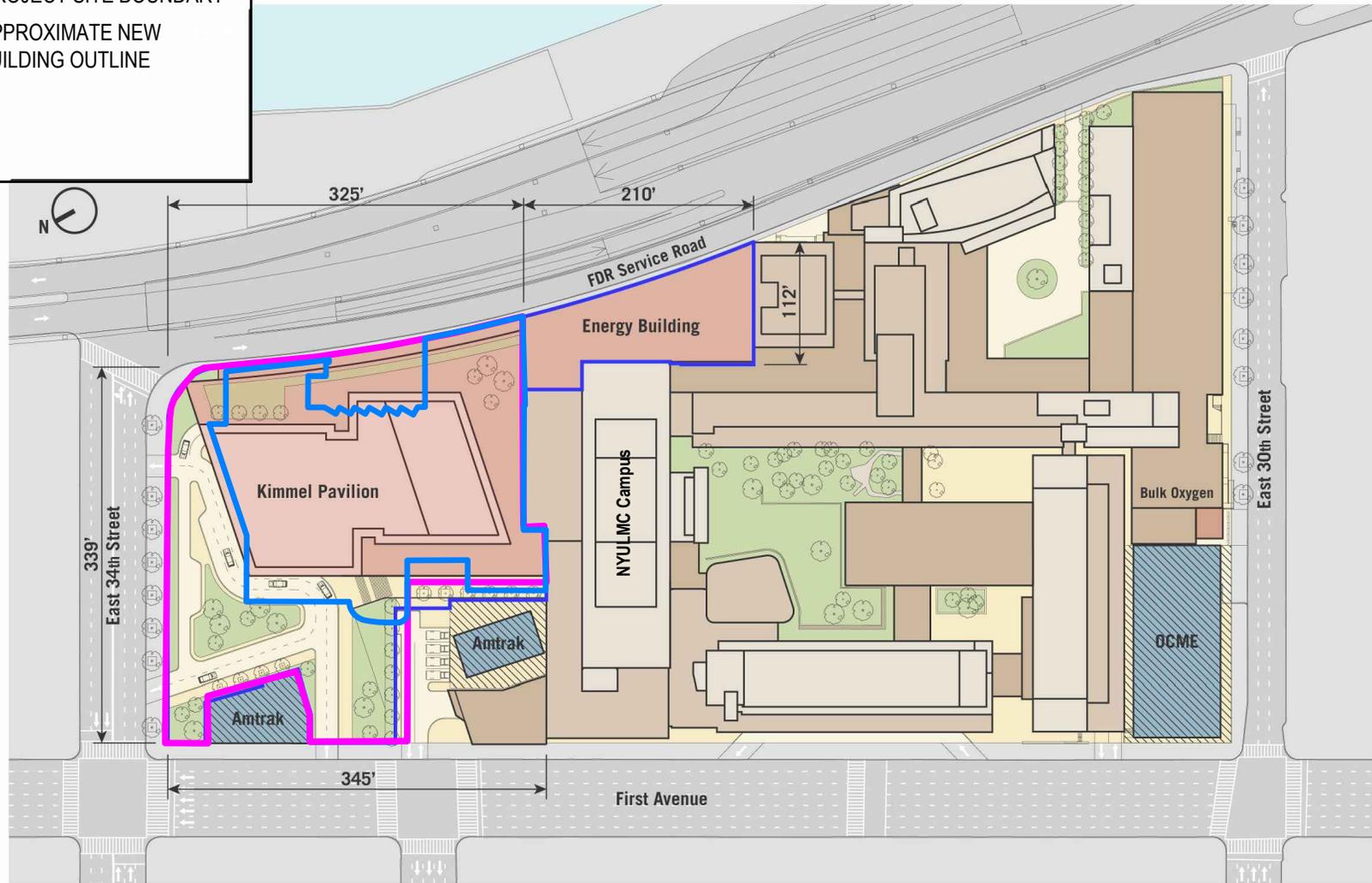
PROJECT No.  
**11243**

SCALE  
**as shown**

FIGURE  
**2**

**LEGEND**

- PROJECT SITE BOUNDARY
- APPROXIMATE NEW BUILDING OUTLINE



**NYU LANGONE MEDICAL CENTER  
KIMMEL PAVILION  
NEW YORK, NEW YORK**

**PROPOSED REDEVELOPMENT  
PLAN**



**Environmental Consultants**  
440 Park Avenue South, New York, N.Y. 10016

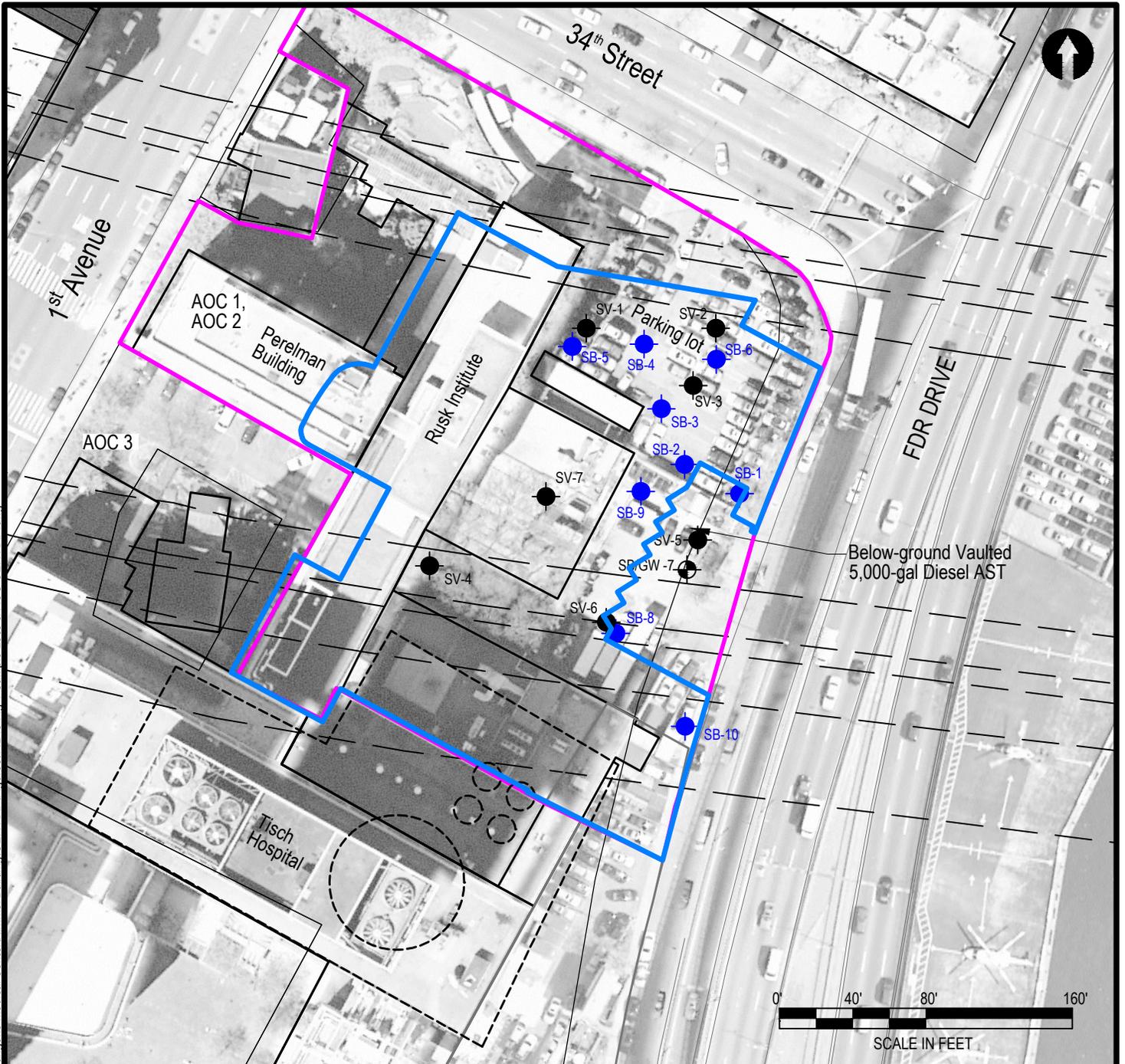
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**10.9.2013**

PROJECT No.  
**11243**

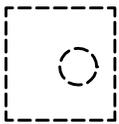
SCALE  
**as shown**

FIGURE  
**3**

© 2010 AKRF, Inc. Environmental Consultants. M:\AKRF Project Files\11243 - NYU Langone Medical Center\Kimmel Building\Figures\11243\_Fig 2\_Kimmel program project\_kimmel\_bldg.dwg



**LEGEND:**



APPROXIMATE LOCATION OF FORMER STANDARD GAS & LIGHT CO. FACILITY AND TANKS

AOC 1 Historic Fill beneath site  
 AOC 2 Past/Present site uses  
 AOC 3 Historic call off-site uses



PROJECT SITE BOUNDARY  
 AMTRAK RAILROAD TUNNELS  
 AOC AREA OF CONCERN  
 APPROXIMATE NEW BUILDING OUTLINE



SOIL BORING LOCATION\*



SOIL/WATER BORING LOCATION\*



SOIL VAPOR PROBES

\*SUBSURFACE (PHASE II) INVESTIGATION, JUNE 2011, AKRF

**NYU LANGONE MEDICAL CENTER  
 KIMMEL PAVILION  
 NEW YORK, NEW YORK**

**SAMPLE LOCATION AND  
 AREA OF CONCERN MAP**



**Environmental Consultants**  
 440 Park Avenue South, New York, N.Y. 10016

DATE  
**10.9.2013**

PROJECT No.  
**11243**

SCALE  
**as shown**

FIGURE  
**4**



Client ID	SB-5 (1-2')
Date Sampled	5/15/2011
mg/kg	
SVOCs	
Benzo(a)anthracene	1.7
Benzo(a)pyrene	1.4
Benzo(b)fluoranthene	2
Benzo(k)fluoranthene	0.77
Chrysene	1.7
Dibenzo(a,h)anthracene	0.21
Indeno(1,2,3-cd)Pyrene	0.87
Metals	
Arsenic	5.2
Barium	110
Chromium	19
Copper	50
Iron	15,000
Lead	150
Mercury	0.66
Nickel	28
Zinc	130
PCBs	
Aroclor 1254	0.0983
Total PCBs	0.0983
Pesticides	
Dilution	20
4,4'-DDD	0.0389 U
4,4'-DDE	0.0389 U
4,4'-DDT	0.0729 U
Dieldrin	0.0243 U

Client ID	SB-4 (1-2')
Date Sampled	5/15/2011
mg/kg	
SVOCs	
Benzo(a)anthracene	1.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1.3
Benzo(k)fluoranthene	0.46
Chrysene	1.1
Dibenzo(a,h)anthracene	0.15
Indeno(1,2,3-cd)Pyrene	0.63
Metals	
Arsenic	4
Barium	88
Chromium	22
Copper	39
Iron	15,000
Lead	120
Mercury	0.4
Nickel	58
Zinc	80
PCBs	
Aroclor 1254	0.0475
Total PCBs	0.0475
Pesticides	
Dilution	20
4,4'-DDD	0.0368 U
4,4'-DDE	0.0368 U
4,4'-DDT	0.069 U
Dieldrin	0.023 U

Client ID	SB-6 (1-2')
Date Sampled	5/15/2011
mg/kg	
SVOCs	
Benzo(a)anthracene	0.76
Benzo(a)pyrene	0.77
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.39 J
Chrysene	0.8
Dibenzo(a,h)anthracene	0.58 U
Indeno(1,2,3-cd)Pyrene	0.52 J
Metals	
Arsenic	6
Barium	240
Chromium	11
Copper	43
Iron	14,000
Lead	110
Mercury	0.33
Nickel	14
Zinc	120
PCBs	
Aroclor 1254	0.0145 J
Total PCBs	0.0145
Pesticides	
Dilution	20
4,4'-DDD	0.0378 U
4,4'-DDE	0.0378 U
4,4'-DDT	0.0709 U
Dieldrin	0.0236 U

Client ID	SB-2 (2-3')
Date Sampled	5/14/2011
mg/kg	
SVOCs	
Benzo(a)anthracene	0.29
Benzo(a)pyrene	0.38
Benzo(b)fluoranthene	0.47
Benzo(k)fluoranthene	0.19
Chrysene	0.3
Dibenzo(a,h)anthracene	0.076 J
Indeno(1,2,3-cd)Pyrene	0.27
Metals	
Arsenic	20
Barium	470
Chromium	29
Copper	390
Iron	37,000
Lead	770
Mercury	0.8
Nickel	42
Zinc	730
PCBs	
Aroclor 1254	0.0376 J
Total PCBs	0.0376
Pesticides	
Dilution	10
4,4'-DDD	0.00853 J
4,4'-DDE	0.00946 J
4,4'-DDT	0.025 J
Dieldrin	0.0117 U

Client ID	SB-1 (1-2')	SB-1 (5-6')
Date Sampled	5/14/2011	5/14/2011
mg/kg		
SVOCs		
Benzo(a)anthracene	0.13 U	0.14
Benzo(a)pyrene	0.18 U	0.1 J
Benzo(b)fluoranthene	0.13 U	0.15
Benzo(k)fluoranthene	0.13 U	0.058 J
Chrysene	0.13 U	0.14
Dibenzo(a,h)anthracene	0.13 U	0.12 U
Indeno(1,2,3-cd)Pyrene	0.18 U	0.063 J
Metals		
Arsenic	3.7	11
Barium	43	120
Chromium	24	15
Copper	16	37
Iron	17,000	14,000
Lead	30	84
Mercury	0.06 J	0.23
Nickel	270	49
Zinc	38	130
PCBs		
Aroclor 1254	0.00812 J	0.0451
Total PCBs	0.00812	0.07
Pesticides		
Dilution	1	10
4,4'-DDD	0.00204 U	0.0184 U
4,4'-DDE	0.00365	0.0184 U
4,4'-DDT	0.00626	0.0154 J
Dieldrin	0.00296	0.0115 U

Client ID	SB-3 (1-2')	SB-3 (4-5')
Date Sampled	5/14/2011	5/14/2011
mg/kg		
SVOCs		
Benzo(a)anthracene	0.79	0.72
Benzo(a)pyrene	0.82	0.79
Benzo(b)fluoranthene	1	1
Benzo(k)fluoranthene	0.39	0.38
Chrysene	0.78	0.78
Dibenzo(a,h)anthracene	0.13	0.13
Indeno(1,2,3-cd)Pyrene	0.56	0.54
Metals		
Arsenic	6.4	10
Barium	140	98
Chromium	20	66
Copper	58	91
Iron	16,000	13,000
Lead	240	370
Mercury	1.3	1.4
Nickel	17	14
Zinc	180	210
PCBs		
Aroclor 1254	0.05	0.0217 J
Total PCBs	0.05	0.0217
Pesticides		
Dilution	20	50
4,4'-DDD	0.0305 J	0.0944 U
4,4'-DDE	0.0342 U	0.0944 U
4,4'-DDT	0.0641 U	0.177 U
Dieldrin	0.0214 U	0.059 U

Client ID	SB-9 (1-2')	SB-9 (3-4')
Date Sampled	5/20/2011	5/20/2011
mg/kg		
SVOCs		
Benzo(a)anthracene	5.2	44
Benzo(a)pyrene	8.7	71
Benzo(b)fluoranthene	9.2	75
Benzo(k)fluoranthene	3.6	22
Chrysene	5.4	37
Dibenzo(a,h)anthracene	1.5	13
Indeno(1,2,3-cd)Pyrene	6.3	34
Metals		
Arsenic	5.2	21
Barium	61	170
Chromium	9.5	12
Copper	36	84
Iron	12,000	30,000
Lead	82	62
Mercury	0.75	0.05 J
Nickel	13	36
Zinc	63	40
PCBs		
Aroclor 1254	0.0372 U	0.0412 U
Total PCBs	ND	ND
Pesticides		
Dilution	20	50
4,4'-DDD	0.0422	0.0981 U
4,4'-DDE	0.473	0.0981 U
4,4'-DDT	0.946	0.184 U
Dieldrin	0.0216 U	0.0613 U

Client ID	SB-8 (1-2')
Date Sampled	5/20/2011
mg/kg	
SVOCs	
Benzo(a)anthracene	4.4
Benzo(a)pyrene	4.2
Benzo(b)fluoranthene	5.2
Benzo(k)fluoranthene	2.2
Chrysene	4.2
Dibenzo(a,h)anthracene	0.67
Indeno(1,2,3-cd)Pyrene	2.5
Metals	
Arsenic	4.4
Barium	130
Chromium	17
Copper	57
Iron	13,000
Lead	200
Mercury	0.4
Nickel	13
Zinc	150
PCBs	
Aroclor 1254	0.0548
Total PCBs	0.0548
Pesticides	
Dilution	50
4,4'-DDD	0.0883 U
4,4'-DDE	0.0883 U
4,4'-DDT	0.166 U
Dieldrin	0.0552 U

Client ID	SB-10 (1-2')
Date Sampled	5/20/2011
mg/kg	
SVOCs	
Benzo(a)anthracene	0.31
Benzo(a)pyrene	0.36
Benzo(b)fluoranthene	0.44
Benzo(k)fluoranthene	0.19
Chrysene	0.35
Dibenzo(a,h)anthracene	0.058 J
Indeno(1,2,3-cd)Pyrene	0.26
Metals	
Arsenic	8.4
Barium	110
Chromium	19
Copper	39
Iron	16,000
Lead	180
Mercury	0.4
Nickel	20
Zinc	140
PCBs	
Aroclor 1254	7.25
Total PCBs	7.25
Pesticides	
Dilution	10
4,4'-DDD	0.0188 U
4,4'-DDE	0.00548 J
4,4'-DDT	0.024 J
Dieldrin	0.00627 J

Client ID	SB-7 (1-2')	SB-7 (4-5')
Date Sampled	5/20/2011	5/20/2011
mg/kg		
SVOCs		
Benzo(a)anthracene	2.2	2.5
Benzo(a)pyrene	3.1	4.1
Benzo(b)fluoranthene	3.2	4.5
Benzo(k)fluoranthene	1.4	1.7
Chrysene	2.1	2.4
Dibenzo(a,h)anthracene	0.48	0.76
Indeno(1,2,3-cd)Pyrene	1.8	3.2
Metals		
Arsenic	9.7	8.4
Barium	110	130
Chromium	14	18
Copper	280	59
Iron	18,000	21,000
Lead	350	530
Mercury	0.8	0.75
Nickel	14	17
Zinc	140	130
PCBs		
Aroclor 1254	0.0378 U	0.0122 J
Total PCBs	ND	0.0122
Pesticides		
Dilution	10	20
4,4'-DDD	0.0178 U	0.0395 U
4,4'-DDE	0.0178 U	0.0395 U
4,4'-DDT	0.0333 U	0.074 U
Dieldrin	0.0111 U	0.0247 U

**LEGEND:**

- SB-9 SOIL BORING LOCATION\*
- SB/GW-7 SOIL/WATER BORING LOCATION\*
- PROJECT SITE BOUNDARY
- AMTRAK RAILROAD TUNNELS
- APPROXIMATE NEW BUILDING OUTLINE

\*SUBSURFACE (PHASE II) INVESTIGATION, JUNE 2011, AKRF

NYU LANGONE MEDICAL CENTER KIMMEL PAVILION  
New York, New York



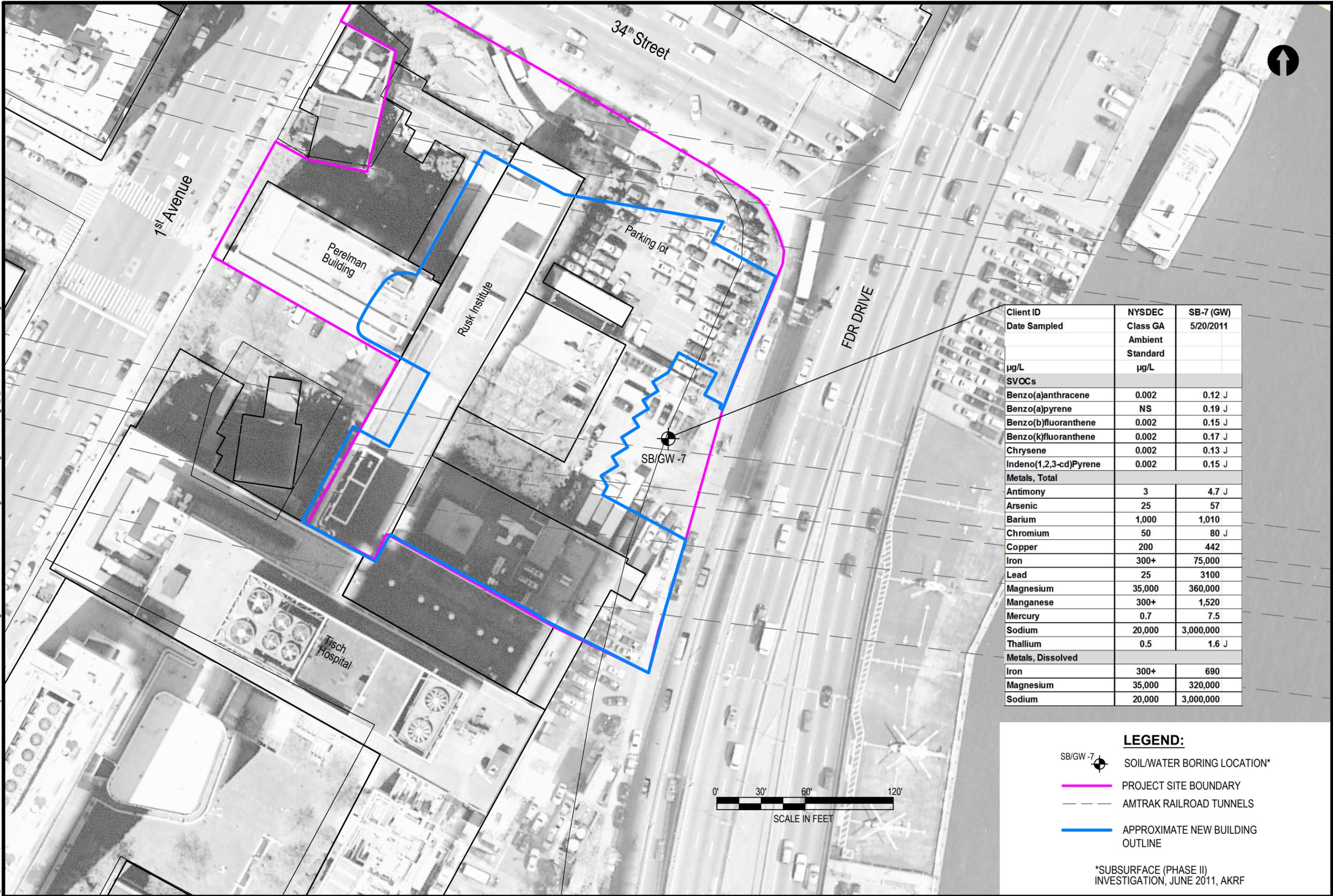
MAP OF SOIL CHEMISTRY RESULTS

DATE  
10.9.2013

PROJECT NO.  
11243

SCALE  
as shown

FIGURE  
5



Client ID	NYSDEC	SB-7 (GW)
Date Sampled	Class GA	5/20/2011
	Ambient	
	Standard	
µg/L	µg/L	
<b>SVOCs</b>		
Benzo(a)anthracene	0.002	0.12 J
Benzo(a)pyrene	NS	0.19 J
Benzo(b)fluoranthene	0.002	0.15 J
Benzo(k)fluoranthene	0.002	0.17 J
Chrysene	0.002	0.13 J
Indeno(1,2,3-cd)Pyrene	0.002	0.15 J
<b>Metals, Total</b>		
Antimony	3	4.7 J
Arsenic	25	57
Barium	1,000	1,010
Chromium	50	80 J
Copper	200	442
Iron	300+	75,000
Lead	25	3100
Magnesium	35,000	360,000
Manganese	300+	1,520
Mercury	0.7	7.5
Sodium	20,000	3,000,000
Thallium	0.5	1.6 J
<b>Metals, Dissolved</b>		
Iron	300+	690
Magnesium	35,000	320,000
Sodium	20,000	3,000,000

**LEGEND:**

- SB/GW-7 SOIL/WATER BORING LOCATION\*
- PROJECT SITE BOUNDARY
- AMTRAK RAILROAD TUNNELS
- APPROXIMATE NEW BUILDING OUTLINE

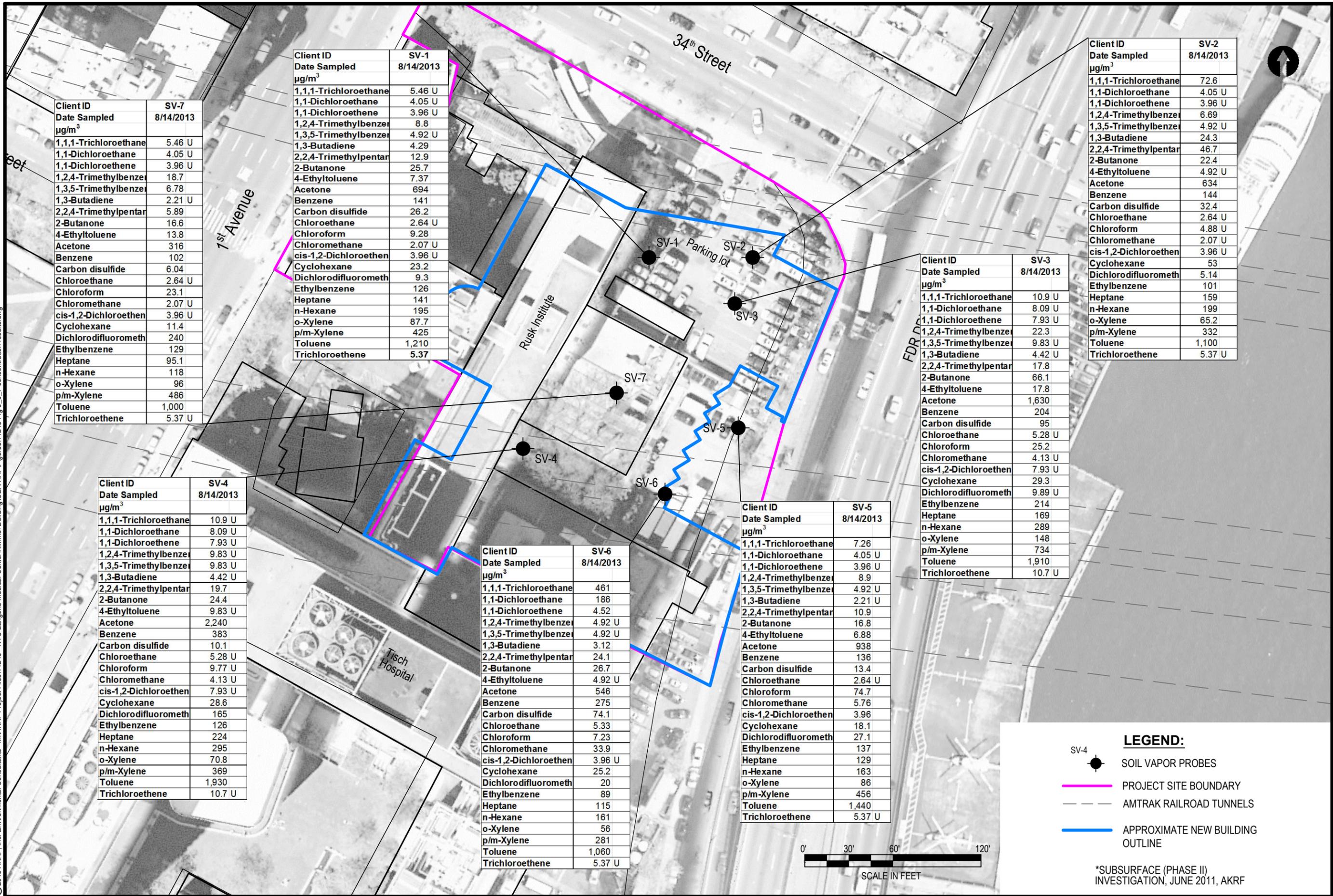
\*SUBSURFACE (PHASE II) INVESTIGATION, JUNE 2011, AKRF

DATE  
**10.9.2013**

PROJECT NO.  
**11243**

SCALE  
**as shown**

FIGURE  
**6**



Client ID	SV-7
Date Sampled	8/14/2013
µg/m <sup>3</sup>	
1,1,1-Trichloroethane	5.46 U
1,1-Dichloroethane	4.05 U
1,1-Dichloroethene	3.96 U
1,2,4-Trimethylbenzene	18.7
1,3,5-Trimethylbenzene	6.78
1,3-Butadiene	2.21 U
2,2,4-Trimethylpentane	5.89
2-Butanone	16.6
4-Ethyltoluene	13.8
Acetone	316
Benzene	102
Carbon disulfide	6.04
Chloroethane	2.64 U
Chloroform	23.1
Chloromethane	2.07 U
cis-1,2-Dichloroethene	3.96 U
Cyclohexane	11.4
Dichlorodifluoromethane	240
Ethylbenzene	129
Heptane	95.1
n-Hexane	118
o-Xylene	96
p/m-Xylene	486
Toluene	1,000
Trichloroethene	5.37 U

Client ID	SV-1
Date Sampled	8/14/2013
µg/m <sup>3</sup>	
1,1,1-Trichloroethane	5.46 U
1,1-Dichloroethane	4.05 U
1,1-Dichloroethene	3.96 U
1,2,4-Trimethylbenzene	8.8
1,3,5-Trimethylbenzene	4.92 U
1,3-Butadiene	4.29
2,2,4-Trimethylpentane	12.9
2-Butanone	25.7
4-Ethyltoluene	7.37
Acetone	694
Benzene	141
Carbon disulfide	26.2
Chloroethane	2.64 U
Chloroform	9.28
Chloromethane	2.07 U
cis-1,2-Dichloroethene	3.96 U
Cyclohexane	23.2
Dichlorodifluoromethane	9.3
Ethylbenzene	126
Heptane	141
n-Hexane	195
o-Xylene	87.7
p/m-Xylene	425
Toluene	1,210
Trichloroethene	5.37

Client ID	SV-2
Date Sampled	8/14/2013
µg/m <sup>3</sup>	
1,1,1-Trichloroethane	72.6
1,1-Dichloroethane	4.05 U
1,1-Dichloroethene	3.96 U
1,2,4-Trimethylbenzene	6.69
1,3,5-Trimethylbenzene	4.92 U
1,3-Butadiene	24.3
2,2,4-Trimethylpentane	46.7
2-Butanone	22.4
4-Ethyltoluene	4.92 U
Acetone	634
Benzene	144
Carbon disulfide	32.4
Chloroethane	2.64 U
Chloroform	4.88 U
Chloromethane	2.07 U
cis-1,2-Dichloroethene	3.96 U
Cyclohexane	53
Dichlorodifluoromethane	5.14
Ethylbenzene	101
Heptane	159
n-Hexane	199
o-Xylene	65.2
p/m-Xylene	332
Toluene	1,100
Trichloroethene	5.37 U

Client ID	SV-3
Date Sampled	8/14/2013
µg/m <sup>3</sup>	
1,1,1-Trichloroethane	10.9 U
1,1-Dichloroethane	8.09 U
1,1-Dichloroethene	7.93 U
1,2,4-Trimethylbenzene	22.3
1,3,5-Trimethylbenzene	9.83 U
1,3-Butadiene	4.42 U
2,2,4-Trimethylpentane	17.8
2-Butanone	66.1
4-Ethyltoluene	17.8
Acetone	1,630
Benzene	204
Carbon disulfide	95
Chloroethane	5.28 U
Chloroform	25.2
Chloromethane	4.13 U
cis-1,2-Dichloroethene	7.93 U
Cyclohexane	29.3
Dichlorodifluoromethane	9.89 U
Ethylbenzene	214
Heptane	169
n-Hexane	289
o-Xylene	148
p/m-Xylene	734
Toluene	1,910
Trichloroethene	10.7 U

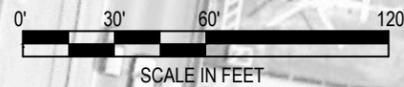
Client ID	SV-4
Date Sampled	8/14/2013
µg/m <sup>3</sup>	
1,1,1-Trichloroethane	10.9 U
1,1-Dichloroethane	8.09 U
1,1-Dichloroethene	7.93 U
1,2,4-Trimethylbenzene	9.83 U
1,3,5-Trimethylbenzene	9.83 U
1,3-Butadiene	4.42 U
2,2,4-Trimethylpentane	19.7
2-Butanone	24.4
4-Ethyltoluene	9.83 U
Acetone	2,240
Benzene	383
Carbon disulfide	10.1
Chloroethane	5.28 U
Chloroform	9.77 U
Chloromethane	4.13 U
cis-1,2-Dichloroethene	7.93 U
Cyclohexane	28.6
Dichlorodifluoromethane	165
Ethylbenzene	126
Heptane	224
n-Hexane	295
o-Xylene	70.8
p/m-Xylene	369
Toluene	1,930
Trichloroethene	10.7 U

Client ID	SV-6
Date Sampled	8/14/2013
µg/m <sup>3</sup>	
1,1,1-Trichloroethane	461
1,1-Dichloroethane	186
1,1-Dichloroethene	4.52
1,2,4-Trimethylbenzene	4.92 U
1,3,5-Trimethylbenzene	4.92 U
1,3-Butadiene	3.12
2,2,4-Trimethylpentane	24.1
2-Butanone	26.7
4-Ethyltoluene	4.92 U
Acetone	546
Benzene	275
Carbon disulfide	74.1
Chloroethane	5.33
Chloroform	7.23
Chloromethane	33.9
cis-1,2-Dichloroethene	3.96 U
Cyclohexane	25.2
Dichlorodifluoromethane	20
Ethylbenzene	89
Heptane	115
n-Hexane	161
o-Xylene	56
p/m-Xylene	281
Toluene	1,060
Trichloroethene	5.37 U

Client ID	SV-5
Date Sampled	8/14/2013
µg/m <sup>3</sup>	
1,1,1-Trichloroethane	7.26
1,1-Dichloroethane	4.05 U
1,1-Dichloroethene	3.96 U
1,2,4-Trimethylbenzene	8.9
1,3,5-Trimethylbenzene	4.92 U
1,3-Butadiene	2.21 U
2,2,4-Trimethylpentane	10.9
2-Butanone	16.8
4-Ethyltoluene	6.88
Acetone	938
Benzene	136
Carbon disulfide	13.4
Chloroethane	2.64 U
Chloroform	74.7
Chloromethane	5.76
cis-1,2-Dichloroethene	3.96
Cyclohexane	18.1
Dichlorodifluoromethane	27.1
Ethylbenzene	137
Heptane	129
n-Hexane	163
o-Xylene	86
p/m-Xylene	456
Toluene	1,440
Trichloroethene	5.37 U

**LEGEND:**

- SV-4 ● SOIL VAPOR PROBES
- PROJECT SITE BOUNDARY
- - - AMTRAK RAILROAD TUNNELS
- APPROXIMATE NEW BUILDING OUTLINE



\*SUBSURFACE (PHASE II) INVESTIGATION, JUNE 2011, AKRF

**NYU LANGONE MEDICAL CENTER KIMMEL PAVILION**  
New York, New York

**MAP OF SOIL VAPOR CHEMISTRY RESULTS**

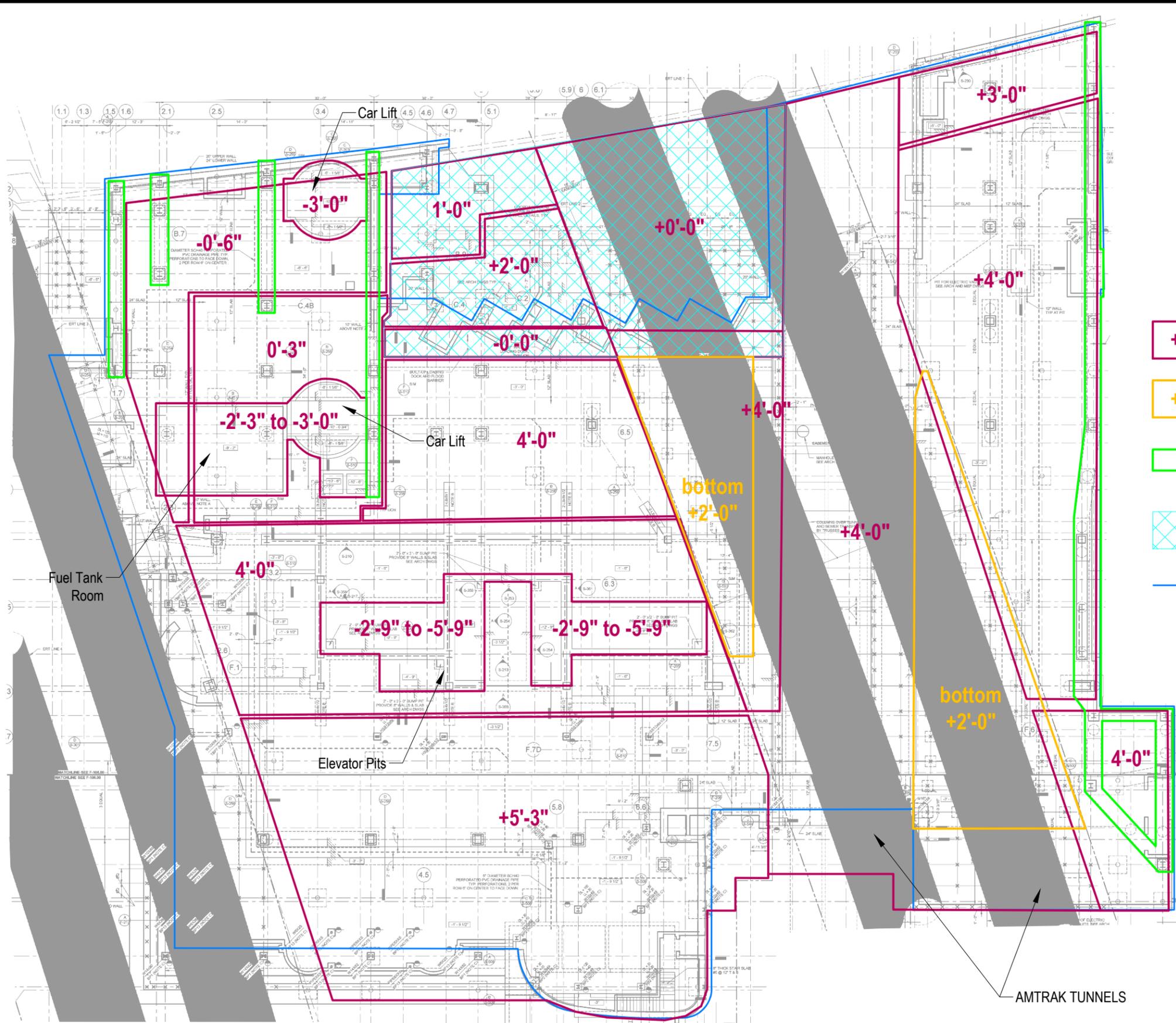
DATE  
**10.9.2013**

PROJECT NO.  
**11243**

SCALE  
**as shown**

FIGURE  
**7**

**AKRF**  
Environmental Consultants  
440 Park Avenue South, New York, NY 10016



**LEGEND:**

- +2'-0" PROPOSED BOTTOM OF PRESSURE SLAB ELEVATION (UNDERLAIN BY 3" MUDSLAB)
- +2'-0" PROPOSED BOTTOM OF DENSE NETWORK OF DROP PANELS
- GRADE BEAM
- SLAB UNDER OUTDOOR SERVICE YARD
- APPROXIMATE BUILDING LINE

**NOTE:**  
All elevations in Manhattan Borough Datum (MBD)



**NYU LANGONE MEDICAL CENTER  
KIMMEL PAVILION  
New York, New York**

**PRESSURE SLAB ELEVATION PLAN**

DATE  
**10.8.2013**

PROJECT NO.  
**11243**

SCALE  
**as shown**

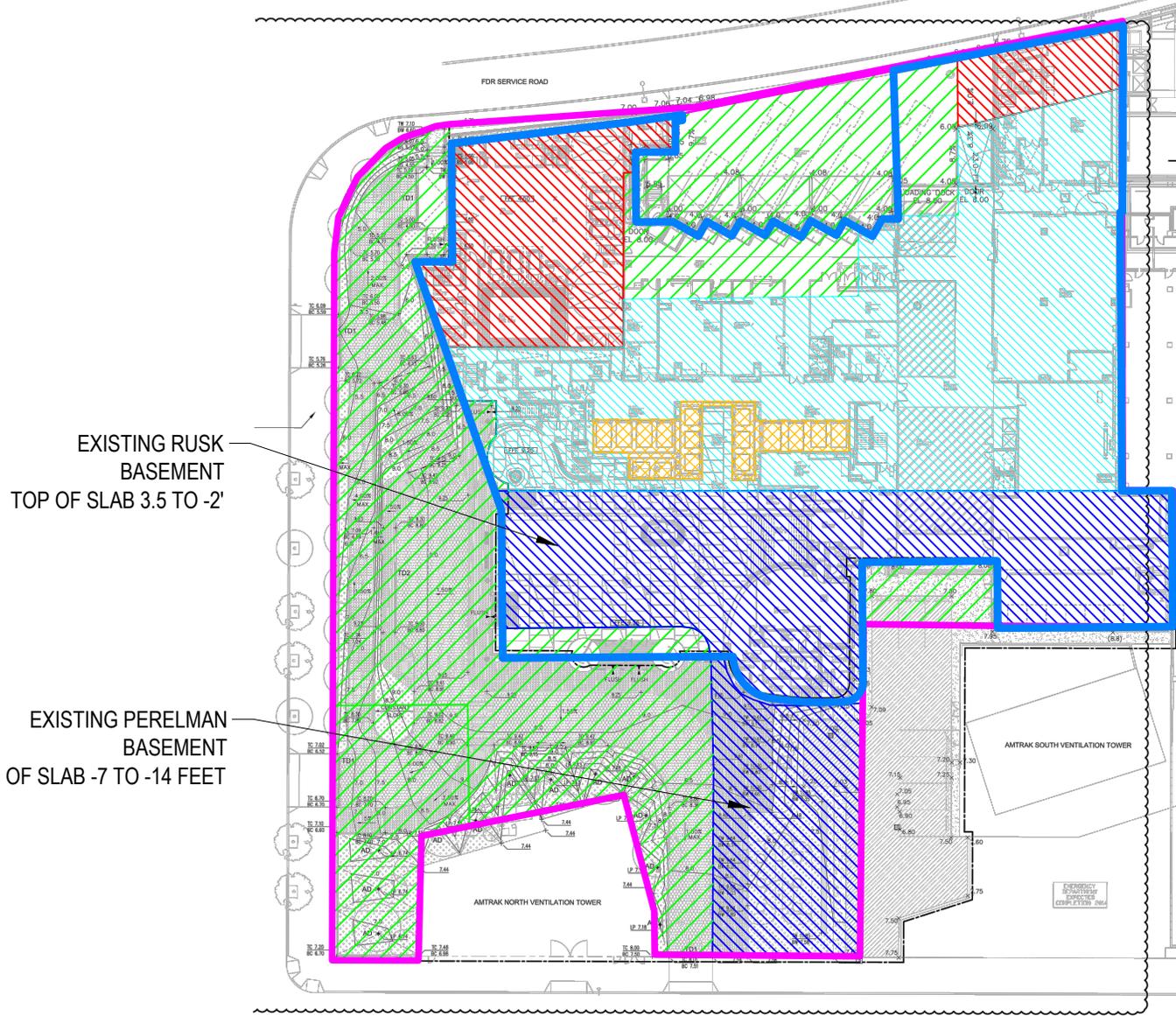
FIGURE  
**8**



**Environmental Consultants**  
440 Park Avenue South, New York, NY 10016



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**LEGEND**

-  SITE BOUNDARY
-  APPROXIMATE NEW BUILDING OUTLINE
-  CUT 0 - 5 FEET
-  CUT 4 - 7 FEET
-  CUT 5 - 10 FEET
-  CUT 10 - 25 FEET
-  FILL >2 FEET

\*CUT/FILL DEPTH GIVEN RELATIVE TO CURRENT LAND GRADE (EXTERIOR SITE AREAS) OR FOUNDATION FLOOR GRADE (CURRENT BUILDING FOOTPRINTS)



**NYU LANGONE MEDICAL CENTER  
KIMMEL PAVILION  
NEW YORK, NEW YORK**

**CONSTRUCTION  
EXCAVATION PLAN**



**Environmental Consultants**  
440 Park Avenue South, New York, N.Y. 10016

DATE  
**10.9.2013**

PROJECT No.  
**11243**

SCALE  
**as shown**

FIGURE  
**9**

## **Tables**

**Table 1**  
**NYULMC Kimmel Pavilion**  
**East 34th Street and FDR Drive**  
**New York, NY**

Soil Vapor Analytical Results  
*Volatile Organic Compounds*

Client ID Lab Sample ID Date Sampled Dilution $\mu\text{g}/\text{m}^3$	NYSDOH 2003 Soil Vapor Intrusion Air Guideline Value $\mu\text{g}/\text{m}^3$	NYSDOH 2003 Soil Vapor Indoor Upper Fence $\mu\text{g}/\text{m}^3$	EPA 2001 BASE 90th percentile Indoor $\mu\text{g}/\text{m}^3$	NYSDOH 2005 HEI RIOPA 95th Percentile Indoor $\mu\text{g}/\text{m}^3$	SV-1 L1315930-01 8/14/2013 5	SV-2 L1315930-02 8/14/2013 5	SV-3 L1315930-03 8/14/2013 10	SV-4 L1315930-04 8/14/2013 10
1,1,1-Trichloroethane	NS	2.5	20.6	NS	5.46 U	72.6	10.9 U	10.9 U
1,1,2,2-Tetrachloroethane	NS	0.4	NS	NS	6.87 U	6.87 U	13.7 U	13.7 U
1,1,2-Trichloroethane	NS	0.4	<1.5	NS	5.46 U	5.46 U	10.9 U	10.9 U
1,1-Dichloroethane	NS	0.4	<0.7	NS	4.05 U	4.05 U	8.09 U	8.09 U
1,1-Dichloroethene	NS	0.4	<1.4	NS	3.96 U	3.96 U	7.93 U	7.93 U
1,2,4-Trichlorobenzene	NS	0.5	<6.8	NS	7.42 U	7.42 U	14.8 U	14.8 U
1,2,4-Trimethylbenzene	NS	9.8	9.5	NS	8.8	6.69	22.3	9.83 U
1,2-Dibromoethane	NS	0.4	<1.5	NS	7.69 U	7.69 U	15.4 U	15.4 U
1,2-Dichlorobenzene	NS	0.5	<1.2	NS	6.01 U	6.01 U	12 U	12 U
1,2-Dichloroethane	NS	0.4	<0.9	NS	4.05 U	4.05 U	8.09 U	8.09 U
1,2-Dichloropropane	NS	0.4	<1.6	NS	4.62 U	4.62 U	9.24 U	9.24 U
1,3,5-Trimethylbenzene	NS	3.9	3.7	NS	4.92 U	4.92 U	9.83 U	9.83 U
1,3-Butadiene	NS	0.5	<3.0	NS	4.29	24.3	4.42 U	4.42 U
1,3-Dichlorobenzene	NS	0.5	<2.4	NS	6.01 U	6.01 U	12 U	12 U
1,4-Dichlorobenzene	NS	1.2	5.5	344	6.01 U	6.01 U	12 U	12 U
1,4-Dioxane	NS	NS	NS	NS	3.6 U	3.6 U	7.21 U	7.21 U
2,2,4-Trimethylpentane	NS	5	NS	NS	12.9	46.7	17.8	19.7
2-Butanone	NS	16	12	NS	25.7	22.4	66.1	24.4
2-Hexanone	NS	NS	NS	NS	4.1 U	4.1 U	8.2 U	8.2 U
3-Chloropropene	NS	NS	NS	NS	3.13 U	3.13 U	6.26 U	6.26 U
4-Ethyltoluene	NS	NS	3.6	NS	7.37	4.92 U	17.8	9.83 U
4-Methyl-2-pentanone	NS	1.9	6	NS	4.1 U	4.1 U	8.2 U	8.2 U
Acetone	NS	115	98.9	45.8	694	634	1,630	2,240
Benzene	NS	13	9.4	10	141	144	204	383
Benzyl chloride	NS	NS	<6.8	NS	5.18 U	5.18 U	10.4 U	10.4 U
Bromodichloromethane	NS	NS	NS	NS	6.7 U	6.7 U	13.4 U	13.4 U
Bromoform	NS	NS	NS	NS	10.3 U	10.3 U	20.7 U	20.7 U
Bromomethane	NS	0.5	<1.7	NS	3.88 U	3.88 U	7.77 U	7.77 U
Carbon disulfide	NS	NS	4.2	NS	26.2	32.4	95	10.1
Carbon tetrachloride	NS	1.3	<1.3	1.1	6.29 U	6.29 U	12.6 U	12.6 U
Chlorobenzene	NS	0.4	<0.9	NS	4.61 U	4.61 U	9.21 U	9.21 U
Chloroethane	NS	0.4	<1.1	NS	2.64 U	2.64 U	5.28 U	5.28 U
Chloroform	NS	1.2	1.1	6.34	9.28	4.88 U	25.2	9.77 U
Chloromethane	NS	4.2	3.7	NS	2.07 U	2.07 U	4.13 U	4.13 U
cis-1,2-Dichloroethene	NS	0.4	<1.9	NS	3.96 U	3.96 U	7.93 U	7.93 U
cis-1,3-Dichloropropene	NS	0.4	<2.3	NS	4.54 U	4.54 U	9.08 U	9.08 U
Cyclohexane	NS	6.3	NS	NS	23.2	53	29.3	28.6
Dibromochloromethane	NS	NS	NS	NS	8.52 U	8.52 U	17 U	17 U
Dichlorodifluoromethane	NS	10	16.5	NS	9.3	5.14	9.89 U	165
Ethanol	NS	1,300	210	NS	671	569	929	643
Ethyl Acetate	NS	NS	5.4	NS	9.01 U	9.01 U	18 U	18 U
Ethylbenzene	NS	6.4	5.7	7.62	126	101	214	126
Freon-113	NS	2.5	3.5	NS	7.66 U	7.66 U	15.3 U	15.3 U
Freon-114	NS	0.4	NS	NS	6.99 U	6.99 U	14 U	14 U
Heptane	NS	18	NS	NS	141	159	169	224
Hexachlorobutadiene	NS	0.5	<6.8	NS	10.7 U	10.7 U	21.3 U	21.3 U
Isopropanol	NS	NS	250	NS	11.1	8.11	12.5	12.3 U
Methyl tert butyl ether	NS	14	11.5	36	3.61 U	3.61 U	7.21 U	7.21 U
Methylene chloride	60	16	10	7.5	17.4 U	17.4 U	34.7 U	34.7 U
n-Hexane	NS	14	10.2	NS	195	199	289	295
o-Xylene	NS	7.1	7.9	7.24	87.7	65.2	148	70.8
p/m-Xylene	NS	11	22.2	22.2	425	332	734	369
Propylene	NS	NS	NS	NS	112	339	125	104
Styrene	NS	1.4	1.9	5.13	4.26 U	4.26 U	8.52 U	8.52 U
Tetrachloroethene	100	2.5	15.9	6.01	8.68	6.78 U	13.6 U	13.6 U
Tetrahydrofuran	NS	0.8	NS	NS	2.95 U	2.95 U	5.9 U	5.9 U
Toluene	NS	57	43	39.8	1,210	1,100	1,910	1,930
trans-1,2-Dichloroethene	NS	NS	NS	NS	3.96 U	3.96 U	7.93 U	7.93 U
trans-1,3-Dichloropropene	NS	NC	<1.3	NS	4.54 U	4.54 U	9.08 U	9.08 U
Trichloroethene	5	0.5	4.2	1.36	5.37	5.37 U	10.7 U	10.7 U
Trichlorofluoromethane	NS	12	18.1	NS	5.62 U	5.62 U	11.2 U	13.8
Vinyl acetate	NS	NS	NS	NS	3.52 U	3.52 U	7.04 U	7.04 U
Vinyl bromide	NS	NS	NS	NS	4.37 U	4.37 U	8.74 U	8.74 U
Vinyl chloride	NS	0.4	<1.9	NS	2.56 U	2.56 U	5.11 U	5.11 U

**Table 1**  
**NYULMC Kimmel Pavilion**  
 East 34th Street and FDR Drive  
 New York, NY

Soil Vapor Analytical Results  
 Volatile Organic Compounds

Client ID	NYSDOH 2003 Soil Vapor Intrusion Air Guideline Value µg/m <sup>3</sup>	NYSDOH 2003 Soil Vapor Indoor Upper Fence µg/m <sup>3</sup>	EPA 2001 BASE 90th percentile Indoor µg/m <sup>3</sup>	NYSDOH 2005 HEI RIOPA 95th Percentile Indoor µg/m <sup>3</sup>	SV-5 L1315930-05 8/14/2013 5	SV-6 L1315930-06 8/14/2013 5	SV-7 L1315930-07 8/14/2013 5
1,1,1-Trichloroethane	NS	2.5	20.6	NS	7.26	461	5.46 U
1,1,2,2-Tetrachloroethane	NS	0.4	NS	NS	6.87 U	6.87 U	6.87 U
1,1,2-Trichloroethane	NS	0.4	<1.5	NS	5.46 U	5.46 U	5.46 U
1,1-Dichloroethane	NS	0.4	<0.7	NS	4.05 U	186	4.05 U
1,1-Dichloroethene	NS	0.4	<1.4	NS	3.96 U	4.52	3.96 U
1,2,4-Trichlorobenzene	NS	0.5	<6.8	NS	7.42 U	7.42 U	7.42 U
1,2,4-Trimethylbenzene	NS	9.8	9.5	NS	8.9	4.92 U	18.7
1,2-Dibromoethane	NS	0.4	<1.5	NS	7.69 U	7.69 U	7.69 U
1,2-Dichlorobenzene	NS	0.5	<1.2	NS	6.01 U	6.01 U	6.01 U
1,2-Dichloroethane	NS	0.4	<0.9	NS	4.05 U	4.05 U	4.05 U
1,2-Dichloropropane	NS	0.4	<1.6	NS	4.62 U	4.62 U	4.62 U
1,3,5-Trimethylbenzene	NS	3.9	3.7	NS	4.92 U	4.92 U	6.78
1,3-Butadiene	NS	0.5	<3.0	NS	2.21 U	3.12	2.21 U
1,3-Dichlorobenzene	NS	0.5	<2.4	NS	6.01 U	6.01 U	6.01 U
1,4-Dichlorobenzene	NS	1.2	5.5	344	6.01 U	6.01 U	6.01 U
1,4-Dioxane	NS	NS	NS	NS	3.6 U	3.6 U	3.6 U
2,2,4-Trimethylpentane	NS	5	NS	NS	10.9	24.1	5.89
2-Butanone	NS	16	12	NS	16.8	26.7	16.6
2-Hexanone	NS	NS	NS	NS	4.1 U	4.1 U	4.1 U
3-Chloropropene	NS	NS	NS	NS	3.13 U	3.13 U	3.13 U
4-Ethyltoluene	NS	NS	3.6	NS	6.88	4.92 U	13.8
4-Methyl-2-pentanone	NS	1.9	6	NS	4.1 U	4.1 U	4.1 U
Acetone	NS	115	98.9	45.8	938	546	316
Benzene	NS	13	9.4	10	136	275	102
Benzyl chloride	NS	NS	<6.8	NS	5.18 U	5.18 U	5.18 U
Bromodichloromethane	NS	NS	NS	NS	6.7 U	6.7 U	6.7 U
Bromoform	NS	NS	NS	NS	10.3 U	10.3 U	10.3 U
Bromomethane	NS	0.5	<1.7	NS	3.88 U	3.88 U	3.88 U
Carbon disulfide	NS	NS	4.2	NS	13.4	74.1	6.04
Carbon tetrachloride	NS	1.3	<1.3	1.1	6.29 U	6.29 U	6.29 U
Chlorobenzene	NS	0.4	<0.9	NS	4.61 U	4.61 U	4.61 U
Chloroethane	NS	0.4	<1.1	NS	2.64 U	5.33	2.64 U
Chloroform	NS	1.2	1.1	6.34	74.7	7.23	23.1
Chloromethane	NS	4.2	3.7	NS	5.76	33.9	2.07 U
cis-1,2-Dichloroethene	NS	0.4	<1.9	NS	3.96	3.96 U	3.96 U
cis-1,3-Dichloropropene	NS	0.4	<2.3	NS	4.54 U	4.54 U	4.54 U
Cyclohexane	NS	6.3	NS	NS	18.1	25.2	11.4
Dibromochloromethane	NS	NS	NS	NS	8.52 U	8.52 U	8.52 U
Dichlorodifluoromethane	NS	10	16.5	NS	27.1	20	240
Ethanol	NS	1,300	210	NS	584	426	678
Ethyl Acetate	NS	NS	5.4	NS	9.01 U	9.01 U	9.01 U
Ethylbenzene	NS	6.4	5.7	7.62	137	89	129
Freon-113	NS	2.5	3.5	NS	7.66 U	7.66 U	7.66 U
Freon-114	NS	0.4	NS	NS	6.99 U	6.99 U	6.99 U
Heptane	NS	18	NS	NS	129	115	95.1
Hexachlorobutadiene	NS	0.5	<6.8	NS	10.7 U	10.7 U	10.7 U
Isopropanol	NS	NS	250	NS	7.37	12.4	21.3
Methyl tert butyl ether	NS	14	11.5	36	3.61 U	3.61 U	3.61 U
Methylene chloride	60	16	10	7.5	17.4 U	17.4 U	17.4 U
n-Hexane	NS	14	10.2	NS	163	161	118
o-Xylene	NS	7.1	7.9	7.24	86	56	96
p/m-Xylene	NS	11	22.2	22.2	456	281	486
Propylene	NS	NS	NS	NS	19.8	109	17.6
Styrene	NS	1.4	1.9	5.13	4.26 U	4.26 U	4.26 U
Tetrachloroethene	100	2.5	15.9	6.01	9.7	14.2	12.7
Tetrahydrofuran	NS	0.8	NS	NS	2.95 U	2.95 U	2.95 U
Toluene	NS	57	43	39.8	1,440	1,060	1,000
trans-1,2-Dichloroethene	NS	NS	NS	NS	3.96 U	3.96 U	3.96 U
trans-1,3-Dichloropropene	NS	NC	<1.3	NS	4.54 U	4.54 U	4.54 U
Trichloroethene	5	0.5	4.2	1.36	5.37 U	5.37 U	5.37 U
Trichlorofluoromethane	NS	12	18.1	NS	10.4	17.5	11.8
Vinyl acetate	NS	NS	NS	NS	3.52 U	3.52 U	3.52 U
Vinyl bromide	NS	NS	NS	NS	4.37 U	4.37 U	4.37 U
Vinyl chloride	NS	0.4	<1.9	NS	2.56 U	2.56 U	2.56 U

**Table 1**  
**NYULMC Kimmel**  
**East 34th Street and FDR Drive**  
**New York, NY**  
Soil Vapor Analytical Results  
*Notes*

**GENERAL**

**NS** : No soil cleanup objective listed.

**U** : The analyte was not detected at the indicated concentration.

**SOIL VAPOR**

**Exceedences of NYSDOH Soil Vapor Intrusion Air Guidance Value are highlighted in gray.**

**µg/m<sup>3</sup>** : micrograms per cubic meter of air.

**NYSDOH  
Soil Vapor  
Intrusion  
Air Guidance  
Value**

NYSDOH Air Guideline Values (AGVs) presented in the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006 ("NYSDOH Vapor Intrusion Guidance Document").

**NYSDOH 2003  
Soil Vapor  
Indoor  
Upper Fence**

Upper fence indoor air values from "Table C1. NYSDOH 2003: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes", published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006).

**EPA 2001  
BASE  
90th  
percentile**

90th Percentile indoor air values from "Table C-2. EPA 2001: Building Assessment and Survey Evaluation (BASE) Database, SUMMA canister method", published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006).

**HEI RIOPA  
2005  
95th  
percentile**

95th Percentile Indoor Air Values from Table C-5, Health Effects Institute (HEI) 2005: Relationship of Indoor, Outdoor and Personal Air, published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006).

**Table 2**  
**NYU Langone Medical Center Kimmel Pavilion**  
 New York, NY  
 Subsurface (Phase II) Investigation Soil Analytical Results  
 Volatile Organic Compounds

Client ID Lab Sample ID Date Sampled	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Commercial SCO	SB-1 (1-2') L1106844-01 5/14/2011	SB-1 (5-6') L1106844-02 5/14/2011	SB-2 (2-3') L1106844-04 5/14/2011	SB-3 (1-2') L1106844-05 5/14/2011	SB-3 (4-5') L1106844-06 5/14/2011	SB-4 (1-2') L1106844-08 5/15/2011	SB-5 (1-2') L1106844-07 5/15/2011
mg/kg	mg/kg	mg/kg							
1,1,1,2-Tetrachloroethane	NS	NS	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
1,1,1-Trichloroethane	0.68	500	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
1,1,2-Trichloroethane	NS	NS	0.0047 U	0.0044 U	0.0046 U	0.0042 U	0.0043 U	0.0043 U	0.0048 U
1,1-Dichloroethane	0.27	240	0.0047 U	0.0044 U	0.0046 U	0.0042 U	0.0043 U	0.0043 U	0.0048 U
1,1-Dichloroethene	0.33	500	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
1,1-Dichloropropene	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
1,2,3-Trichlorobenzene	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
1,2,3-Trichloropropane	NS	NS	0.032 U	0.029 U	0.03 U	0.028 U	0.028 U	0.029 U	0.032 U
1,2,4,5-Tetramethylbenzene	NS	NS	0.013 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.013 U
1,2,4-Trichlorobenzene	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
1,2,4-Trimethylbenzene	3.6	190	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
1,2-Dibromo-3-chloropropane	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
1,2-Dibromoethane	NS	NS	0.013 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.013 U
1,2-Dichlorobenzene	1.1	500	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
1,2-Dichloroethane	0.02	30	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
1,2-Dichloropropane	NS	NS	0.011 U	0.01 U	0.011 U	0.0098 U	0.0099 U	0.01 U	0.011 U
1,3,5-Trimethylbenzene	8.4	190	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
1,3-Dichlorobenzene	2.4	280	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
1,3-Dichloropropane	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
1,4-Dichlorobenzene	1.8	130	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
1,4-Diethylbenzene	NS	NS	0.013 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.013 U
2,2-Dichloropropane	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
2-Butanone	0.12	500	0.032 U	0.029 U	0.03 U	0.028 U	0.028 U	0.029 U	0.032 U
2-Hexanone	NS	NS	0.032 U	0.029 U	0.03 U	0.028 U	0.028 U	0.029 U	0.032 U
4-Ethyltoluene	NS	NS	0.013 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.013 U
4-Methyl-2-pentanone	NS	NS	0.032 U	0.029 U	0.03 U	0.028 U	0.028 U	0.029 U	0.032 U
Acetone	0.05	500	0.032 U	0.029 U	0.03 U	0.028 U	0.028 U	0.029 U	0.032 U
Acrylonitrile	NS	NS	0.032 U	0.029 U	0.03 U	0.028 U	0.028 U	0.029 U	0.032 U
Benzene	0.06	44	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
Bromobenzene	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
Bromochloromethane	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
Bromodichloromethane	NS	NS	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
Bromoform	NS	NS	0.013 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.013 U
Bromomethane	NS	NS	0.0063 U	0.0058 U	0.0061 U	0.0056 U	0.0057 U	0.0057 U	0.0064 U
Carbon disulfide	NS	NS	0.032 U	0.029 U	0.03 U	0.028 U	0.028 U	0.029 U	0.032 U
Carbon tetrachloride	0.76	22	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
Chlorobenzene	1.1	500	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
Chloroethane	NS	NS	0.0063 U	0.0058 U	0.0061 U	0.0056 U	0.0057 U	0.0057 U	0.0064 U
Chloroform	0.37	350	0.0047 U	0.0044 U	0.0046 U	0.0042 U	0.0043 U	0.0043 U	0.0048 U
Chloromethane	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
cis-1,2-Dichloroethene	0.25	500	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
cis-1,3-Dichloropropene	NS	NS	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
Dibromochloromethane	NS	NS	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
Dibromomethane	NS	NS	0.032 U	0.029 U	0.03 U	0.028 U	0.028 U	0.029 U	0.032 U
Dichlorodifluoromethane	NS	NS	0.032 U	0.029 U	0.03 U	0.028 U	0.028 U	0.029 U	0.032 U
Ethyl ether	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
Ethylbenzene	1	390	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
Hexachlorobutadiene	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
Isopropylbenzene	NS	NS	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
Methyl tert butyl ether	0.93	500	0.0063 U	0.0058 U	0.0061 U	0.0056 U	0.0057 U	0.0057 U	0.0064 U
Methylene chloride	0.05	500	0.032 U	0.029 U	0.03 U	0.028 U	0.028 U	0.029 U	0.032 U
Naphthalene	12	500	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
n-Butylbenzene	12	500	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
n-Propylbenzene	3.9	500	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
o-Chlorotoluene	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
o-Xylene	0.26	500	0.0063 U	0.0058 U	0.0061 U	0.0056 U	0.0057 U	0.0057 U	0.0064 U
p/m-Xylene	0.26	500	0.0063 U	0.0058 U	0.0061 U	0.0056 U	0.0057 U	0.0057 U	0.0064 U
p-Chlorotoluene	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
p-Isopropyltoluene	NS	NS	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
sec-Butylbenzene	11	500	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
Styrene	NS	NS	0.0063 U	0.0058 U	0.0061 U	0.0056 U	0.0057 U	0.0057 U	0.0064 U
tert-Butylbenzene	5.9	500	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
Tetrachloroethene	1.3	150	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
Toluene	0.7	500	0.0047 U	0.0044 U	0.0046 U	0.0042 U	0.0043 U	0.0043 U	0.0048 U
trans-1,2-Dichloroethene	0.19	500	0.0047 U	0.0044 U	0.0046 U	0.0042 U	0.0043 U	0.0043 U	0.0048 U
trans-1,3-Dichloropropene	NS	NS	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
trans-1,4-Dichloro-2-butene	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
Trichloroethene	0.47	200	0.0032 U	0.0029 U	0.003 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
Trichlorofluoromethane	NS	NS	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U
Vinyl acetate	NS	NS	0.032 U	0.029 U	0.03 U	0.028 U	0.028 U	0.029 U	0.032 U
Vinyl chloride	0.02	13	0.0063 U	0.0058 U	0.0061 U	0.0056 U	0.0057 U	0.0057 U	0.0064 U

**Table 2**  
**NYU Langone Medical Center Kimmel Pavilion**  
 New York, NY  
 Subsurface (Phase II) Investigation Soil Analytical Results  
 Volatile Organic Compounds

Client ID Lab Sample ID Date Sampled	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Commercial SCO	SB-6 (1-2') L1106844-09 5/15/2011	SB-7 (1-2') L1107126-01 5/20/2011	SB-7 (4-5') L1107126-02 5/20/2011	SB-8 (1-2') L1107126-03 5/20/2011	SB-9 (1-2') L1107126-05 5/20/2011	SB-9 (3-4') L1107126-06 5/20/2011	SB-10 (1-2') L1107126-07 5/20/2011
mg/kg	mg/kg	mg/kg							
1,1,1,2-Tetrachloroethane	NS	NS	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
1,1,1-Trichloroethane	0.68	500	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
1,1,2-Trichloroethane	NS	NS	0.0042 U	0.0043 U	0.0047 U	0.0043 U	0.0042 U	0.0047 U	0.0044 U
1,1-Dichloroethane	0.27	240	0.0042 U	0.0043 U	0.0047 U	0.0043 U	0.0042 U	0.0047 U	0.0044 U
1,1-Dichloroethene	0.33	500	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
1,1-Dichloropropene	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
1,2,3-Trichlorobenzene	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
1,2,3-Trichloropropane	NS	NS	0.028 U	0.029 U	0.031 U	0.028 U	0.028 U	0.031 U	0.029 U
1,2,4,5-Tetramethylbenzene	NS	NS	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U
1,2,4-Trichlorobenzene	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
1,2,4-Trimethylbenzene	3.6	190	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
1,2-Dibromo-3-chloropropane	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
1,2-Dibromoethane	NS	NS	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U
1,2-Dichlorobenzene	1.1	500	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
1,2-Dichloroethane	0.02	30	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
1,2-Dichloropropane	NS	NS	0.0098 U	0.01 U	0.011 U	0.0099 U	0.0098 U	0.011 U	0.01 U
1,3,5-Trimethylbenzene	8.4	190	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
1,3-Dichlorobenzene	2.4	280	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
1,3-Dichloropropane	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
1,4-Dichlorobenzene	1.8	130	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
1,4-Diethylbenzene	NS	NS	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U
2,2-Dichloropropane	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
2-Butanone	0.12	500	0.028 U	0.029 U	0.031 U	0.028 U	0.028 U	0.031 U	0.029 U
2-Hexanone	NS	NS	0.028 U	0.029 U	0.031 U	0.028 U	0.028 U	0.031 U	0.029 U
4-Ethyltoluene	NS	NS	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U
4-Methyl-2-pentanone	NS	NS	0.028 U	0.029 U	0.031 U	0.028 U	0.028 U	0.031 U	0.029 U
Acetone	0.05	500	0.028 U	0.029 U	0.031 U	0.028 U	0.028 U	0.031 U	0.029 U
Acrylonitrile	NS	NS	0.028 U	0.029 U	0.031 U	0.028 U	0.028 U	0.031 U	0.029 U
Benzene	0.06	44	0.0028 U	0.0029 U	0.0031 U	0.0015 J	0.0028 U	0.0031 U	0.0029 U
Bromobenzene	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
Bromochloromethane	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
Bromodichloromethane	NS	NS	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
Bromoform	NS	NS	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U
Bromomethane	NS	NS	0.0056 U	0.0057 U	0.0062 U	0.0057 U	0.0056 U	0.0062 U	0.0059 U
Carbon disulfide	NS	NS	0.028 U	0.029 U	0.031 U	0.028 U	0.028 U	0.031 U	0.029 U
Carbon tetrachloride	0.76	22	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
Chlorobenzene	1.1	500	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
Chloroethane	NS	NS	0.0056 U	0.0057 U	0.0062 U	0.0057 U	0.0056 U	0.0062 U	0.0059 U
Chloroform	0.37	350	0.0042 U	0.0043 U	0.0047 U	0.0043 U	0.0042 U	0.0047 U	0.0044 U
Chloromethane	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
cis-1,2-Dichloroethene	0.25	500	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
cis-1,3-Dichloropropene	NS	NS	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
Dibromochloromethane	NS	NS	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
Dibromomethane	NS	NS	0.028 U	0.029 U	0.031 U	0.028 U	0.028 U	0.031 U	0.029 U
Dichlorodifluoromethane	NS	NS	0.028 U	0.029 U	0.031 U	0.028 U	0.028 U	0.031 U	0.029 U
Ethyl ether	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
Ethylbenzene	1	390	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
Hexachlorobutadiene	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
Isopropylbenzene	NS	NS	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
Methyl tert butyl ether	0.93	500	0.0056 U	0.0057 U	0.0062 U	0.0057 U	0.0056 U	0.0062 U	0.0059 U
Methylene chloride	0.05	500	0.028 U	0.029 U	0.031 U	0.028 U	0.028 U	0.031 U	0.029 U
Naphthalene	12	500	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
n-Butylbenzene	12	500	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
n-Propylbenzene	3.9	500	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
o-Chlorotoluene	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
o-Xylene	0.26	500	0.0056 U	0.0057 U	0.0062 U	0.0057 U	0.0056 U	0.0062 U	0.0059 U
p/m-Xylene	0.26	500	0.0056 U	0.0057 U	0.0062 U	0.0057 U	0.0056 U	0.0062 U	0.0059 U
p-Chlorotoluene	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
p-Isopropyltoluene	NS	NS	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
sec-Butylbenzene	11	500	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
Styrene	NS	NS	0.0056 U	0.0057 U	0.0062 U	0.0057 U	0.0056 U	0.0062 U	0.0059 U
tert-Butylbenzene	5.9	500	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
Tetrachloroethene	1.3	150	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
Toluene	0.7	500	0.0042 U	0.0043 U	0.0047 U	0.0043 U	0.0042 U	0.0047 U	0.0044 U
trans-1,2-Dichloroethene	0.19	500	0.0042 U	0.0043 U	0.0047 U	0.0043 U	0.0042 U	0.0047 U	0.0044 U
trans-1,3-Dichloropropene	NS	NS	0.0028 U	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
trans-1,4-Dichloro-2-butene	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
Trichloroethene	0.47	200	0.0017 J	0.0029 U	0.0031 U	0.0028 U	0.0028 U	0.0031 U	0.0029 U
Trichlorofluoromethane	NS	NS	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.015 U
Vinyl acetate	NS	NS	0.028 U	0.029 U	0.031 U	0.028 U	0.028 U	0.031 U	0.029 U
Vinyl chloride	0.02	13	0.0056 U	0.0057 U	0.0062 U	0.0057 U	0.0056 U	0.0062 U	0.0059 U

**Table 3**  
**NYU Langone Medical Center Kimmel Pavilion**  
 New York, NY  
 Subsurface (Phase II) Investigation Soil Analytical Results  
 Semi-Volatile Organic Compounds

Client ID	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Commercial SCO	SB-1 (1-2') L1106844-01 5/14/2011 1	SB-1 (5-6') L1106844-02 5/14/2011 1	SB-2 (2-3') L1106844-04 5/14/2011 1	SB-3 (1-2') L1106844-05 5/14/2011 1	SB-3 (4-5') L1106844-06 5/14/2011 1	SB-4 (1-2') L1106844-08 5/15/2011 1	SB-5 (1-2') L1106844-07 5/15/2011 1
mg/kg	mg/kg	mg/kg							
1,2,4,5-Tetrachlorobenzene	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
1,2,4-Trichlorobenzene	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
1,2-Dichlorobenzene	1.1	500	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
1,3-Dichlorobenzene	2.4	280	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
1,4-Dichlorobenzene	1.8	130	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
2,4,5-Trichlorophenol	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
2,4,6-Trichlorophenol	NS	NS	0.13 U	0.12 U	0.13 U	0.11 U	0.12 U	0.12 U	0.14 U
2,4-Dichlorophenol	NS	NS	0.2 U	0.18 U	0.19 U	0.17 U	0.18 U	0.17 U	0.2 U
2,4-Dimethylphenol	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
2,4-Dinitrophenol	NS	NS	1 U	0.95 U	1 U	0.92 U	0.96 U	0.93 U	1.1 U
2,4-Dinitrotoluene	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
2,6-Dinitrotoluene	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
2-Chloronaphthalene	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
2-Chlorophenol	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
2-Methylnaphthalene	NS	NS	0.26 U	0.24 U	0.25 U	0.23 U	0.1 J	0.082 J	0.27 U
2-Methylphenol	0.33	500	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
2-Nitroaniline	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
2-Nitrophenol	NS	NS	0.48 U	0.43 U	0.46 U	0.41 U	0.43 U	0.42 U	0.49 U
3,3'-Dichlorobenzidine	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
3-Methylphenol/4-Methylphenol	0.33	500	0.32 U	0.28 U	0.3 U	0.28 U	0.29 U	0.28 U	0.32 U
3-Nitroaniline	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
4,6-Dinitro-o-cresol	NS	NS	0.57 U	0.52 U	0.55 U	0.5 U	0.52 U	0.5 U	0.58 U
4-Bromophenyl phenyl ether	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
4-Chloroaniline	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
4-Chlorophenyl phenyl ether	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
4-Nitroaniline	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
4-Nitrophenol	NS	NS	0.31 U	0.28 U	0.3 U	0.27 U	0.28 U	0.27 U	0.32 U
Acenaphthene	20	500	0.18 U	0.044 J	0.17 U	0.15 U	0.12 J	0.23	0.099 J
Acenaphthylene	100	500	0.18 U	0.16 U	0.17 U	0.19	0.062 J	0.16 U	0.27
Acetophenone	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
Anthracene	100	500	0.13 U	0.088 J	0.067 J	0.16	0.28	0.64	0.62
Benzo(a)anthracene	1	5.6	0.13 U	0.14	0.29	0.79	0.72	1.1	1.7
Benzo(a)pyrene	1	1	0.18 U	0.1 J	0.38	0.82	0.79	1	1.4
Benzo(b)fluoranthene	1	5.6	0.13 U	0.15	0.47	1	1	1.3	2
Benzo(ghi)perylene	100	500	0.18 U	0.064 J	0.25	0.52	0.49	0.59	0.74
Benzo(k)fluoranthene	0.8	56	0.13 U	0.058 J	0.19	0.39	0.38	0.46	0.77
Benzoic Acid	NS	NS	0.71 U	0.64 U	0.68 U	0.62 U	0.65 U	0.63 U	0.73 U
Benzyl Alcohol	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
Biphenyl	NS	NS	0.5 U	0.45 U	0.48 U	0.44 U	0.46 U	0.44 U	0.51 U
Bis(2-chloroethoxy)methane	NS	NS	0.24 U	0.21 U	0.23 U	0.21 U	0.22 U	0.21 U	0.24 U
Bis(2-chloroethyl)ether	NS	NS	0.2 U	0.18 U	0.19 U	0.17 U	0.18 U	0.17 U	0.2 U
Bis(2-chloroisopropyl)ether	NS	NS	0.26 U	0.24 U	0.25 U	0.23 U	0.24 U	0.23 U	0.27 U
Bis(2-Ethylhexyl)phthalate	NS	NS	0.22 U	0.2 U	0.21 U	0.053 J	0.071 J	0.19 U	0.22 U
Butyl benzyl phthalate	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
Carbazole	NS	NS	0.22 U	0.031 J	0.21 U	0.042 J	0.11 J	0.11 J	0.19 J
Chrysene	1	56	0.13 U	0.14	0.3	0.78	1.1	1.1	1.7
Dibenzo(a,h)anthracene	0.33	0.56	0.13 U	0.12 U	0.076 J	0.13	0.13	0.15	0.21
Dibenzofuran	7	350	0.22 U	0.045 J	0.21 U	0.19 U	0.091 J	0.18 J	0.089 J
Diethyl phthalate	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
Dimethyl phthalate	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
Di-n-butylphthalate	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.12 J	0.19 U	0.22 U
Di-n-octylphthalate	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
Fluoranthene	100	500	0.087 J	0.44	0.46	1.4	1.8	2.6	4
Fluorene	30	500	0.22 U	0.044 J	0.21 U	0.19 U	0.099 J	0.24	0.15 J
Hexachlorobenzene	0.33	6	0.13 U	0.12 U	0.13 U	0.11 U	0.12 U	0.12 U	0.14 U
Hexachlorobutadiene	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
Hexachlorocyclopentadiene	NS	NS	0.63 U	0.57 U	0.6 U	0.55 U	0.57 U	0.56 U	0.64 U
Hexachloroethane	NS	NS	0.18 U	0.16 U	0.17 U	0.15 U	0.16 U	0.16 U	0.18 U
Indeno(1,2,3-cd)Pyrene	0.5	5.6	0.18 U	0.063 J	0.27	0.56	0.54	0.63	0.87
Isophorone	NS	NS	0.2 U	0.18 U	0.19 U	0.17 U	0.18 U	0.17 U	0.2 U
Naphthalene	12	500	0.22 U	0.063 J	0.092 J	0.19 U	0.14 J	0.15 J	0.22 U
Nitrobenzene	NS	NS	0.2 U	0.18 U	0.19 U	0.17 U	0.18 U	0.17 U	0.2 U
NitrosoDiPhenylAmine(NDPA)/DPA	NS	NS	0.18 U	0.16 U	0.17 U	0.15 U	0.16 U	0.16 U	0.18 U
n-Nitrosodi-n-propylamine	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
P-Chloro-M-Cresol	NS	NS	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
Pentachlorophenol	0.8	6.7	0.18 U	0.16 U	0.17 U	0.15 U	0.16 U	0.16 U	0.18 U
Phenanthrene	100	500	0.13 U	0.42	0.18	0.39	1.2	2	2.5
Phenol	0.33	500	0.22 U	0.2 U	0.21 U	0.19 U	0.2 U	0.19 U	0.22 U
Pyrene	100	500	0.073 J	0.38	0.43	1.4	1.6	2.5	3.4

**Table 3**  
**NYU Langone Medical Center Kimmel Pavilion**  
 New York, NY  
 Subsurface (Phase II) Investigation Soil Analytical Results  
 Semi-Volatile Organic Compounds

Client ID	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Commercial SCO	SB-6 (1-2') L1106844-09 5/15/2011 5	SB-7 (1-2') L1107126-01 5/20/2011 1	SB-7 (4-5') L1107126-02 5/20/2011 1	SB-8 (1-2') L1107126-03 5/20/2011 5	SB-9 (1-2') L1107126-05 5/20/2011 5	SB-9 (3-4') L1107126-06 5/20/2011 5	SB-10 (1-2') L1107126-07 5/20/2011 1
Lab Sample ID									
Date Sampled									
Dilution									
mg/kg	mg/kg	mg/kg							
1,2,4,5-Tetrachlorobenzene	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
1,2,4-Trichlorobenzene	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
1,2-Dichlorobenzene	1.1	500	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
1,3-Dichlorobenzene	2.4	280	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
1,4-Dichlorobenzene	1.8	130	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
2,4,5-Trichlorophenol	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
2,4,6-Trichlorophenol	NS	NS	0.58 U	0.11 U	0.12 U	0.55 U	0.55 U	0.61 U	0.12 U
2,4-Dichlorophenol	NS	NS	0.87 U	0.17 U	0.18 U	0.83 U	0.83 U	0.91 U	0.17 U
2,4-Dimethylphenol	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
2,4-Dinitrophenol	NS	NS	4.6 U	0.91 U	0.97 U	4.4 U	4.4 U	4.9 U	0.92 U
2,4-Dinitrotoluene	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
2,6-Dinitrotoluene	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
2-Chloronaphthalene	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
2-Chlorophenol	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
2-Methylnaphthalene	NS	NS	1.2 U	0.23 U	0.1 J	1.1 U	1.1 U	1.1 J	0.23 U
2-Methylphenol	0.33	500	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
2-Nitroaniline	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
2-Nitrophenol	NS	NS	2.1 U	0.41 U	0.44 U	2 U	2 U	2.2 U	0.42 U
3,3'-Dichlorobenzidine	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
3-Methylphenol/4-Methylphenol	0.33	500	1.4 U	0.27 U	0.29 U	1.3 U	1.3 U	1.4 U	0.28 U
3-Nitroaniline	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
4,6-Dinitro-o-cresol	NS	NS	2.5 U	0.49 U	0.53 U	2.4 U	2.4 U	2.6 U	0.5 U
4-Bromophenyl phenyl ether	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
4-Chloroaniline	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
4-Chlorophenyl phenyl ether	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
4-Nitroaniline	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
4-Nitrophenol	NS	NS	1.4 U	0.27 U	0.28 U	1.3 U	1.3 U	1.4 U	0.27 U
Acenaphthene	20	500	0.77 U	0.1 J	0.19	0.5 J	0.32 J	3.5	0.15 U
Acenaphthylene	100	500	0.77 U	0.099 J	0.12 J	0.25 J	0.42 J	0.85	0.055 J
Acetophenone	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
Anthracene	100	500	0.26 J	0.42	0.5	2.3	1.4	9.5	0.08 J
Benzo(a)anthracene	1	5.6	0.76	2.2	2.5	4.4	5.2	44	0.31
Benzo(a)pyrene	1	1	0.77	3.1	4.1	4.2	8.7	71	0.36
Benzo(b)fluoranthene	1	5.6	1	3.2	4.5	5.2	9.2	75	0.44
Benzo(ghi)perylene	100	500	0.5 J	1.6	2.6	2.3	5.7	34	0.25
Benzo(k)fluoranthene	0.8	56	0.39 J	1.4	1.7	2.2	3.6	22	0.19
Benzoic Acid	NS	NS	3.1 U	0.62 U	0.66 U	3 U	3 U	3.3 U	0.62 U
Benzyl Alcohol	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
Biphenyl	NS	NS	2.2 U	0.43 U	0.46 U	2.1 U	2.1 U	2.3 U	0.44 U
Bis(2-chloroethoxy)methane	NS	NS	1 U	0.2 U	0.22 U	1 U	0.99 U	1.1 U	0.21 U
Bis(2-chloroethyl)ether	NS	NS	0.87 U	0.17 U	0.18 U	0.83 U	0.83 U	0.91 U	0.17 U
Bis(2-chloroisopropyl)ether	NS	NS	1.2 U	0.23 U	0.24 U	1.1 U	1.1 U	1.2 U	0.23 U
Bis(2-Ethylhexyl)phthalate	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
Butyl benzyl phthalate	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
Carbazole	NS	NS	0.97 U	0.28	0.28	0.59 J	0.64 J	5.2	0.19 U
Chrysene	1	56	0.8	2.1	2.4	4.2	5.4	37	0.35
Dibenzo(a,h)anthracene	0.33	0.56	0.58 U	0.48	0.76	0.67	1.5	13	0.058 J
Dibenzofuran	7	350	0.97 U	0.1 J	0.1 J	0.61 J	0.29 J	1.9	0.19 U
Diethyl phthalate	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
Dimethyl phthalate	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
Di-n-butylphthalate	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
Di-n-octylphthalate	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
Fluoranthene	100	500	1.6	2.3	2.6	9.5	6.8	46	0.58
Fluorene	30	500	0.97 U	0.098 J	0.1 J	0.86 J	0.38 J	2.6	0.19 U
Hexachlorobenzene	0.33	6	0.58 U	0.11 U	0.12 U	0.55 U	0.55 U	0.61 U	0.12 U
Hexachlorobutadiene	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
Hexachlorocyclopentadiene	NS	NS	2.8 U	0.54 U	0.58 U	2.6 U	2.6 U	2.9 U	0.55 U
Hexachloroethane	NS	NS	0.77 U	0.15 U	0.16 U	0.74 U	0.74 U	0.81 U	0.15 U
Indeno(1,2,3-cd)Pyrene	0.5	5.6	0.52 J	1.8	3.2	2.5	6.3	34	0.26
Isophorone	NS	NS	0.87 U	0.17 U	0.18 U	0.83 U	0.83 U	0.91 U	0.17 U
Naphthalene	12	500	0.97 U	0.15 J	0.16 J	0.52 J	0.92 U	2.2	0.19 U
Nitrobenzene	NS	NS	0.87 U	0.17 U	0.18 U	0.83 U	0.83 U	0.91 U	0.17 U
NitrosoDiPhenylAmine(NDPA)/DPA	NS	NS	0.77 U	0.15 U	0.16 U	0.74 U	0.74 U	0.81 U	0.15 U
n-Nitrosodi-n-propylamine	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
P-Chloro-M-Cresol	NS	NS	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
Pentachlorophenol	0.8	6.7	0.77 U	0.15 U	0.16 U	0.74 U	0.74 U	0.81 U	0.15 U
Phenanthrene	100	500	0.51 J	1.2	1.4	6.3	4.2	29	0.22
Phenol	0.33	500	0.97 U	0.19 U	0.2 U	0.92 U	0.92 U	1 U	0.19 U
Pyrene	100	500	1.4	2.2	2.7	0.55 U	6.9	39	0.59

**Table 4**  
**NYU Langone Medical Center Kimmel Pavilion**  
 New York, NY  
 Subsurface (Phase II) Investigation Soil Analytical Results  
*Metals*

Client ID Lab Sample ID Date Sampled mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	NYSDEC Part 375 Commercial SCO mg/kg	SB-1 (1-2') L1106844-01 5/14/2011	SB-1 (5-6') L1106844-02 5/14/2011	SB-2 (2-3') L1106844-04 5/14/2011	SB-3 (1-2') L1106844-05 5/14/2011	SB-3 (4-5') L1106844-06 5/14/2011	SB-4 (1-2') L1106844-08 5/15/2011	SB-5 (1-2') L1106844-07 5/15/2011
Aluminum	NS	NS	7,100	9,000	6,200	7,300	5,800	7,400	8,300
Antimony	NS	NS	1.3 J	2.1 J	11	1.2 J	4.4 U	4.2 U	1.7 J
Arsenic	13	16	3.7	11	20	6.4	10	4	5.2
Barium	350	400	43	120	470	140	98	88	110
Beryllium	7.2	590	0.35 J	0.54	0.36 J	0.38 J	0.3 J	0.35 J	0.44 J
Cadmium	2.5	9.3	0.27 J	0.5 J	2.5	0.53 J	0.54 J	0.36 J	0.4 J
Calcium	NS	NS	2,600	11,000	14,000	23,000	6,000	69,000	28,000
Chromium	30	1500	24	15	29	20	66	22	19
Cobalt	NS	NS	16	6.9	8.8	6.3	5.2	7.3	7.4
Copper	50	270	16	37	390	58	91	39	50
Iron	NS	NS	17,000	14,000	37,000	16,000	13,000	15,000	15,000
Lead	63	1000	30	84	770	240	370	120	150
Magnesium	NS	NS	30,000	5,600	3,000	11,000	2,600	17,000	9,900
Manganese	1600	10000	280	190	330	200	180	230	280
Mercury	0.18	2.8	0.06 J	0.23	0.8	1.3	1.4	0.4	0.66
Nickel	30	310	270	49	42	17	14	58	28
Potassium	NS	NS	2,400	1,500	1,800	2,800	1,800	2,400	3,500
Selenium	3.9	1500	1.8 U	1.1 J	1.2 J	0.68 J	0.53 J	0.37 J	2 U
Silver	2	1500	0.93 U	0.19 J	1.8	0.55 J	0.36 J	0.23 J	0.26 J
Sodium	NS	NS	2,800	3,200	2,800	2,800	2,600	2,700	3,000
Thallium	NS	NS	1.8 U	1.7 U	2 U				
Vanadium	NS	NS	18	19	25	28	29	37	26
Zinc	109	10000	38	130	730	180	210	80	130

**Table 4**  
**NYU Langone Medical Center Kimmel Pavilion**  
 New York, NY  
 Subsurface (Phase II) Investigation Soil Analytical Results  
*Metals*

Client ID Lab Sample ID Date Sampled mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	NYSDEC Part 375 Commercial SCO mg/kg	SB-6 (1-2') L1106844-09 5/15/2011	SB-7 (1-2') L1107126-01 5/20/2011	SB-7 (4-5') L1107126-02 5/20/2011	SB-8 (1-2') L1107126-03 5/20/2011	SB-9 (1-2') L1107126-05 5/20/2011	SB-9 (3-4') L1107126-06 5/20/2011	SB-10 (1-2') L1107126-07 5/20/2011
Aluminum	NS	NS	6,900	5,800	7,800	7,600	5,200	8,700	10,000
Antimony	NS	NS	0.96 J	2 J	1.4 J	0.9 J	1.1 J	3.1 J	1.2 J
Arsenic	13	16	6	9.7	8.4	4.4	5.2	21	8.4
Barium	350	400	240	110	130	130	61	170	110
Beryllium	7.2	590	0.37 J	0.41	0.52	0.37 J	0.32 J	1.3	0.61
Cadmium	2.5	9.3	0.39 J	0.35 J	0.37 J	0.46 J	0.29 J	0.56 J	1.2
Calcium	NS	NS	97,000	13,000	13,000	30,000	15,000	6,900	5,500
Chromium	30	1500	11	14	18	17	9.5	12	19
Cobalt	NS	NS	5.8	6.4	7.8	5.4	5.6	14	6.6
Copper	50	270	43	280	59	57	36	84	39
Iron	NS	NS	14,000	18,000	21,000	13,000	12,000	30,000	16,000
Lead	63	1000	110	350	530	200	82	62	180
Magnesium	NS	NS	7,900	7,000	5,600	9,700	8,100	1,900	2,600
Manganese	1600	10000	240	240	330	230	200	400	270
Mercury	0.18	2.8	0.33	0.8	0.75	0.4	0.75	0.05 J	0.4
Nickel	30	310	14	14	17	13	13	36	20
Potassium	NS	NS	2,300	1,600	2,100	2,000	850	1,000	1,200
Selenium	3.9	1500	1.6 U	0.52 J	0.84 J	0.46 J	0.4 J	1.6 J	0.49 J
Silver	2	1500	0.8 U	0.55 J	0.75 J	0.3 J	0.22 J	0.33 J	0.22 J
Sodium	NS	NS	2,600	330	390	520	230	620	330
Thallium	NS	NS	1.6 U	0.72 J	0.85 J	0.61 J	1.8 U	1.7 J	0.83 J
Vanadium	NS	NS	19	21	24	22	16	35	33
Zinc	109	10000	120	140	130	150	63	40	140

**Table 5**  
**NYU Langone Medical Center Kimmel Pavilion**  
**New York, NY**

Subsurface (Phase II) Investigation Soil Analytical Results  
*Polychlorinated Biphenyls & Pesticides*

Client ID Lab Sample ID Date Sampled Dilution	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Commercial SCO	SB-1 (1-2') L1106844-01 5/14/2011 1	SB-1 (5-6') L1106844-02 5/14/2011 1	SB-2 (2-3') L1106844-04 5/14/2011 1	SB-3 (1-2') L1106844-05 5/14/2011 1	SB-3 (4-5') L1106844-06 5/14/2011 1	SB-4 (1-2') L1106844-08 5/15/2011 1	SB-5 (1-2') L1106844-07 5/15/2011 1
<b>Polychlorinated Biphenyls - mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>							
Aroclor 1016	0.1	1	0.0415 U	0.0375 U	0.0389 U	0.0378 U	0.0371 U	0.037 U	0.0426 U
Aroclor 1221	0.1	1	0.0415 U	0.0375 U	0.0389 U	0.0378 U	0.0371 U	0.037 U	0.0426 U
Aroclor 1232	0.1	1	0.0415 U	0.0375 U	0.0389 U	0.0378 U	0.0371 U	0.037 U	0.0426 U
Aroclor 1242	0.1	1	0.0415 U	0.0375 U	0.0389 U	0.0378 U	0.0371 U	0.037 U	0.0426 U
Aroclor 1248	0.1	1	0.0415 U	0.0375 U	0.0389 U	0.0378 U	0.0371 U	0.037 U	0.0426 U
Aroclor 1254	0.1	1	0.00812 J	0.0451	0.0376 J	0.05	0.0217 J	0.0475	0.0983
Aroclor 1260	0.1	1	0.0415 U	0.0249 J	0.0389 U	0.0378 U	0.0371 U	0.037 U	0.0426 U
<b>Total PCBs</b>	<b>0.01</b>	<b>1</b>	0.00812	0.07	0.0376	0.05	0.0217	0.0475	0.0983

**Pesticides - mg/kg**

Dilution			1	10	10	20	50	20	20
4,4'-DDD	0.0033	92	0.00204 U	0.0184 U	0.00853 J	0.0305 J	0.0944 U	0.0368 U	0.0389 U
4,4'-DDE	0.0033	62	0.00365	0.0184 U	0.00946 J	0.0342 U	0.0944 U	0.0368 U	0.0389 U
4,4'-DDT	0.0033	47	0.00626	0.0154 J	0.025 J	0.0641 U	0.177 U	0.069 U	0.0729 U
Aldrin	0.005	0.68	0.00204 U	0.0184 U	0.0188 U	0.0342 U	0.0944 U	0.0368 U	0.0389 U
Alpha-BHC	0.02	3.4	0.00085 U	0.00765 U	0.00782 U	0.0142 U	0.0393 U	0.0153 U	0.0162 U
Beta-BHC	0.036	3	0.00204 U	0.0184 U	0.0188 U	0.0342 U	0.0944 U	0.0368 U	0.0389 U
Chlordane	0.094	24	0.0166 U	0.149 U	0.152 U	0.278 U	0.767 U	0.299 U	0.316 U
Delta-BHC	0.04	500	0.00204 U	0.0184 U	0.0188 U	0.0342 U	0.0944 U	0.0368 U	0.0389 U
Dieldrin	0.005	1.4	0.00296	0.0115 U	0.0117 U	0.0214 U	0.059 U	0.023 U	0.0243 U
Endosulfan I	2.4	NS	0.00204 U	0.0184 U	0.0188 U	0.0342 U	0.0944 U	0.0368 U	0.0389 U
Endosulfan II	2.4	NS	0.00204 U	0.0184 U	0.0188 U	0.0342 U	0.0944 U	0.0368 U	0.0389 U
Endosulfan sulfate	2.4	NS	0.00085 U	0.00765 U	0.00782 U	0.0142 U	0.0393 U	0.0153 U	0.0162 U
Endrin	0.014	89	0.00085 U	0.00765 U	0.00782 U	0.0142 U	0.0393 U	0.0153 U	0.0162 U
Endrin ketone	NS	NS	0.00204 U	0.0184 U	0.0188 U	0.0342 U	0.0944 U	0.0368 U	0.0389 U
Heptachlor	0.042	15	0.00102 U	0.00918 U	0.00939 U	0.0171 U	0.0472 U	0.0184 U	0.0194 U
Heptachlor epoxide	NS	NS	0.00382 U	0.0344 U	0.0352 U	0.0641 U	0.177 U	0.069 U	0.0729 U
Lindane	0.1	9.2	0.00085 U	0.00765 U	0.00782 U	0.0142 U	0.0393 U	0.0153 U	0.0162 U
Methoxychlor	NS	NS	0.00382 U	0.0344 U	0.0352 U	0.0641 U	0.177 U	0.069 U	0.0729 U
Toxaphene	NS	NS	0.0382 U	0.344 U	0.352 U	0.641 U	1.77 U	0.69 U	0.729 U
trans-Chlordane	NS	NS	0.00255 U	0.0229 U	0.0235 U	0.0427 U	0.118 U	0.046 U	0.0486 U

**Table 5**  
**NYU Langone Medical Center Kimmel Pavilion**  
**New York, NY**

Subsurface (Phase II) Investigation Soil Analytical Results  
*Polychlorinated Biphenyls & Pesticides*

Client ID Lab Sample ID Date Sampled Dilution	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Commercial SCO	SB-6 (1-2') L1106844-09 5/15/2011 1	SB-7 (1-2') L1107126-01 5/20/2011 1	SB-7 (4-5') L1107126-02 5/20/2011 1	SB-8 (1-2') L1107126-03 5/20/2011 1	SB-9 (1-2') L1107126-05 5/20/2011 1	SB-9 (3-4') L1107126-06 5/20/2011 1	SB-10 (1-2') L1107126-07 5/20/2011 50
Polychlorinated Biphenyls - mg/kg	mg/kg	mg/kg							
Aroclor 1016	0.1	1	0.0382 U	0.0378 U	0.0412 U	0.0359 U	0.0372 U	0.0412 U	1.95 U
Aroclor 1221	0.1	1	0.0382 U	0.0378 U	0.0412 U	0.0359 U	0.0372 U	0.0412 U	1.95 U
Aroclor 1232	0.1	1	0.0382 U	0.0378 U	0.0412 U	0.0359 U	0.0372 U	0.0412 U	1.95 U
Aroclor 1242	0.1	1	0.0382 U	0.0378 U	0.0412 U	0.0359 U	0.0372 U	0.0412 U	1.95 U
Aroclor 1248	0.1	1	0.0382 U	0.0378 U	0.0412 U	0.0359 U	0.0372 U	0.0412 U	1.95 U
Aroclor 1254	0.1	1	0.0145 J	0.0378 U	0.0122 J	0.0548	0.0372 U	0.0412 U	7.25
Aroclor 1260	0.1	1	0.0382 U	0.0378 U	0.0412 U	0.0359 U	0.0372 U	0.0412 U	1.95 U
<b>Total PCBs</b>	<b>0.01</b>	<b>1</b>	0.0145	ND	0.0122	0.0548	ND	ND	<b>7.25</b>

**Pesticides - mg/kg**

Dilution			20	10	20	50	20	50	10
4,4'-DDD	0.0033	92	0.0378 U	0.0178 U	0.0395 U	0.0883 U	0.0422	0.0981 U	0.0188 U
4,4'-DDE	0.0033	62	0.0378 U	0.0178 U	0.0395 U	0.0883 U	0.473	0.0981 U	0.00548 J
4,4'-DDT	0.0033	47	0.0709 U	0.0333 U	0.074 U	0.166 U	0.946	0.184 U	0.024 J
Aldrin	0.005	0.68	0.0378 U	0.0178 U	0.0395 U	0.0883 U	0.0346 U	0.0981 U	0.0188 U
Alpha-BHC	0.02	3.4	0.0157 U	0.00741 U	0.0164 U	0.0368 U	0.0144 U	0.0409 U	0.00783 U
Beta-BHC	0.036	3	0.0378 U	0.0178 U	0.0395 U	0.0883 U	0.0346 U	0.0981 U	0.0188 U
Chlordane	0.094	24	0.307 U	0.144 U	0.321 U	0.718 U	0.281 U	0.797 U	0.153 U
Delta-BHC	0.04	500	0.0378 U	0.0178 U	0.0395 U	0.0883 U	0.0346 U	0.0981 U	0.0188 U
Dieldrin	0.005	1.4	0.0236 U	0.0111 U	0.0247 U	0.0552 U	0.0216 U	0.0613 U	0.00627 J
Endosulfan I	2.4	NS	0.0378 U	0.0178 U	0.0395 U	0.0883 U	0.0346 U	0.0981 U	0.0188 U
Endosulfan II	2.4	NS	0.0378 U	0.0178 U	0.0395 U	0.0883 U	0.0346 U	0.0981 U	0.0188 U
Endosulfan sulfate	2.4	NS	0.0157 U	0.00741 U	0.0164 U	0.0368 U	0.0144 U	0.0409 U	0.00783 U
Endrin	0.014	89	0.0157 U	0.00741 U	0.0164 U	0.0368 U	0.0144 U	0.0409 U	0.00548 J
Endrin ketone	NS	NS	0.0378 U	0.0178 U	0.0395 U	0.0883 U	0.0346 U	0.0981 U	0.0188 U
Heptachlor	0.042	15	0.0189 U	0.00889 U	0.0197 U	0.0442 U	0.0173 U	0.049 U	0.0094 U
Heptachlor epoxide	NS	NS	0.0709 U	0.0333 U	0.074 U	0.166 U	0.0648 U	0.184 U	0.0352 U
Lindane	0.1	9.2	0.0157 U	0.00741 U	0.0164 U	0.0368 U	0.0144 U	0.0409 U	0.00783 U
Methoxychlor	NS	NS	0.0709 U	0.0333 U	0.074 U	0.166 U	0.0648 U	0.184 U	0.0352 U
Toxaphene	NS	NS	0.709 U	0.333 U	0.74 U	1.66 U	0.648 U	1.84 U	0.352 U
trans-Chlordane	NS	NS	0.0472 U	0.0222 U	0.0493 U	0.11 U	0.0432 U	0.123 U	0.0235 U

**Table 6**  
**NYU Langone Medical Center Kimmel Pavilion**

New York, NY

Subsurface (Phase II) Investigation Groundwater Analytical Results  
*Semi-Volatile Organic Compounds*

Client ID	NYSDEC	SB-7 (GW)
Lab Sample ID	Class GA	L1107126-04
Date Sampled	Ambient Standard	5/20/2011
$\mu\text{g/L}$	$\mu\text{g/L}$	
2-Chloronaphthalene	10	0.2 U
2-Methylnaphthalene	NS	0.2 U
Acenaphthene	20	0.2 U
Acenaphthylene	NS	0.2 U
Anthracene	50	0.2 U
Benzo(a)anthracene	0.002	0.12 J
Benzo(a)pyrene	NS	0.19 J
Benzo(b)fluoranthene	0.002	0.15 J
Benzo(ghi)perylene	NS	0.18 J
Benzo(k)fluoranthene	0.002	0.17 J
Chrysene	0.002	0.13 J
Dibenzo(a,h)anthracene	NS	0.2 U
Fluoranthene	50	0.15 J
Fluorene	50	0.2 U
Hexachlorobenzene	0.04	0.8 U
Hexachlorobutadiene	0.5	0.5 U
Hexachloroethane	5	0.8 U
Indeno(1,2,3-cd)Pyrene	0.002	0.15 J
Naphthalene	10	0.2 U
Pentachlorophenol	NS	0.8 U
Phenanthrene	50	0.08 J
Pyrene	50	0.15 J

**Table 7**  
**NYU Langone Medical Center Kimmel Pavilion**  
**New York, NY**  
 Subsurface (Phase II) Investigation Groundwater Analytical Results  
*Metals (Total & Dissolved)*

Client ID	NYSDEC	SB-7 (GW)
Lab Sample ID	Class GA	L1107126-04
Date Sampled	Ambient Standard	5/20/2011
Metals, Total - µg/L	µg/L	
Aluminum	NS	29,000
Antimony	3	4.7 J
Arsenic	25	57
Barium	1,000	1,010
Beryllium	3	2.1 J
Cadmium	5	50 U
Calcium	NS	410,000
Chromium	50	80 J
Cobalt	NS	38 J
Copper	200	442
Iron	300+	75,000
Lead	25	3100
Magnesium	35,000	360,000
Manganese	300+	1,520
Mercury	0.7	7.5
Nickel	100	84 J
Potassium	NS	130,000
Selenium	10	100 U
Silver	50	70 U
Sodium	20,000	3,000,000
Thallium	0.5	1.6 J
Vanadium	NS	106
Zinc	2,000	1,190

**Metals, Dissolved - µg/L**

Aluminum	NS	1,000 U
Antimony	3	20 U
Arsenic	25	50 U
Barium	1,000	261
Beryllium	3	10 U
Cadmium	5	50 U
Calcium	NS	350,000
Chromium	50	100 U
Cobalt	NS	200 U
Copper	200	100 U
Iron	300+	690
Lead	25	100 U
Magnesium	35,000	320,000
Manganese	300+	29 J
Mercury	0.7	0.099 J
Nickel	100	250 U
Potassium	NS	120,000
Selenium	10	100 U
Silver	50	70 U
Sodium	20,000	3,000,000
Thallium	0.5	10 U
Vanadium	NS	100 U
Zinc	2,000	78 J

**Table 8**  
**NYU Langone Medical Center Kimmel Pavilion**  
**New York, NY**  
Subsurface (Phase II) Investigation Groundwater Analytical Results  
*Pesticides*

Client ID Lab Sample ID Date Sampled	NYSDEC Class GA Ambient Standard	SB-7 (GW) L1107126-04 5/20/2011
µg/L	µg/L	
4,4'-DDD	0.3	0.045 U
4,4'-DDE	0.2	0.045 U
4,4'-DDT	0.2	0.008 J
Aldrin	NS	0.023 U
Alpha-BHC	0.01	0.023 U
Beta-BHC	0.04	0.023 U
Chlordane	0.05	0.227 U
Delta-BHC	0.04	0.023 U
Dieldrin	0.004	0.045 U
Endosulfan I	NS	0.023 U
Endosulfan II	NS	0.045 U
Endosulfan sulfate	NS	0.045 U
Endrin	NS	0.045 U
Endrin ketone	5	0.045 U
Heptachlor	0.04	0.023 U
Heptachlor epoxide	0.03	0.023 U
Lindane	0.05	0.023 U
Methoxychlor	35	0.227 U
Toxaphene	0.06	0.227 U
trans-Chlordane	0.05	0.023 U

**Tables 2-8**  
**NYU Langone Medical Center Kimmel Pavilion**  
**New York, NY**  
Subsurface (Phase II) Investigation Analytical Results  
*Notes*

**GENERAL**

- NS** : No soil cleanup objective listed.
- U** : The analyte was not detected at the indicated concentration.
- ND** : Not detected.
- J** : The concentration given is an estimated value.

**Exceedences are highlighted in bold font.**

**SOIL**

- Part 375 Soil Cleanup Objectives** : Soil Clean-up Objectives listed in NYSDEC (New York State Department of Environmental Conservation) "Part 375" Regulations (6 NYCRR Park 375).
- mg/kg** : milligrams per kilogram = parts per million (ppm)

**GROUNDWATER**

- NYSDEC Class GA Ambient Standard** : New York State Department of Environmental Conservation Technical and Operational Guidance Series (1.1.1): Class GA Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
- µg/L** : micrograms per Liter = parts per billion (ppb)

## **Appendix A**

### ***Previous Investigation Reports***

## **Appendix B**

### ***Soil Vapor Sampling Logs***

**Job No:** 11243      **Client:** NYU  
**Project Location:** NYULMC Kimmel      **Sampled By:** EN  
**Date:** 8/14/13

**Sample ID:** SV-1  
**Canister ID:** 1866  
**Flow Controller ID:** 0455

**Purging**

**Time Started:** 08:52  
**Time Stopped:** 08:57  
**Vol. Purged:** 1 liters  
**Flow Rate:** 0.2 L/min

**Laboratory Sample (Summa Canister)**

**Time Started:** 09:00      **Vacuum:** -29.79 inHg  
**Time Stopped:** 11:00      **Vacuum:** -5.64 inHg

**Field Sample**

**PID Calibration:** 100 ppm isobutylene  
**Time Started:** 08:58  
**Time Stopped:** 08:59  
**PID Reading:** 4.9 ppm  
**He Reading:** 0.0 %

**Job No:** 11243      **Client:** NYU  
**Project Location:** NYULMC Kimmel      **Sampled By:** EN  
**Date:** 8/14/13

**Sample ID:** SV-2  
**Canister ID:** 1909  
**Flow Controller ID:** 0443

**Purging**

**Time Started:** 09:25  
**Time Stopped:** 09:30  
**Vol. Purged:** 1 liters  
**Flow Rate:** 0.2 L/min

**Laboratory Sample (Summa Canister)**

**Time Started:** 09:32      **Vacuum:** -30.47 inHg  
**Time Stopped:** 11:32      **Vacuum:** -6.16 inHg

**Field Sample**

**PID Calibration:** 100 ppm isobutylene  
**Time Started:** 09:30  
**Time Stopped:** 09:31  
**PID Reading:** 10.4 ppm  
**He Reading:** 0.0 %

**Job No:** 11243      **Client:** NYU  
**Project Location:** NYULMC Kimmel      **Sampled By:** EN  
**Date:** 8/14/13

**Sample ID:** SV-3  
**Canister ID:** 1574  
**Flow Controller ID:** 0352

**Purging**

**Time Started:** 10:07  
**Time Stopped:** 10:12  
**Vol. Purged:** 1 liters  
**Flow Rate:** 0.2 L/min

**Laboratory Sample (Summa Canister)**

**Time Started:** 10:13      **Vacuum:** -29.98 inHg  
**Time Stopped:** 12:13      **Vacuum:** -7.25 inHg

**Field Sample**

**PID Calibration:** 100 ppm isobutylene  
**Time Started:** 10:12  
**Time Stopped:** 10:13  
**PID Reading:** 14.4 ppm  
**He Reading:** 0.0 %

**Job No:** 11243      **Client:** NYU  
**Project Location:** NYULMC Kimmel      **Sampled By:** EN  
**Date:** 8/14/13

**Sample ID:** SV-4  
**Canister ID:** 609  
**Flow Controller ID:** 0336

**Purging**

**Time Started:** 11:06  
**Time Stopped:** 11:11  
**Vol. Purged:** 1 liters  
**Flow Rate:** 0.2 L/min

**Laboratory Sample (Summa Canister)**

**Time Started:** 11:12      **Vacuum:** -29.82 inHg  
**Time Stopped:** 13:12      **Vacuum:** -14.63 inHg

**Field Sample**

**PID Calibration:** 100 ppm isobutylene  
**Time Started:** 11:11  
**Time Stopped:** 11:12  
**PID Reading:** 4.5 ppm  
**He Reading:** 0.0 %

**Job No:** 11243 **Client:** NYU  
**Project Location:** NYULMC Kimmel **Sampled By:** EN  
**Date:** 8/14/13

**Sample ID:** SV-5  
**Canister ID:** 782  
**Flow Controller ID:** 0005

**Purging**

**Time Started:** 15:13  
**Time Stopped:** 15:18  
**Vol. Purged:** 1 liters  
**Flow Rate:** 0.2 L/min

**Laboratory Sample (Summa Canister)**

**Time Started:** 15:20 **Vacuum:** -30.30 inHg  
**Time Stopped:** 17:20 **Vacuum:** -8.26 inHg

**Field Sample**

**PID Calibration:** 100 ppm isobutylene  
**Time Started:** 15:18  
**Time Stopped:** 15:19  
**PID Reading:** 1.5 ppm  
**He Reading:** 0.0 %

**Job No:** 11243      **Client:** NYU  
**Project Location:** NYULMC Kimmel      **Sampled By:** EN  
**Date:** 8/14/13

**Sample ID:** SV-6  
**Canister ID:** 595  
**Flow Controller ID:** 0080

**Purging**

**Time Started:** 15:49  
**Time Stopped:** 15:54  
**Vol. Purged:** 1 liters  
**Flow Rate:** 0.2 L/min

**Laboratory Sample (Summa Canister)**

**Time Started:** 15:55      **Vacuum:** -30.30 inHg  
**Time Stopped:** 17:55      **Vacuum:** -2.90 inHg

**Field Sample**

**PID Calibration:** 100 ppm isobutylene  
**Time Started:** 15:54  
**Time Stopped:** 15:55  
**PID Reading:** 2.8 ppm  
**He Reading:** 0.0 %

**Job No:** 11243 **Client:** NYU  
**Project Location:** NYULMC Kimmel **Sampled By:** EN  
**Date:** 8/14/13

**Sample ID:** SV-7  
**Canister ID:** 1902  
**Flow Controller ID:** 0022

**Purging**

**Time Started:** 16:06  
**Time Stopped:** 16:11  
**Vol. Purged:** 1 liters  
**Flow Rate:** 0.2 L/min

**Laboratory Sample (Summa Canister)**

**Time Started:** 16:13 **Vacuum:** -30.11 inHg  
**Time Stopped:** 18:11 **Vacuum:** -0.0 inHg

**Field Sample**

**PID Calibration:** 100 ppm isobutylene  
**Time Started:** 16:11  
**Time Stopped:** 16:12  
**PID Reading:** 1.8 ppm  
**He Reading:** 0.0 %

## **Appendix C**

### ***Laboratory Analytical Data Deliverables***



## ANALYTICAL REPORT

Lab Number:	L1315930
Client:	AKRF, Inc. 440 Park Avenue South 7th Floor New York, NY 10016
ATTN:	Asya Bychkov
Phone:	(646) 388-9533
Project Name:	NYU LMC-KIMMEL
Project Number:	11243
Report Date:	08/22/13

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** NYU LMC-KIMMEL  
**Project Number:** 11243

**Lab Number:** L1315930  
**Report Date:** 08/22/13

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1315930-01	SV-1	NEW YORK, NY	08/14/13 11:00
L1315930-02	SV-2	NEW YORK, NY	08/14/13 11:32
L1315930-03	SV-3	NEW YORK, NY	08/14/13 12:13
L1315930-04	SV-4	NEW YORK, NY	08/14/13 13:12
L1315930-05	SV-5	NEW YORK, NY	08/14/13 17:20
L1315930-06	SV-6	NEW YORK, NY	08/14/13 17:55
L1315930-07	SV-7	NEW YORK, NY	08/14/13 18:11
L1315930-08	CAN 646	NEW YORK, NY	

**Project Name:** NYU LMC-KIMMEL  
**Project Number:** 11243

**Lab Number:** L1315930  
**Report Date:** 08/22/13

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

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**Project Name:** NYU LMC-KIMMEL  
**Project Number:** 11243

**Lab Number:** L1315930  
**Report Date:** 08/22/13

### Case Narrative (continued)

#### Volatile Organics in Air

Canisters were released from the laboratory on August 12, 2013. The canister certification results are provided as an addendum.

Sample L1315930-04; the RPD of the pre- and post-flow controller calibration check (22% RPD) was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 36 mL/minute; the final flow rate was 45 mL/minute. The final pressure recorded by the laboratory of the associated canister was -15.1 inches of mercury.

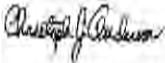
Sample L1315930-07; the RPD of the pre- and post-flow controller calibration check (38% RPD) was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 36 mL/minute; the final flow rate was 53 mL/minute. The final pressure recorded by the laboratory of the associated canister was 0.0 inches of mercury.

Samples L1315930-01 through -07 have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the samples.

Samples L1315930-01 through -04, -06, and -07 results for Propylene should be considered estimated due to co-elution with a non-target peak.

Samples L1315930-01, -02, -07 and WG630330-5 Duplicate results for 2,2,4-Trimethylpentane should be considered estimated due to co-elution with a non-target peak.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Christopher J. Anderson

Title: Technical Director/Representative

Date: 08/22/13

**AIR**

**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-01 D

Date Collected: 08/14/13 11:00

Client ID: SV-1

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Matrix: Soil\_Vapor

Analytical Method: 48,TO-15

Analytical Date: 08/20/13 17:50

Analyst: MR

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Propylene	64.8	2.50	--	112	4.30	--		5
Dichlorodifluoromethane	1.88	1.00	--	9.30	4.94	--		5
Chloromethane	ND	1.00	--	ND	2.07	--		5
Freon-114	ND	1.00	--	ND	6.99	--		5
Vinyl chloride	ND	1.00	--	ND	2.56	--		5
1,3-Butadiene	1.94	1.00	--	4.29	2.21	--		5
Bromomethane	ND	1.00	--	ND	3.88	--		5
Chloroethane	ND	1.00	--	ND	2.64	--		5
Ethanol	356	12.5	--	671	23.6	--		5
Vinyl bromide	ND	1.00	--	ND	4.37	--		5
Acetone	292	5.00	--	694	11.9	--		5
Trichlorofluoromethane	ND	1.00	--	ND	5.62	--		5
Isopropanol	4.53	2.50	--	11.1	6.15	--		5
1,1-Dichloroethene	ND	1.00	--	ND	3.96	--		5
Methylene chloride	ND	5.00	--	ND	17.4	--		5
3-Chloropropene	ND	1.00	--	ND	3.13	--		5
Carbon disulfide	8.42	1.00	--	26.2	3.11	--		5
Freon-113	ND	1.00	--	ND	7.66	--		5
trans-1,2-Dichloroethene	ND	1.00	--	ND	3.96	--		5
1,1-Dichloroethane	ND	1.00	--	ND	4.05	--		5
Methyl tert butyl ether	ND	1.00	--	ND	3.61	--		5
Vinyl acetate	ND	1.00	--	ND	3.52	--		5
2-Butanone	8.70	1.00	--	25.7	2.95	--		5
cis-1,2-Dichloroethene	ND	1.00	--	ND	3.96	--		5



**Project Name:** NYU LMC-KIMMEL  
**Project Number:** 11243

**Lab Number:** L1315930  
**Report Date:** 08/22/13

**SAMPLE RESULTS**

Lab ID: L1315930-01 D  
 Client ID: SV-1  
 Sample Location: NEW YORK, NY

Date Collected: 08/14/13 11:00  
 Date Received: 08/15/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	2.50	--	ND	9.01	--		5
Chloroform	1.90	1.00	--	9.28	4.88	--		5
Tetrahydrofuran	ND	1.00	--	ND	2.95	--		5
1,2-Dichloroethane	ND	1.00	--	ND	4.05	--		5
n-Hexane	55.2	1.00	--	195	3.52	--		5
1,1,1-Trichloroethane	ND	1.00	--	ND	5.46	--		5
Benzene	44.1	1.00	--	141	3.19	--		5
Carbon tetrachloride	ND	1.00	--	ND	6.29	--		5
Cyclohexane	6.75	1.00	--	23.2	3.44	--		5
1,2-Dichloropropane	ND	1.00	--	ND	4.62	--		5
Bromodichloromethane	ND	1.00	--	ND	6.70	--		5
1,4-Dioxane	ND	1.00	--	ND	3.60	--		5
Trichloroethene	1.00	1.00	--	5.37	5.37	--		5
2,2,4-Trimethylpentane	2.76	1.00	--	12.9	4.67	--		5
Heptane	34.4	1.00	--	141	4.10	--		5
cis-1,3-Dichloropropene	ND	1.00	--	ND	4.54	--		5
4-Methyl-2-pentanone	ND	1.00	--	ND	4.10	--		5
trans-1,3-Dichloropropene	ND	1.00	--	ND	4.54	--		5
1,1,2-Trichloroethane	ND	1.00	--	ND	5.46	--		5
Toluene	320	1.00	--	1210	3.77	--		5
2-Hexanone	ND	1.00	--	ND	4.10	--		5
Dibromochloromethane	ND	1.00	--	ND	8.52	--		5
1,2-Dibromoethane	ND	1.00	--	ND	7.69	--		5
Tetrachloroethene	1.28	1.00	--	8.68	6.78	--		5
Chlorobenzene	ND	1.00	--	ND	4.61	--		5
Ethylbenzene	29.1	1.00	--	126	4.34	--		5
p/m-Xylene	97.8	2.00	--	425	8.69	--		5
Bromoform	ND	1.00	--	ND	10.3	--		5



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-01 D

Date Collected: 08/14/13 11:00

Client ID: SV-1

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
<b>Volatile Organics in Air - Mansfield Lab</b>								
Styrene	ND	1.00	--	ND	4.26	--		5
1,1,2,2-Tetrachloroethane	ND	1.00	--	ND	6.87	--		5
o-Xylene	20.2	1.00	--	87.7	4.34	--		5
4-Ethyltoluene	1.50	1.00	--	7.37	4.92	--		5
1,3,5-Trimethylbenzene	ND	1.00	--	ND	4.92	--		5
1,2,4-Trimethylbenzene	1.79	1.00	--	8.80	4.92	--		5
Benzyl chloride	ND	1.00	--	ND	5.18	--		5
1,3-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,4-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,2-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,2,4-Trichlorobenzene	ND	1.00	--	ND	7.42	--		5
Hexachlorobutadiene	ND	1.00	--	ND	10.7	--		5

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	95		60-140
Bromochloromethane	94		60-140
chlorobenzene-d5	96		60-140



**Project Name:** NYU LMC-KIMMEL  
**Project Number:** 11243

**Lab Number:** L1315930  
**Report Date:** 08/22/13

### SAMPLE RESULTS

Lab ID: L1315930-02 D  
 Client ID: SV-2  
 Sample Location: NEW YORK, NY  
 Matrix: Soil\_Vapor  
 Analytical Method: 48,TO-15  
 Analytical Date: 08/20/13 18:52  
 Analyst: MR

Date Collected: 08/14/13 11:32  
 Date Received: 08/15/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Propylene	197	2.50	--	339	4.30	--		5
Dichlorodifluoromethane	1.04	1.00	--	5.14	4.94	--		5
Chloromethane	ND	1.00	--	ND	2.07	--		5
Freon-114	ND	1.00	--	ND	6.99	--		5
Vinyl chloride	ND	1.00	--	ND	2.56	--		5
1,3-Butadiene	11.0	1.00	--	24.3	2.21	--		5
Bromomethane	ND	1.00	--	ND	3.88	--		5
Chloroethane	ND	1.00	--	ND	2.64	--		5
Ethanol	302	12.5	--	569	23.6	--		5
Vinyl bromide	ND	1.00	--	ND	4.37	--		5
Acetone	267	5.00	--	634	11.9	--		5
Trichlorofluoromethane	ND	1.00	--	ND	5.62	--		5
Isopropanol	3.30	2.50	--	8.11	6.15	--		5
1,1-Dichloroethene	ND	1.00	--	ND	3.96	--		5
Methylene chloride	ND	5.00	--	ND	17.4	--		5
3-Chloropropene	ND	1.00	--	ND	3.13	--		5
Carbon disulfide	10.4	1.00	--	32.4	3.11	--		5
Freon-113	ND	1.00	--	ND	7.66	--		5
trans-1,2-Dichloroethene	ND	1.00	--	ND	3.96	--		5
1,1-Dichloroethane	ND	1.00	--	ND	4.05	--		5
Methyl tert butyl ether	ND	1.00	--	ND	3.61	--		5
Vinyl acetate	ND	1.00	--	ND	3.52	--		5
2-Butanone	7.61	1.00	--	22.4	2.95	--		5
cis-1,2-Dichloroethene	ND	1.00	--	ND	3.96	--		5



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-02 D

Date Collected: 08/14/13 11:32

Client ID: SV-2

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	2.50	--	ND	9.01	--		5
Chloroform	ND	1.00	--	ND	4.88	--		5
Tetrahydrofuran	ND	1.00	--	ND	2.95	--		5
1,2-Dichloroethane	ND	1.00	--	ND	4.05	--		5
n-Hexane	56.4	1.00	--	199	3.52	--		5
1,1,1-Trichloroethane	13.3	1.00	--	72.6	5.46	--		5
Benzene	45.2	1.00	--	144	3.19	--		5
Carbon tetrachloride	ND	1.00	--	ND	6.29	--		5
Cyclohexane	15.4	1.00	--	53.0	3.44	--		5
1,2-Dichloropropane	ND	1.00	--	ND	4.62	--		5
Bromodichloromethane	ND	1.00	--	ND	6.70	--		5
1,4-Dioxane	ND	1.00	--	ND	3.60	--		5
Trichloroethene	ND	1.00	--	ND	5.37	--		5
2,2,4-Trimethylpentane	10.0	1.00	--	46.7	4.67	--		5
Heptane	38.8	1.00	--	159	4.10	--		5
cis-1,3-Dichloropropene	ND	1.00	--	ND	4.54	--		5
4-Methyl-2-pentanone	ND	1.00	--	ND	4.10	--		5
trans-1,3-Dichloropropene	ND	1.00	--	ND	4.54	--		5
1,1,2-Trichloroethane	ND	1.00	--	ND	5.46	--		5
Toluene	292	1.00	--	1100	3.77	--		5
2-Hexanone	ND	1.00	--	ND	4.10	--		5
Dibromochloromethane	ND	1.00	--	ND	8.52	--		5
1,2-Dibromoethane	ND	1.00	--	ND	7.69	--		5
Tetrachloroethene	ND	1.00	--	ND	6.78	--		5
Chlorobenzene	ND	1.00	--	ND	4.61	--		5
Ethylbenzene	23.3	1.00	--	101	4.34	--		5
p/m-Xylene	76.4	2.00	--	332	8.69	--		5
Bromoform	ND	1.00	--	ND	10.3	--		5



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-02 D

Date Collected: 08/14/13 11:32

Client ID: SV-2

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Styrene	ND	1.00	--	ND	4.26	--		5
1,1,2,2-Tetrachloroethane	ND	1.00	--	ND	6.87	--		5
o-Xylene	15.0	1.00	--	65.2	4.34	--		5
4-Ethyltoluene	ND	1.00	--	ND	4.92	--		5
1,3,5-Trimethylbenzene	ND	1.00	--	ND	4.92	--		5
1,2,4-Trimethylbenzene	1.36	1.00	--	6.69	4.92	--		5
Benzyl chloride	ND	1.00	--	ND	5.18	--		5
1,3-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,4-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,2-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,2,4-Trichlorobenzene	ND	1.00	--	ND	7.42	--		5
Hexachlorobutadiene	ND	1.00	--	ND	10.7	--		5

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	97		60-140
Bromochloromethane	96		60-140
chlorobenzene-d5	98		60-140



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-03 D

Date Collected: 08/14/13 12:13

Client ID: SV-3

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Matrix: Soil\_Vapor

Analytical Method: 48,TO-15

Analytical Date: 08/20/13 19:23

Analyst: MR

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Propylene	72.8	5.00	--	125	8.61	--		10
Dichlorodifluoromethane	ND	2.00	--	ND	9.89	--		10
Chloromethane	ND	2.00	--	ND	4.13	--		10
Freon-114	ND	2.00	--	ND	14.0	--		10
Vinyl chloride	ND	2.00	--	ND	5.11	--		10
1,3-Butadiene	ND	2.00	--	ND	4.42	--		10
Bromomethane	ND	2.00	--	ND	7.77	--		10
Chloroethane	ND	2.00	--	ND	5.28	--		10
Ethanol	493	25.0	--	929	47.1	--		10
Vinyl bromide	ND	2.00	--	ND	8.74	--		10
Acetone	687	10.0	--	1630	23.8	--		10
Trichlorofluoromethane	ND	2.00	--	ND	11.2	--		10
Isopropanol	5.09	5.00	--	12.5	12.3	--		10
1,1-Dichloroethene	ND	2.00	--	ND	7.93	--		10
Methylene chloride	ND	10.0	--	ND	34.7	--		10
3-Chloropropene	ND	2.00	--	ND	6.26	--		10
Carbon disulfide	30.5	2.00	--	95.0	6.23	--		10
Freon-113	ND	2.00	--	ND	15.3	--		10
trans-1,2-Dichloroethene	ND	2.00	--	ND	7.93	--		10
1,1-Dichloroethane	ND	2.00	--	ND	8.09	--		10
Methyl tert butyl ether	ND	2.00	--	ND	7.21	--		10
Vinyl acetate	ND	2.00	--	ND	7.04	--		10
2-Butanone	22.4	2.00	--	66.1	5.90	--		10
cis-1,2-Dichloroethene	ND	2.00	--	ND	7.93	--		10



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-03 D

Date Collected: 08/14/13 12:13

Client ID: SV-3

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	5.00	--	ND	18.0	--		10
Chloroform	5.16	2.00	--	25.2	9.77	--		10
Tetrahydrofuran	ND	2.00	--	ND	5.90	--		10
1,2-Dichloroethane	ND	2.00	--	ND	8.09	--		10
n-Hexane	82.0	2.00	--	289	7.05	--		10
1,1,1-Trichloroethane	ND	2.00	--	ND	10.9	--		10
Benzene	63.9	2.00	--	204	6.39	--		10
Carbon tetrachloride	ND	2.00	--	ND	12.6	--		10
Cyclohexane	8.50	2.00	--	29.3	6.88	--		10
1,2-Dichloropropane	ND	2.00	--	ND	9.24	--		10
Bromodichloromethane	ND	2.00	--	ND	13.4	--		10
1,4-Dioxane	ND	2.00	--	ND	7.21	--		10
Trichloroethene	ND	2.00	--	ND	10.7	--		10
2,2,4-Trimethylpentane	3.82	2.00	--	17.8	9.34	--		10
Heptane	41.2	2.00	--	169	8.20	--		10
cis-1,3-Dichloropropene	ND	2.00	--	ND	9.08	--		10
4-Methyl-2-pentanone	ND	2.00	--	ND	8.20	--		10
trans-1,3-Dichloropropene	ND	2.00	--	ND	9.08	--		10
1,1,2-Trichloroethane	ND	2.00	--	ND	10.9	--		10
Toluene	508	2.00	--	1910	7.54	--		10
2-Hexanone	ND	2.00	--	ND	8.20	--		10
Dibromochloromethane	ND	2.00	--	ND	17.0	--		10
1,2-Dibromoethane	ND	2.00	--	ND	15.4	--		10
Tetrachloroethene	ND	2.00	--	ND	13.6	--		10
Chlorobenzene	ND	2.00	--	ND	9.21	--		10
Ethylbenzene	49.2	2.00	--	214	8.69	--		10
p/m-Xylene	169	4.00	--	734	17.4	--		10
Bromoform	ND	2.00	--	ND	20.7	--		10



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-03 D

Date Collected: 08/14/13 12:13

Client ID: SV-3

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Styrene	ND	2.00	--	ND	8.52	--		10
1,1,2,2-Tetrachloroethane	ND	2.00	--	ND	13.7	--		10
o-Xylene	34.1	2.00	--	148	8.69	--		10
4-Ethyltoluene	3.63	2.00	--	17.8	9.83	--		10
1,3,5-Trimethylbenzene	ND	2.00	--	ND	9.83	--		10
1,2,4-Trimethylbenzene	4.53	2.00	--	22.3	9.83	--		10
Benzyl chloride	ND	2.00	--	ND	10.4	--		10
1,3-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,4-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,2-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,2,4-Trichlorobenzene	ND	2.00	--	ND	14.8	--		10
Hexachlorobutadiene	ND	2.00	--	ND	21.3	--		10

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	99		60-140
Bromochloromethane	97		60-140
chlorobenzene-d5	97		60-140



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-04 D  
 Client ID: SV-4  
 Sample Location: NEW YORK, NY  
 Matrix: Soil\_Vapor  
 Analytical Method: 48,TO-15  
 Analytical Date: 08/20/13 19:54  
 Analyst: MR

Date Collected: 08/14/13 13:12  
 Date Received: 08/15/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Propylene	60.2	5.00	--	104	8.61	--		10
Dichlorodifluoromethane	33.4	2.00	--	165	9.89	--		10
Chloromethane	ND	2.00	--	ND	4.13	--		10
Freon-114	ND	2.00	--	ND	14.0	--		10
Vinyl chloride	ND	2.00	--	ND	5.11	--		10
1,3-Butadiene	ND	2.00	--	ND	4.42	--		10
Bromomethane	ND	2.00	--	ND	7.77	--		10
Chloroethane	ND	2.00	--	ND	5.28	--		10
Ethanol	341	25.0	--	643	47.1	--		10
Vinyl bromide	ND	2.00	--	ND	8.74	--		10
Acetone	941	10.0	--	2240	23.8	--		10
Trichlorofluoromethane	2.45	2.00	--	13.8	11.2	--		10
Isopropanol	ND	5.00	--	ND	12.3	--		10
1,1-Dichloroethene	ND	2.00	--	ND	7.93	--		10
Methylene chloride	ND	10.0	--	ND	34.7	--		10
3-Chloropropene	ND	2.00	--	ND	6.26	--		10
Carbon disulfide	3.24	2.00	--	10.1	6.23	--		10
Freon-113	ND	2.00	--	ND	15.3	--		10
trans-1,2-Dichloroethene	ND	2.00	--	ND	7.93	--		10
1,1-Dichloroethane	ND	2.00	--	ND	8.09	--		10
Methyl tert butyl ether	ND	2.00	--	ND	7.21	--		10
Vinyl acetate	ND	2.00	--	ND	7.04	--		10
2-Butanone	8.28	2.00	--	24.4	5.90	--		10
cis-1,2-Dichloroethene	ND	2.00	--	ND	7.93	--		10



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-04 D

Date Collected: 08/14/13 13:12

Client ID: SV-4

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	5.00	--	ND	18.0	--		10
Chloroform	ND	2.00	--	ND	9.77	--		10
Tetrahydrofuran	ND	2.00	--	ND	5.90	--		10
1,2-Dichloroethane	ND	2.00	--	ND	8.09	--		10
n-Hexane	83.6	2.00	--	295	7.05	--		10
1,1,1-Trichloroethane	ND	2.00	--	ND	10.9	--		10
Benzene	120	2.00	--	383	6.39	--		10
Carbon tetrachloride	ND	2.00	--	ND	12.6	--		10
Cyclohexane	8.31	2.00	--	28.6	6.88	--		10
1,2-Dichloropropane	ND	2.00	--	ND	9.24	--		10
Bromodichloromethane	ND	2.00	--	ND	13.4	--		10
1,4-Dioxane	ND	2.00	--	ND	7.21	--		10
Trichloroethene	ND	2.00	--	ND	10.7	--		10
2,2,4-Trimethylpentane	4.22	2.00	--	19.7	9.34	--		10
Heptane	54.6	2.00	--	224	8.20	--		10
cis-1,3-Dichloropropene	ND	2.00	--	ND	9.08	--		10
4-Methyl-2-pentanone	ND	2.00	--	ND	8.20	--		10
trans-1,3-Dichloropropene	ND	2.00	--	ND	9.08	--		10
1,1,2-Trichloroethane	ND	2.00	--	ND	10.9	--		10
Toluene	511	2.00	--	1930	7.54	--		10
2-Hexanone	ND	2.00	--	ND	8.20	--		10
Dibromochloromethane	ND	2.00	--	ND	17.0	--		10
1,2-Dibromoethane	ND	2.00	--	ND	15.4	--		10
Tetrachloroethene	ND	2.00	--	ND	13.6	--		10
Chlorobenzene	ND	2.00	--	ND	9.21	--		10
Ethylbenzene	29.0	2.00	--	126	8.69	--		10
p/m-Xylene	85.0	4.00	--	369	17.4	--		10
Bromoform	ND	2.00	--	ND	20.7	--		10



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-04 D

Date Collected: 08/14/13 13:12

Client ID: SV-4

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Styrene	ND	2.00	--	ND	8.52	--		10
1,1,2,2-Tetrachloroethane	ND	2.00	--	ND	13.7	--		10
o-Xylene	16.3	2.00	--	70.8	8.69	--		10
4-Ethyltoluene	ND	2.00	--	ND	9.83	--		10
1,3,5-Trimethylbenzene	ND	2.00	--	ND	9.83	--		10
1,2,4-Trimethylbenzene	ND	2.00	--	ND	9.83	--		10
Benzyl chloride	ND	2.00	--	ND	10.4	--		10
1,3-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,4-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,2-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,2,4-Trichlorobenzene	ND	2.00	--	ND	14.8	--		10
Hexachlorobutadiene	ND	2.00	--	ND	21.3	--		10

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	93		60-140
Bromochloromethane	94		60-140
chlorobenzene-d5	92		60-140



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-05 D

Date Collected: 08/14/13 17:20

Client ID: SV-5

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Matrix: Soil\_Vapor

Analytical Method: 48,TO-15

Analytical Date: 08/20/13 20:25

Analyst: MR

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
<b>Volatile Organics in Air - Mansfield Lab</b>								
Propylene	11.5	2.50	--	19.8	4.30	--		5
Dichlorodifluoromethane	5.48	1.00	--	27.1	4.94	--		5
Chloromethane	2.79	1.00	--	5.76	2.07	--		5
Freon-114	ND	1.00	--	ND	6.99	--		5
Vinyl chloride	ND	1.00	--	ND	2.56	--		5
1,3-Butadiene	ND	1.00	--	ND	2.21	--		5
Bromomethane	ND	1.00	--	ND	3.88	--		5
Chloroethane	ND	1.00	--	ND	2.64	--		5
Ethanol	310	12.5	--	584	23.6	--		5
Vinyl bromide	ND	1.00	--	ND	4.37	--		5
Acetone	395	5.00	--	938	11.9	--		5
Trichlorofluoromethane	1.85	1.00	--	10.4	5.62	--		5
Isopropanol	3.00	2.50	--	7.37	6.15	--		5
1,1-Dichloroethene	ND	1.00	--	ND	3.96	--		5
Methylene chloride	ND	5.00	--	ND	17.4	--		5
3-Chloropropene	ND	1.00	--	ND	3.13	--		5
Carbon disulfide	4.29	1.00	--	13.4	3.11	--		5
Freon-113	ND	1.00	--	ND	7.66	--		5
trans-1,2-Dichloroethene	ND	1.00	--	ND	3.96	--		5
1,1-Dichloroethane	ND	1.00	--	ND	4.05	--		5
Methyl tert butyl ether	ND	1.00	--	ND	3.61	--		5
Vinyl acetate	ND	1.00	--	ND	3.52	--		5
2-Butanone	5.68	1.00	--	16.8	2.95	--		5
cis-1,2-Dichloroethene	ND	1.00	--	ND	3.96	--		5



**Project Name:** NYU LMC-KIMMEL  
**Project Number:** 11243

**Lab Number:** L1315930  
**Report Date:** 08/22/13

**SAMPLE RESULTS**

Lab ID: L1315930-05 D  
 Client ID: SV-5  
 Sample Location: NEW YORK, NY

Date Collected: 08/14/13 17:20  
 Date Received: 08/15/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
<b>Volatile Organics in Air - Mansfield Lab</b>								
Ethyl Acetate	ND	2.50	--	ND	9.01	--		5
Chloroform	15.3	1.00	--	74.7	4.88	--		5
Tetrahydrofuran	ND	1.00	--	ND	2.95	--		5
1,2-Dichloroethane	ND	1.00	--	ND	4.05	--		5
n-Hexane	46.3	1.00	--	163	3.52	--		5
1,1,1-Trichloroethane	1.33	1.00	--	7.26	5.46	--		5
Benzene	42.7	1.00	--	136	3.19	--		5
Carbon tetrachloride	ND	1.00	--	ND	6.29	--		5
Cyclohexane	5.26	1.00	--	18.1	3.44	--		5
1,2-Dichloropropane	ND	1.00	--	ND	4.62	--		5
Bromodichloromethane	ND	1.00	--	ND	6.70	--		5
1,4-Dioxane	ND	1.00	--	ND	3.60	--		5
Trichloroethene	ND	1.00	--	ND	5.37	--		5
2,2,4-Trimethylpentane	2.33	1.00	--	10.9	4.67	--		5
Heptane	31.5	1.00	--	129	4.10	--		5
cis-1,3-Dichloropropene	ND	1.00	--	ND	4.54	--		5
4-Methyl-2-pentanone	ND	1.00	--	ND	4.10	--		5
trans-1,3-Dichloropropene	ND	1.00	--	ND	4.54	--		5
1,1,2-Trichloroethane	ND	1.00	--	ND	5.46	--		5
Toluene	381	1.00	--	1440	3.77	--		5
2-Hexanone	ND	1.00	--	ND	4.10	--		5
Dibromochloromethane	ND	1.00	--	ND	8.52	--		5
1,2-Dibromoethane	ND	1.00	--	ND	7.69	--		5
Tetrachloroethene	1.43	1.00	--	9.70	6.78	--		5
Chlorobenzene	ND	1.00	--	ND	4.61	--		5
Ethylbenzene	31.6	1.00	--	137	4.34	--		5
p/m-Xylene	105	2.00	--	456	8.69	--		5
Bromoform	ND	1.00	--	ND	10.3	--		5



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-05 D

Date Collected: 08/14/13 17:20

Client ID: SV-5

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Styrene	ND	1.00	--	ND	4.26	--		5
1,1,2,2-Tetrachloroethane	ND	1.00	--	ND	6.87	--		5
o-Xylene	19.8	1.00	--	86.0	4.34	--		5
4-Ethyltoluene	1.40	1.00	--	6.88	4.92	--		5
1,3,5-Trimethylbenzene	ND	1.00	--	ND	4.92	--		5
1,2,4-Trimethylbenzene	1.81	1.00	--	8.90	4.92	--		5
Benzyl chloride	ND	1.00	--	ND	5.18	--		5
1,3-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,4-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,2-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,2,4-Trichlorobenzene	ND	1.00	--	ND	7.42	--		5
Hexachlorobutadiene	ND	1.00	--	ND	10.7	--		5

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	105		60-140
Bromochloromethane	98		60-140
chlorobenzene-d5	97		60-140



**Project Name:** NYU LMC-KIMMEL  
**Project Number:** 11243

**Lab Number:** L1315930  
**Report Date:** 08/22/13

### SAMPLE RESULTS

Lab ID: L1315930-06 D  
 Client ID: SV-6  
 Sample Location: NEW YORK, NY  
 Matrix: Soil\_Vapor  
 Analytical Method: 48,TO-15  
 Analytical Date: 08/20/13 20:56  
 Analyst: MR

Date Collected: 08/14/13 17:55  
 Date Received: 08/15/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Propylene	63.2	2.50	--	109	4.30	--		5
Dichlorodifluoromethane	4.04	1.00	--	20.0	4.94	--		5
Chloromethane	16.4	1.00	--	33.9	2.07	--		5
Freon-114	ND	1.00	--	ND	6.99	--		5
Vinyl chloride	ND	1.00	--	ND	2.56	--		5
1,3-Butadiene	1.41	1.00	--	3.12	2.21	--		5
Bromomethane	ND	1.00	--	ND	3.88	--		5
Chloroethane	2.02	1.00	--	5.33	2.64	--		5
Ethanol	226	12.5	--	426	23.6	--		5
Vinyl bromide	ND	1.00	--	ND	4.37	--		5
Acetone	230	5.00	--	546	11.9	--		5
Trichlorofluoromethane	3.12	1.00	--	17.5	5.62	--		5
Isopropanol	5.05	2.50	--	12.4	6.15	--		5
1,1-Dichloroethene	1.14	1.00	--	4.52	3.96	--		5
Methylene chloride	ND	5.00	--	ND	17.4	--		5
3-Chloropropene	ND	1.00	--	ND	3.13	--		5
Carbon disulfide	23.8	1.00	--	74.1	3.11	--		5
Freon-113	ND	1.00	--	ND	7.66	--		5
trans-1,2-Dichloroethene	ND	1.00	--	ND	3.96	--		5
1,1-Dichloroethane	45.9	1.00	--	186	4.05	--		5
Methyl tert butyl ether	ND	1.00	--	ND	3.61	--		5
Vinyl acetate	ND	1.00	--	ND	3.52	--		5
2-Butanone	9.06	1.00	--	26.7	2.95	--		5
cis-1,2-Dichloroethene	ND	1.00	--	ND	3.96	--		5



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-06 D

Date Collected: 08/14/13 17:55

Client ID: SV-6

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
<b>Volatile Organics in Air - Mansfield Lab</b>								
Ethyl Acetate	ND	2.50	--	ND	9.01	--		5
Chloroform	1.48	1.00	--	7.23	4.88	--		5
Tetrahydrofuran	ND	1.00	--	ND	2.95	--		5
1,2-Dichloroethane	ND	1.00	--	ND	4.05	--		5
n-Hexane	45.7	1.00	--	161	3.52	--		5
1,1,1-Trichloroethane	84.5	1.00	--	461	5.46	--		5
Benzene	86.0	1.00	--	275	3.19	--		5
Carbon tetrachloride	ND	1.00	--	ND	6.29	--		5
Cyclohexane	7.32	1.00	--	25.2	3.44	--		5
1,2-Dichloropropane	ND	1.00	--	ND	4.62	--		5
Bromodichloromethane	ND	1.00	--	ND	6.70	--		5
1,4-Dioxane	ND	1.00	--	ND	3.60	--		5
Trichloroethene	ND	1.00	--	ND	5.37	--		5
2,2,4-Trimethylpentane	5.17	1.00	--	24.1	4.67	--		5
Heptane	28.0	1.00	--	115	4.10	--		5
cis-1,3-Dichloropropene	ND	1.00	--	ND	4.54	--		5
4-Methyl-2-pentanone	ND	1.00	--	ND	4.10	--		5
trans-1,3-Dichloropropene	ND	1.00	--	ND	4.54	--		5
1,1,2-Trichloroethane	ND	1.00	--	ND	5.46	--		5
Toluene	282	1.00	--	1060	3.77	--		5
2-Hexanone	ND	1.00	--	ND	4.10	--		5
Dibromochloromethane	ND	1.00	--	ND	8.52	--		5
1,2-Dibromoethane	ND	1.00	--	ND	7.69	--		5
Tetrachloroethene	2.10	1.00	--	14.2	6.78	--		5
Chlorobenzene	ND	1.00	--	ND	4.61	--		5
Ethylbenzene	20.5	1.00	--	89.0	4.34	--		5
p/m-Xylene	64.6	2.00	--	281	8.69	--		5
Bromoform	ND	1.00	--	ND	10.3	--		5



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-06 D

Date Collected: 08/14/13 17:55

Client ID: SV-6

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Styrene	ND	1.00	--	ND	4.26	--		5
1,1,2,2-Tetrachloroethane	ND	1.00	--	ND	6.87	--		5
o-Xylene	12.9	1.00	--	56.0	4.34	--		5
4-Ethyltoluene	ND	1.00	--	ND	4.92	--		5
1,3,5-Trimethylbenzene	ND	1.00	--	ND	4.92	--		5
1,2,4-Trimethylbenzene	ND	1.00	--	ND	4.92	--		5
Benzyl chloride	ND	1.00	--	ND	5.18	--		5
1,3-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,4-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,2-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,2,4-Trichlorobenzene	ND	1.00	--	ND	7.42	--		5
Hexachlorobutadiene	ND	1.00	--	ND	10.7	--		5

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	101		60-140
Bromochloromethane	99		60-140
chlorobenzene-d5	103		60-140



**Project Name:** NYU LMC-KIMMEL  
**Project Number:** 11243

**Lab Number:** L1315930  
**Report Date:** 08/22/13

### SAMPLE RESULTS

Lab ID: L1315930-07 D  
 Client ID: SV-7  
 Sample Location: NEW YORK, NY  
 Matrix: Soil\_Vapor  
 Analytical Method: 48,TO-15  
 Analytical Date: 08/20/13 21:27  
 Analyst: MR

Date Collected: 08/14/13 18:11  
 Date Received: 08/15/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Propylene	10.2	2.50	--	17.6	4.30	--		5
Dichlorodifluoromethane	48.5	1.00	--	240	4.94	--		5
Chloromethane	ND	1.00	--	ND	2.07	--		5
Freon-114	ND	1.00	--	ND	6.99	--		5
Vinyl chloride	ND	1.00	--	ND	2.56	--		5
1,3-Butadiene	ND	1.00	--	ND	2.21	--		5
Bromomethane	ND	1.00	--	ND	3.88	--		5
Chloroethane	ND	1.00	--	ND	2.64	--		5
Ethanol	360	12.5	--	678	23.6	--		5
Vinyl bromide	ND	1.00	--	ND	4.37	--		5
Acetone	133	5.00	--	316	11.9	--		5
Trichlorofluoromethane	2.10	1.00	--	11.8	5.62	--		5
Isopropanol	8.67	2.50	--	21.3	6.15	--		5
1,1-Dichloroethene	ND	1.00	--	ND	3.96	--		5
Methylene chloride	ND	5.00	--	ND	17.4	--		5
3-Chloropropene	ND	1.00	--	ND	3.13	--		5
Carbon disulfide	1.94	1.00	--	6.04	3.11	--		5
Freon-113	ND	1.00	--	ND	7.66	--		5
trans-1,2-Dichloroethene	ND	1.00	--	ND	3.96	--		5
1,1-Dichloroethane	ND	1.00	--	ND	4.05	--		5
Methyl tert butyl ether	ND	1.00	--	ND	3.61	--		5
Vinyl acetate	ND	1.00	--	ND	3.52	--		5
2-Butanone	5.64	1.00	--	16.6	2.95	--		5
cis-1,2-Dichloroethene	ND	1.00	--	ND	3.96	--		5



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-07 D

Date Collected: 08/14/13 18:11

Client ID: SV-7

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	2.50	--	ND	9.01	--		5
Chloroform	4.73	1.00	--	23.1	4.88	--		5
Tetrahydrofuran	ND	1.00	--	ND	2.95	--		5
1,2-Dichloroethane	ND	1.00	--	ND	4.05	--		5
n-Hexane	33.6	1.00	--	118	3.52	--		5
1,1,1-Trichloroethane	ND	1.00	--	ND	5.46	--		5
Benzene	32.0	1.00	--	102	3.19	--		5
Carbon tetrachloride	ND	1.00	--	ND	6.29	--		5
Cyclohexane	3.30	1.00	--	11.4	3.44	--		5
1,2-Dichloropropane	ND	1.00	--	ND	4.62	--		5
Bromodichloromethane	ND	1.00	--	ND	6.70	--		5
1,4-Dioxane	ND	1.00	--	ND	3.60	--		5
Trichloroethene	ND	1.00	--	ND	5.37	--		5
2,2,4-Trimethylpentane	1.26	1.00	--	5.89	4.67	--		5
Heptane	23.2	1.00	--	95.1	4.10	--		5
cis-1,3-Dichloropropene	ND	1.00	--	ND	4.54	--		5
4-Methyl-2-pentanone	ND	1.00	--	ND	4.10	--		5
trans-1,3-Dichloropropene	ND	1.00	--	ND	4.54	--		5
1,1,2-Trichloroethane	ND	1.00	--	ND	5.46	--		5
Toluene	266	1.00	--	1000	3.77	--		5
2-Hexanone	ND	1.00	--	ND	4.10	--		5
Dibromochloromethane	ND	1.00	--	ND	8.52	--		5
1,2-Dibromoethane	ND	1.00	--	ND	7.69	--		5
Tetrachloroethene	1.88	1.00	--	12.7	6.78	--		5
Chlorobenzene	ND	1.00	--	ND	4.61	--		5
Ethylbenzene	29.8	1.00	--	129	4.34	--		5
p/m-Xylene	112	2.00	--	486	8.69	--		5
Bromoform	ND	1.00	--	ND	10.3	--		5



**Project Name:** NYU LMC-KIMMEL**Lab Number:** L1315930**Project Number:** 11243**Report Date:** 08/22/13**SAMPLE RESULTS**

Lab ID: L1315930-07 D

Date Collected: 08/14/13 18:11

Client ID: SV-7

Date Received: 08/15/13

Sample Location: NEW YORK, NY

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Styrene	ND	1.00	--	ND	4.26	--		5
1,1,2,2-Tetrachloroethane	ND	1.00	--	ND	6.87	--		5
o-Xylene	22.1	1.00	--	96.0	4.34	--		5
4-Ethyltoluene	2.80	1.00	--	13.8	4.92	--		5
1,3,5-Trimethylbenzene	1.38	1.00	--	6.78	4.92	--		5
1,2,4-Trimethylbenzene	3.81	1.00	--	18.7	4.92	--		5
Benzyl chloride	ND	1.00	--	ND	5.18	--		5
1,3-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,4-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,2-Dichlorobenzene	ND	1.00	--	ND	6.01	--		5
1,2,4-Trichlorobenzene	ND	1.00	--	ND	7.42	--		5
Hexachlorobutadiene	ND	1.00	--	ND	10.7	--		5

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	104		60-140
Bromochloromethane	102		60-140
chlorobenzene-d5	104		60-140



Project Name: NYU LMC-KIMMEL

Lab Number: L1315930

Project Number: 11243

Report Date: 08/22/13

### Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 08/20/13 15:26

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01-07 Batch: WG630330-4								
Propylene	ND	0.500	--	ND	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1



Project Name: NYU LMC-KIMMEL

Lab Number: L1315930

Project Number: 11243

Report Date: 08/22/13

### Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 08/20/13 15:26

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01-07 Batch: WG630330-4								
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1



Project Name: NYU LMC-KIMMEL

Lab Number: L1315930

Project Number: 11243

Report Date: 08/22/13

### Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 08/20/13 15:26

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01-07 Batch: WG630330-4								
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: NYU LMC-KIMMEL

Lab Number: L1315930

Project Number: 11243

Report Date: 08/22/13

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 Batch: WG630330-3								
Chlorodifluoromethane	88		-		70-130	-		
Propylene	95		-		70-130	-		
Propane	72		-		70-130	-		
Dichlorodifluoromethane	97		-		70-130	-		
Chloromethane	96		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	98		-		70-130	-		
Methanol	88		-		70-130	-		
Vinyl chloride	98		-		70-130	-		
1,3-Butadiene	100		-		70-130	-		
Butane	94		-		70-130	-		
Bromomethane	97		-		70-130	-		
Chloroethane	97		-		70-130	-		
Ethyl Alcohol	103		-		70-130	-		
Dichlorofluoromethane	91		-		70-130	-		
Vinyl bromide	99		-		70-130	-		
Acrolein	100		-		70-130	-		
Acetone	109		-		70-130	-		
Acetonitrile	90		-		70-130	-		
Trichlorofluoromethane	102		-		70-130	-		
iso-Propyl Alcohol	95		-		70-130	-		
Acrylonitrile	92		-		70-130	-		

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: NYU LMC-KIMMEL

Lab Number: L1315930

Project Number: 11243

Report Date: 08/22/13

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 Batch: WG630330-3								
Pentane	89		-		70-130	-		
Ethyl ether	86		-		70-130	-		
1,1-Dichloroethene	101		-		70-130	-		
tert-Butyl Alcohol	95		-		70-130	-		
Methylene chloride	94		-		70-130	-		
3-Chloropropene	93		-		70-130	-		
Carbon disulfide	97		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	102		-		70-130	-		
trans-1,2-Dichloroethene	90		-		70-130	-		
1,1-Dichloroethane	100		-		70-130	-		
Methyl tert butyl ether	98		-		70-130	-		
Vinyl acetate	104		-		70-130	-		
2-Butanone	93		-		70-130	-		
cis-1,2-Dichloroethene	110		-		70-130	-		
Ethyl Acetate	86		-		70-130	-		
Chloroform	104		-		70-130	-		
Tetrahydrofuran	94		-		70-130	-		
2,2-Dichloropropane	96		-		70-130	-		
1,2-Dichloroethane	101		-		70-130	-		
n-Hexane	99		-		70-130	-		
Isopropyl Ether	83		-		70-130	-		

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: NYU LMC-KIMMEL

Lab Number: L1315930

Project Number: 11243

Report Date: 08/22/13

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 Batch: WG630330-3								
Ethyl-Tert-Butyl-Ether	92		-		70-130	-		
1,1,1-Trichloroethane	101		-		70-130	-		
1,1-Dichloropropene	88		-		70-130	-		
Benzene	85		-		70-130	-		
Carbon tetrachloride	105		-		70-130	-		
Cyclohexane	96		-		70-130	-		
Tertiary-Amyl Methyl Ether	93		-		70-130	-		
Dibromomethane	95		-		70-130	-		
1,2-Dichloropropane	98		-		70-130	-		
Bromodichloromethane	102		-		70-130	-		
1,4-Dioxane	96		-		70-130	-		
Trichloroethene	113		-		70-130	-		
2,2,4-Trimethylpentane	99		-		70-130	-		
Methyl methacrylate	102		-		70-130	-		
Heptane	102		-		70-130	-		
cis-1,3-Dichloropropene	108		-		70-130	-		
4-Methyl-2-pentanone	101		-		70-130	-		
trans-1,3-Dichloropropene	93		-		70-130	-		
1,1,2-Trichloroethane	102		-		70-130	-		
Toluene	97		-		70-130	-		
1,3-Dichloropropane	91		-		70-130	-		

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: NYU LMC-KIMMEL

Lab Number: L1315930

Project Number: 11243

Report Date: 08/22/13

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 Batch: WG630330-3								
2-Hexanone	102		-		70-130	-		
Dibromochloromethane	98		-		70-130	-		
1,2-Dibromoethane	89		-		70-130	-		
Butyl Acetate	106		-		70-130	-		
Octane	94		-		70-130	-		
Tetrachloroethene	98		-		70-130	-		
1,1,1,2-Tetrachloroethane	97		-		70-130	-		
Chlorobenzene	99		-		70-130	-		
Ethylbenzene	100		-		70-130	-		
p/m-Xylene	100		-		70-130	-		
Bromoform	96		-		70-130	-		
Styrene	102		-		70-130	-		
1,1,1,2-Tetrachloroethane	100		-		70-130	-		
o-Xylene	102		-		70-130	-		
1,2,3-Trichloropropane	92		-		70-130	-		
Nonane (C9)	95		-		70-130	-		
Isopropylbenzene	98		-		70-130	-		
Bromobenzene	94		-		70-130	-		
o-Chlorotoluene	96		-		70-130	-		
n-Propylbenzene	96		-		70-130	-		
p-Chlorotoluene	94		-		70-130	-		

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: NYU LMC-KIMMEL

Lab Number: L1315930

Project Number: 11243

Report Date: 08/22/13

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 Batch: WG630330-3								
4-Ethyltoluene	92		-		70-130	-		
1,3,5-Trimethylbenzene	102		-		70-130	-		
tert-Butylbenzene	98		-		70-130	-		
1,2,4-Trimethylbenzene	105		-		70-130	-		
Decane (C10)	95		-		70-130	-		
Benzyl chloride	94		-		70-130	-		
1,3-Dichlorobenzene	101		-		70-130	-		
1,4-Dichlorobenzene	101		-		70-130	-		
sec-Butylbenzene	95		-		70-130	-		
p-Isopropyltoluene	90		-		70-130	-		
1,2-Dichlorobenzene	101		-		70-130	-		
n-Butylbenzene	100		-		70-130	-		
1,2-Dibromo-3-chloropropane	103		-		70-130	-		
Undecane	102		-		70-130	-		
Dodecane (C12)	<b>187</b>	Q	-		70-130	-		
1,2,4-Trichlorobenzene	114		-		70-130	-		
Naphthalene	105		-		70-130	-		
1,2,3-Trichlorobenzene	110		-		70-130	-		
Hexachlorobutadiene	120		-		70-130	-		

## Lab Duplicate Analysis

Batch Quality Control

Project Name: NYU LMC-KIMMEL

Project Number: 11243

Lab Number: L1315930

Report Date: 08/22/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG630330-5 QC Sample: L1315930-01 Client ID: SV-1						
Propylene	64.8	64.0	ppbV	1		25
Dichlorodifluoromethane	1.88	1.80	ppbV	4		25
Chloromethane	ND	ND	ppbV	NC		25
Freon-114	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	1.94	2.04	ppbV	5		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	356	344	ppbV	3		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	292	291	ppbV	0		25
Trichlorofluoromethane	ND	ND	ppbV	NC		25
Isopropanol	4.53	4.62	ppbV	2		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	8.42	8.05	ppbV	4		25
Freon-113	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25

## Lab Duplicate Analysis

### Batch Quality Control

Project Name: NYU LMC-KIMMEL

Lab Number: L1315930

Project Number: 11243

Report Date: 08/22/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG630330-5 QC Sample: L1315930-01 Client ID: SV-1					
1,1-Dichloroethane	ND	ND	ppbV	NC	25
Methyl tert butyl ether	ND	ND	ppbV	NC	25
Vinyl acetate	ND	ND	ppbV	NC	25
2-Butanone	8.70	8.45	ppbV	3	25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC	25
Ethyl Acetate	ND	ND	ppbV	NC	25
Chloroform	1.90	1.89	ppbV	1	25
Tetrahydrofuran	ND	ND	ppbV	NC	25
1,2-Dichloroethane	ND	ND	ppbV	NC	25
n-Hexane	55.2	54.4	ppbV	1	25
1,1,1-Trichloroethane	ND	ND	ppbV	NC	25
Benzene	44.1	43.8	ppbV	1	25
Carbon tetrachloride	ND	ND	ppbV	NC	25
Cyclohexane	6.75	6.33	ppbV	6	25
1,2-Dichloropropane	ND	ND	ppbV	NC	25
Bromodichloromethane	ND	ND	ppbV	NC	25
1,4-Dioxane	ND	ND	ppbV	NC	25
Trichloroethene	1.00	ND	ppbV	NC	25
2,2,4-Trimethylpentane	2.76	2.69	ppbV	3	25

## Lab Duplicate Analysis

### Batch Quality Control

Project Name: NYU LMC-KIMMEL

Project Number: 11243

Lab Number: L1315930

Report Date: 08/22/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG630330-5 QC Sample: L1315930-01 Client ID: SV-1					
Heptane	34.4	29.9	ppbV	14	25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC	25
4-Methyl-2-pentanone	ND	ND	ppbV	NC	25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC	25
1,1,2-Trichloroethane	ND	ND	ppbV	NC	25
Toluene	320	328	ppbV	2	25
2-Hexanone	ND	ND	ppbV	NC	25
Dibromochloromethane	ND	ND	ppbV	NC	25
1,2-Dibromoethane	ND	ND	ppbV	NC	25
Tetrachloroethene	1.28	1.35	ppbV	5	25
Chlorobenzene	ND	ND	ppbV	NC	25
Ethylbenzene	29.1	29.8	ppbV	2	25
p/m-Xylene	97.8	101	ppbV	3	25
Bromoform	ND	ND	ppbV	NC	25
Styrene	ND	ND	ppbV	NC	25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC	25
o-Xylene	20.2	20.8	ppbV	3	25
4-Ethyltoluene	1.50	1.62	ppbV	8	25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC	25

## Lab Duplicate Analysis

Batch Quality Control

Project Name: NYU LMC-KIMMEL

Project Number: 11243

Lab Number: L1315930

Report Date: 08/22/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG630330-5 QC Sample: L1315930-01 Client ID: SV-1					
1,2,4-Trimethylbenzene	1.79	1.85	ppbV	3	25
Benzyl chloride	ND	ND	ppbV	NC	25
1,3-Dichlorobenzene	ND	ND	ppbV	NC	25
1,4-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC	25
Hexachlorobutadiene	ND	ND	ppbV	NC	25

Project Name: NYU LMC-KIMMEL

Serial\_No:08221315:30  
 Lab Number: L1315930

Project Number: 11243

Report Date: 08/22/13

**Canister and Flow Controller Information**

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1315930-01	SV-1	0455	#16 AMB	08/12/13	91732		-	-	-	Pass	40.0	43	7
L1315930-01	SV-1	1866	6.0L Can	08/12/13	91732	L1314258-04	Pass	-29.5	-6.3	-	-	-	-
L1315930-02	SV-2	0443	#30 SV	08/12/13	91732		-	-	-	Pass	40.0	40	0
L1315930-02	SV-2	1909	6.0L Can	08/12/13	91732	L1314737-03	Pass	-29.5	-6.1	-	-	-	-
L1315930-03	SV-3	0352	#30 SV	08/12/13	91732		-	-	-	Pass	36.0	32	12
L1315930-03	SV-3	1574	6.0L Can	08/12/13	91732	L1314737-03	Pass	-29.6	-7.8	-	-	-	-
L1315930-04	SV-4	0336	#90 SV	08/12/13	91732		-	-	-	Pass	36.0	45	22
L1315930-04	SV-4	609	6.0L Can	08/12/13	91732	L1314258-04	Pass	-29.5	-15.1	-	-	-	-
L1315930-05	SV-5	0005	#30 AMB	08/12/13	91732		-	-	-	Pass	36.0	40	11
L1315930-05	SV-5	782	6.0L Can	08/12/13	91732	L1314258-04	Pass	-29.5	-8.5	-	-	-	-
L1315930-06	SV-6	0080	#30 AMB	08/12/13	91732		-	-	-	Pass	38.0	43	12
L1315930-06	SV-6	595	6.0L Can	08/12/13	91732	L1314258-04	Pass	-29.5	-3.2	-	-	-	-
L1315930-07	SV-7	0022	#90 SV	08/12/13	91732		-	-	-	Pass	36.0	53	38
L1315930-07	SV-7	1902	6.0L Can	08/12/13	91732	L1314737-03	Pass	-29.5	0.0	-	-	-	-
L1315930-08	CAN 646	0582	#90 SV	08/12/13	91732		-	-	-	Pass	35.0	38	8



**Project Name:** NYU LMC-KIMMEL

**Project Number:** 11243

Serial\_No:08221315:30  
**Lab Number:** L1315930

**Report Date:** 08/22/13

**Canister and Flow Controller Information**

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1315930-08	CAN 646	646	6.0L Can	08/12/13	91732	L1314737-03	Pass	-29.5	-29.6	-	-	-	-

**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314258  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314258-04  
 Client ID: CAN 1847 SHELF 48  
 Sample Location:  
 Matrix: Air  
 Analytical Method: 48,TO-15  
 Analytical Date: 07/27/13 19:05  
 Analyst: RY

Date Collected: 07/26/13 16:28  
 Date Received: 07/27/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.200	--	ND	0.361	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.200	--	ND	0.434	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314258  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314258-04  
 Client ID: CAN 1847 SHELF 48  
 Sample Location:

Date Collected: 07/26/13 16:28  
 Date Received: 07/27/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314258  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314258-04 Date Collected: 07/26/13 16:28  
 Client ID: CAN 1847 SHELF 48 Date Received: 07/27/13  
 Sample Location: Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314258  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314258-04  
 Client ID: CAN 1847 SHELF 48  
 Sample Location:

Date Collected: 07/26/13 16:28  
 Date Received: 07/27/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314258  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314258-04 Date Collected: 07/26/13 16:28  
 Client ID: CAN 1847 SHELF 48 Date Received: 07/27/13  
 Sample Location: Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	89		60-140
Bromochloromethane	88		60-140
chlorobenzene-d5	88		60-140

**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314258  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314258-04  
 Client ID: CAN 1847 SHELF 48  
 Sample Location:  
 Matrix: Air  
 Analytical Method: 48,TO-15-SIM  
 Analytical Date: 07/27/13 19:05  
 Analyst: RY

Date Collected: 07/26/13 16:28  
 Date Received: 07/27/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.050	--	ND	0.247	--		1
Chloromethane	ND	0.500	--	ND	1.03	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.020	--	ND	0.053	--		1
Acetone	ND	2.00	--	ND	4.75	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.020	--	ND	0.072	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314258  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314258-04  
 Client ID: CAN 1847 SHELF 48  
 Sample Location:

Date Collected: 07/26/13 16:28  
 Date Received: 07/27/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	0.039	0.020	--	0.264	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.020	--	ND	0.092	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.500	--	ND	2.46	--		1
1,3,5-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.500	--	ND	2.74	--		1
p-Isopropyltoluene	ND	0.500	--	ND	2.74	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.500	--	ND	2.74	--		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314258  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314258-04 Date Collected: 07/26/13 16:28  
 Client ID: CAN 1847 SHELF 48 Date Received: 07/27/13  
 Sample Location: Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	91		60-140
bromochloromethane	91		60-140
chlorobenzene-d5	90		60-140

**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314737  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314737-03  
 Client ID: CAN 646 SHELF 53  
 Sample Location:  
 Matrix: Air  
 Analytical Method: 48,TO-15  
 Analytical Date: 08/07/13 01:20  
 Analyst: RY

Date Collected: 08/01/13 15:53  
 Date Received: 08/02/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.200	--	ND	0.361	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.200	--	ND	0.434	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314737  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314737-03  
 Client ID: CAN 646 SHELF 53  
 Sample Location:

Date Collected: 08/01/13 15:53  
 Date Received: 08/02/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314737  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314737-03 Date Collected: 08/01/13 15:53  
 Client ID: CAN 646 SHELF 53 Date Received: 08/02/13  
 Sample Location: Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314737  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314737-03  
 Client ID: CAN 646 SHELF 53  
 Sample Location:

Date Collected: 08/01/13 15:53  
 Date Received: 08/02/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314737  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID:	L1314737-03	Date Collected:	08/01/13 15:53
Client ID:	CAN 646 SHELF 53	Date Received:	08/02/13
Sample Location:		Field Prep:	Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	98		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	96		60-140



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314737  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314737-03  
 Client ID: CAN 646 SHELF 53  
 Sample Location:  
 Matrix: Air  
 Analytical Method: 48,TO-15-SIM  
 Analytical Date: 08/07/13 01:20  
 Analyst: RY

Date Collected: 08/01/13 15:53  
 Date Received: 08/02/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.050	--	ND	0.247	--		1
Chloromethane	ND	0.500	--	ND	1.03	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.020	--	ND	0.053	--		1
Acetone	ND	2.00	--	ND	4.75	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.020	--	ND	0.072	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L1314737  
**Report Date:** 08/22/13

### Air Canister Certification Results

Lab ID: L1314737-03  
 Client ID: CAN 646 SHELF 53  
 Sample Location:

Date Collected: 08/01/13 15:53  
 Date Received: 08/02/13  
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.020	--	ND	0.092	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.500	--	ND	2.46	--		1
1,3,5-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.500	--	ND	2.74	--		1
p-Isopropyltoluene	ND	0.500	--	ND	2.74	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.500	--	ND	2.74	--		1



**Project Name:** BATCH CANISTER CERTIFICATION**Lab Number:** L1314737**Project Number:** CANISTER QC BAT**Report Date:** 08/22/13**Air Canister Certification Results**

Lab ID: L1314737-03

Date Collected: 08/01/13 15:53

Client ID: CAN 646 SHELF 53

Date Received: 08/02/13

Sample Location:

Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	98		60-140
bromochloromethane	97		60-140
chlorobenzene-d5	98		60-140

Project Name: NYU LMC-KIMMEL

Lab Number: L1315930

Project Number: 11243

Report Date: 08/22/13

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

**Cooler Information Custody Seal****Cooler**

N/A Absent

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1315930-01A	Canister - 6 Liter	N/A	N/A		Y	Absent	TO15-LL(30)
L1315930-02A	Canister - 6 Liter	N/A	N/A		Y	Absent	TO15-LL(30)
L1315930-03A	Canister - 6 Liter	N/A	N/A		Y	Absent	TO15-LL(30)
L1315930-04A	Canister - 6 Liter	N/A	N/A		Y	Absent	TO15-LL(30)
L1315930-05A	Canister - 6 Liter	N/A	N/A		Y	Absent	TO15-LL(30)
L1315930-06A	Canister - 6 Liter	N/A	N/A		Y	Absent	TO15-LL(30)
L1315930-07A	Canister - 6 Liter	N/A	N/A		Y	Absent	TO15-LL(30)
L1315930-08A	Canister - 6 Liter	N/A	N/A		Y	Absent	CLEAN-FEE()

\*Values in parentheses indicate holding time in days

**Project Name:** NYU LMC-KIMMEL  
**Project Number:** 11243

**Lab Number:** L1315930  
**Report Date:** 08/22/13

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.

**Report Format:** Data Usability Report



**Project Name:** NYU LMC-KIMMEL  
**Project Number:** 11243

**Lab Number:** L1315930  
**Report Date:** 08/22/13

**Data Qualifiers**

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** NYU LMC-KIMMEL  
**Project Number:** 11243

**Lab Number:** L1315930  
**Report Date:** 08/22/13

## REFERENCES

- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certificate/Approval Program Summary

Last revised August 3, 2012 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### **Connecticut Department of Public Health** Certificate/Lab ID: PH-0141.

*Wastewater/Non-Potable Water* (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable). Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

*Solid Waste/Soil* (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Titanium, Vanadium, Zinc, Total Organic Carbon, Corrosivity, TCLP 1311, SPLP 1312. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### **Florida Department of Health** Certificate/Lab ID: E87814. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

*Solid & Chemical Materials* (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

*Air & Emissions* (EPA TO-15.)

### **Louisiana Department of Environmental Quality** Certificate/Lab ID: 03090. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020A, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 1311, 3050B, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

*Biological Tissue* (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

*Air & Emissions* (EPA TO-15.)

### **New Hampshire Department of Environmental Services** Certificate/Lab ID: 2206. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: EPA 180.1, 1631E, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B, 3020A, . Organic Parameters: EPA 3510C, 3630C, 3640A, 3660B, 8081B, 8082A, 8270C, 8270D, 8015D.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 3050B, 3051A, 6020A, 7471B, 9040B, 9045C. Organic Parameters: SW-846 3540C, 3580A, 3630C, 3640A, 3660B, 3665A, 8270C, 8015D, 8082A, 8081B.)

### **New Jersey Department of Environmental Protection** Certificate/Lab ID: MA015. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SW-846 1312, 3020A, SM2320B, SM2540D, 2540G, 4500H-B, EPA 180.1, 1631E, SW-846 7470A, 9040C, 6020A, 9050A. Organic Parameters: SW-846 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 8015D, 8081B, 8082A, 8270C, 8270D)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 6020A, 7471B, 7474, 9040B, 9040C, 9045C, 9045D, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 3630C, 3640A, 3660B, 3665A, 8081B, 8082A, 8270C, 8270D, 8015D.)

*Atmospheric Organic Parameters* (EPA 3C, TO-15, TO-10A, TO-13A-SIM.)

*Biological Tissue* (Inorganic Parameters: SW-846 6020A. Organic Parameters: SW-846 8270C, 8270D, 3510C, 3570, 3610C, 3630C, 3640A)

**New York Department of Health** Certificate/Lab ID: 11627. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: SM2320B, SM2540D, 6020A, 1631E, 7470A, 9050A, EPA 180.1, 3020A. Organic Parameters: EPA 8270C, 8270D, 8081B, 8082A, 3510C.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 6020A, 7471B, 7474, 9040C, 9045D. Organic Parameters: EPA 8270C, 8270D, 8081B, 8082A, 1311, 3050B, 3580A, 3570, 3051A.)

*Air & Emissions* (EPA TO-15, TO-10A.)

**Pennsylvania** Certificate/Lab ID: 68-02089 **NELAP Accredited**

*Non-Potable Water* (Inorganic Parameters: 1312, 1631E, 180.1, 3020A, 6020A, 7470A, 9040B, 9050A, 2320B, 2540D, 2540G, SM4500H+-B. Organic Parameters: 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 8015D, 8081B, 8082A, 8270C, 8270D .)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 3051A, 6020A, 7471B, 7474 9040B, 9045C, 9060. Organic Parameters: EPA3050B, 3540C, 3570, 3580A, 3630C, 3640A, 3660B, 3665A, 8270C, 8270D, 8081B, 8015D, 8082A.)

**Rhode Island Department of Health** Certificate/Lab ID: LAO00299. **NELAP Accredited via NJ-DEP.**

Refer to NJ-DEP Certificate for Non-Potable Water.

**Texas Commission of Environmental Quality** Certificate/Lab ID: T104704419-08-TX. **NELAP Accredited.**

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8081, 8082.)

*Air* (Organic Parameters: EPA TO-15)

**Virginia Division of Consolidated Laboratory Services** Certificate/Lab ID:460194. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters:EPA 3020A, 6020A, 245.7, 9040B. Organic Parameters: EPA 3510C, 3640A, 3660B, 3665A, 8270C, 8270D, 8082A, 8081B, 8015D.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020A,7470A,7471B,9040B,9045C,3050B,3051, 9060. Organic Parameters: EPA 3540C, 3580A, 3630C, 3640A, 3660B, 3665A, 3570, 8270C, 8270D, 8081B, 8082A, 8015D.)

**Washington State Department of Ecology** Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 180.1, 1631E.)

*Solid & Chemical Materials* (Inorganic Parameters: EPA 6020, 7470, 7471, 7474, 9045C, 9050A, 9060. Organic Parameters: EPA 8081, 8082, 8015, 8270.)

**U.S. Army Corps of Engineers**

**Department of Defense, L-A-B** Certificate/Lab ID: L2217.01.

*Non-Potable Water* (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 8270C, 8270D, 8270C-ALK-PAH, 8270D-ALK-PAH, 8082A, 8081B, 8015D-SHC, 8015D.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1311, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 8270C, 8270D, 8270C-ALK-PAH, 8270D-ALK-PAH 8082A, 8081B, 8015D-SHC, 8015D.)

*Air & Emissions* (EPA TO-15.)

**Analytes Not Accredited by NELAP**

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl. **TO-15**: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.



# AIR ANALYSIS

CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048  
 TEL: 508-822-9300 FAX: 508-822-3288

**Client Information**

Client: AKRF, INC.  
 Address: 440 PARK AVENUE S 7TH FL  
NEW YORK, NY 10014  
 Phone: 917-569-8916  
 Fax:

Email: albychko@akrf.com

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments:

**Project Information**

Project Name: NYO LME - KIMMEL  
 Project Location: NEW YORK, NY  
 Project #: 11243  
 Project Manager: ASHT BYCHNIK  
 ALPHA Quote #:

**Turn-Around Time**

Standard  RUSH (only confirmed if pre-approved!)  
 Date Due: SDAY Time:

Date Rec'd in Lab:

**Report Information - Data Deliverables**

FAX  
 ADEX  
 Criteria Checker: \_\_\_\_\_  
 (Default based on Regulatory Criteria Indicated)  
 Other Formats: \_\_\_\_\_  
 EMAIL (standard pdf report)  
 Additional Deliverables:  
 Report to: (if different than Project Manager)

ALPHA Job #: L1315930

**Billing Information**

Same as Client info PO #:

**Regulatory Requirements/Report Limits**

State/Fed	Program	Criteria

**All Columns Below Must Be Filled Out**

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection					Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-14A by TO-15	TO-15	TO-15 SIM APH	FIXED GASES TO-13A	TO-4 / TO-10	Sample Comments (i.e. PID)
		Date	Start Time	End Time	Initial Vacuum	Final Vacuum											
L1315930-1	SU-1	8/14/13	09:00	11:00	-29.79	-5.64	SV	EM	6L	1866	0455	X					
2	SU-2		09:32	11:32	-30.47	-6.16				1909	0443						
3	SU-3		10:13	12:13	-29.98	-7.25				1574	0352						
4	SU-4		11:12	13:12	-28.82	-14.63				60	0336						
5	SU-5		15:20	17:20	-30.30	-8.26				782	0005						
6	SU-6		15:55	17:55	-27.72	-2.90				595	0080						
7	SU-7		16:13	18:11	-30.11	-0.0				1902	0022						

**\*SAMPLE MATRIX CODES**

AA = Ambient Air (Indoor/Outdoor)  
 SV = Soil Vapor/Landfill Gas/SVE  
 Other = Please Specify

Container Type

Summa 6L

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By:

Eric Nicolas

Date/Time

8/15/13 14:30

Received By:

Alby Chiko

Date/Time

8/15/13 14:30

Alby Chiko

8/15/13 23:45

8/16/13 05:00

Manahel Lab

8/15/13 23:45

8/16/13 05:00

## **Appendix D**

### ***Proposed Development Plan***

**Owner**  
 NYU Hospitals Center  
 500 First Avenue  
 New York, New York 10016  
 212.263.2450 tel

**Architects**  
 Ennead Architects, LLP  
 320 West 13th Street  
 New York, New York 10014-1273  
 212.207.7173 tel 212.207.5917 fax  
 www.ennead.com

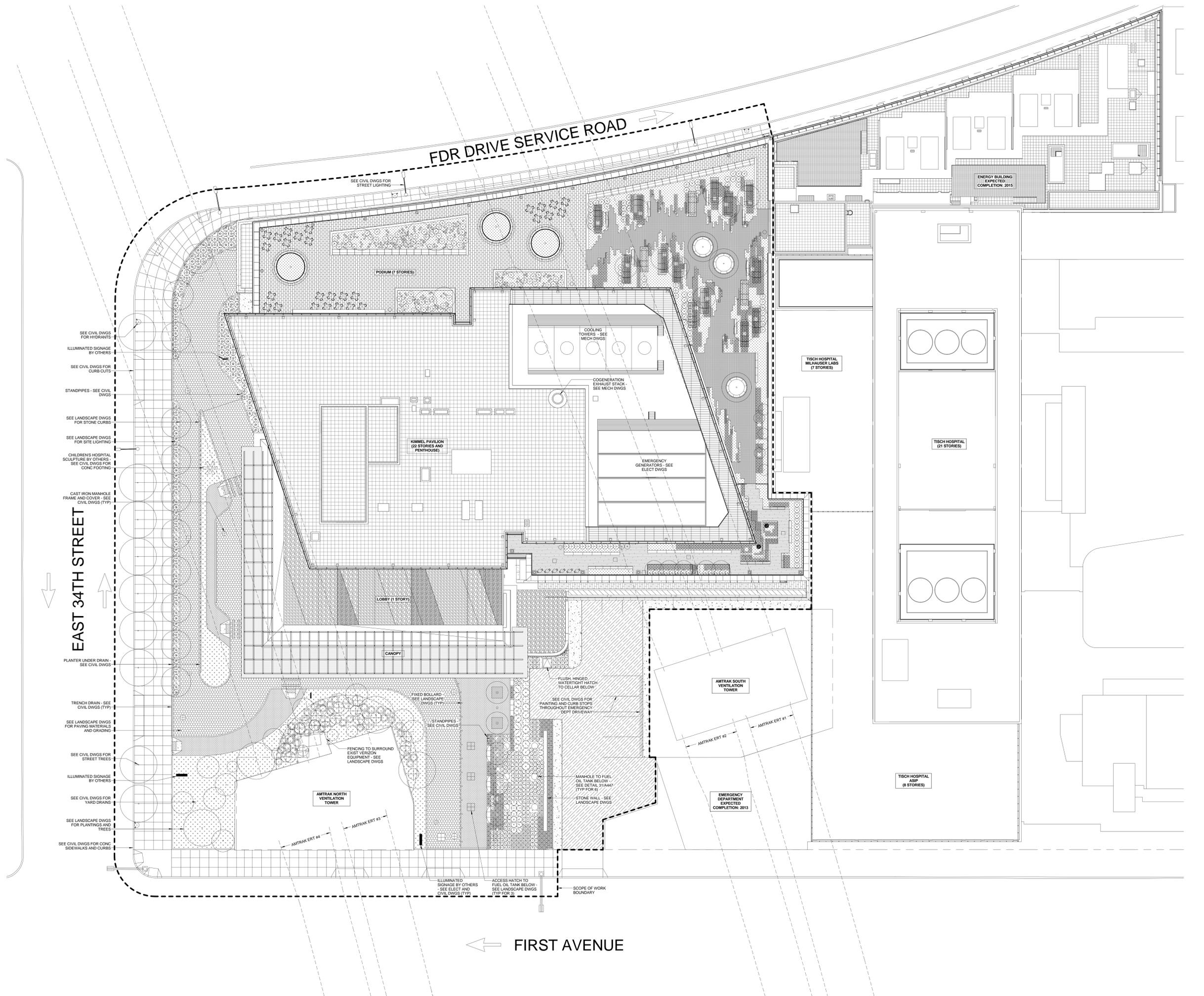
**NBBJ Architecture**  
 2 River Street, 25th Floor  
 New York, New York 10006  
 212.524.9000 tel 212.204.9292 fax

**Mechanical Engineer**  
 Jaros Baum & Bolles  
 80 Pine Street  
 New York, New York 10005  
 212.530.9300 tel 212.269.5894 fax

**Energy Plant Engineer**  
 Energistics, Inc.  
 3305 Wildflower Valley Drive  
 Encinitas, CA 92024  
 658.367.8120 tel 760.476.1871 fax

**Structural Engineer**  
 Leslie E. Robertson Associates  
 30 Broad Street, 47th Floor  
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 914.273.2630 tel 914.273.2631 fax



Scale

Key Plan

1 Construction Documents 10.09.2012  
 No. Revision Date

Date October 9, 2012 Project Number 1013  
 Scale 1/16" = 1'-0"

Sheet Title  
**SITE PLAN - ARCHITECTURAL**

Sheet No.  
**A-061.00**  
 Page No.  
 NYC DOB Number

Owner  
 NYU Hospitals Center  
 500 First Avenue  
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 Ennead Architects, LLP  
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 New York, New York 10006  
 212.584.9000 tel 212.264.9292 fax

Mechanical Engineer  
 Jacobs Baum & Boltes  
 80 Pine Street  
 New York, New York 10005  
 212.530.9300 tel 212.269.5894 fax

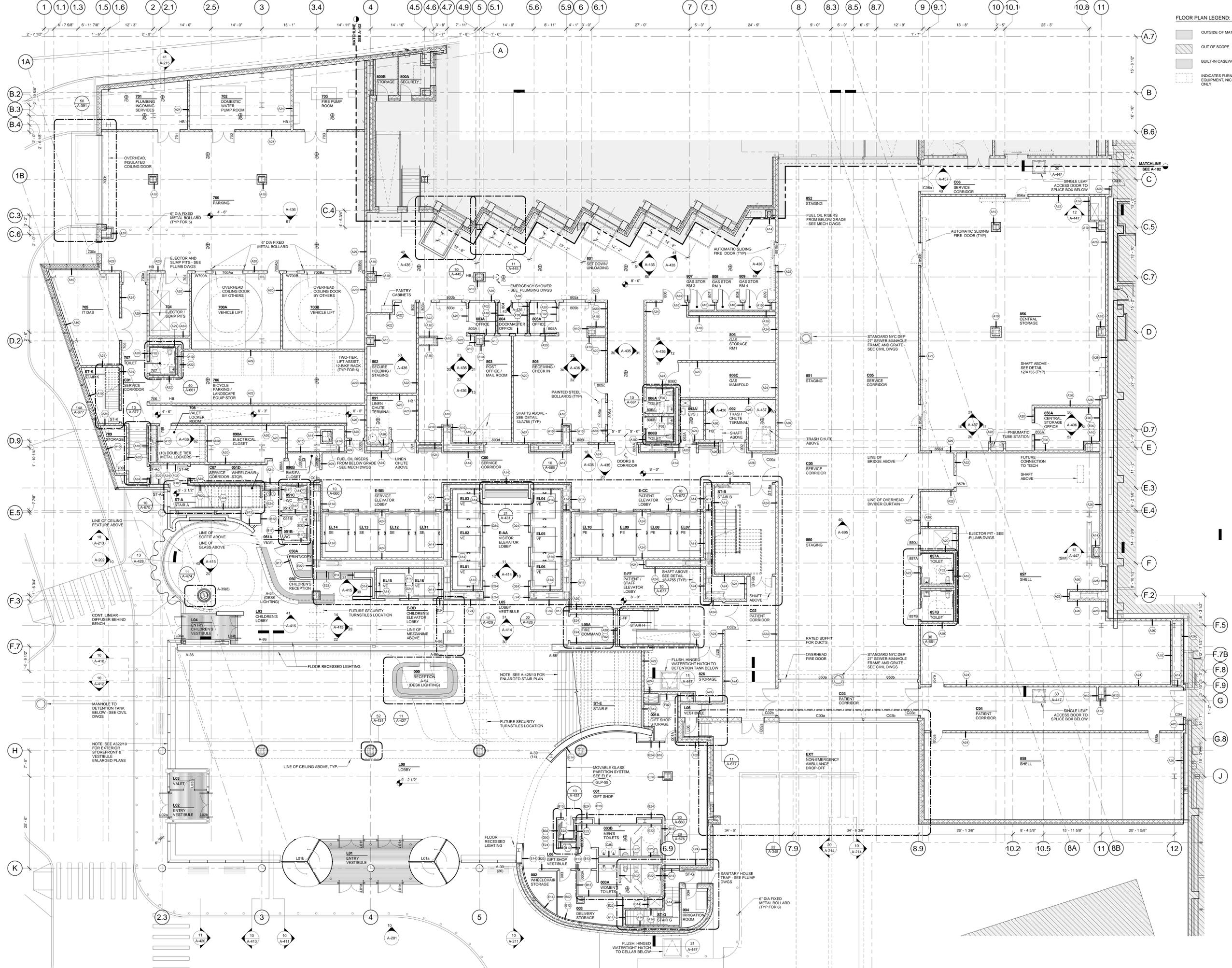
Energy Plant Engineer  
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**FLOOR PLAN LEGEND:**

- OUTSIDE OF MATCHLINE ZONE
- OUT OF SCOPE
- BUILT-IN CASEWORK
- INDICATES FURNITURE AND/OR EQUIPMENT, NIC FOR REFERENCE ONLY



Scale

Key Plan

1 Construction Documents 10.09.2012  
 No. Revision Date

Date October 9, 2012 Project Number 1013  
 Scale 1/8" = 1'-0"

Sheet Title  
**GROUND FLOOR PLAN**

Sheet No.  
**A-101.00**  
 Page No.  
 NYC DOB Number

**10 GROUND FLOOR PLAN**  
 1/8" = 1'-0"

**Owner**  
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212.507.7171 tel 212.507.5917 fax  
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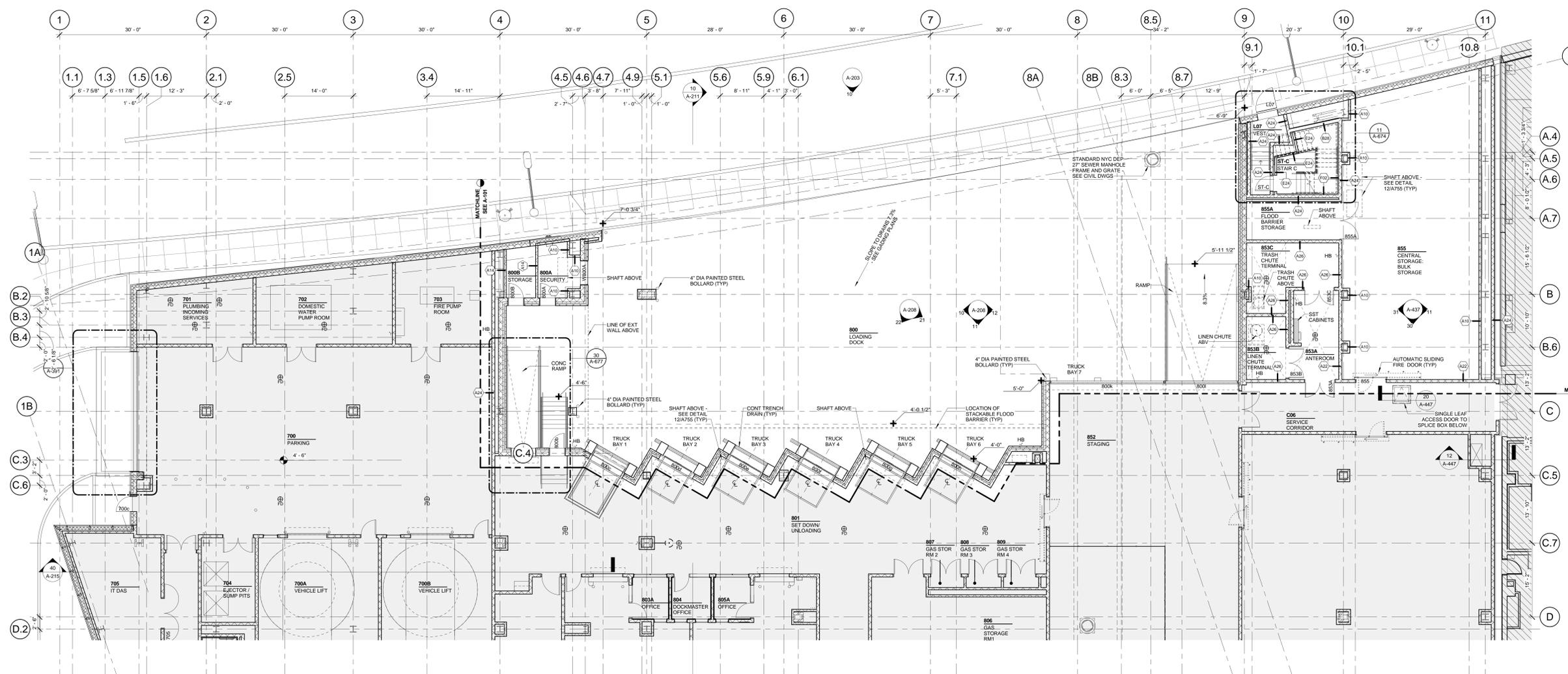
**MEP Architecture**  
NBBJ Architecture  
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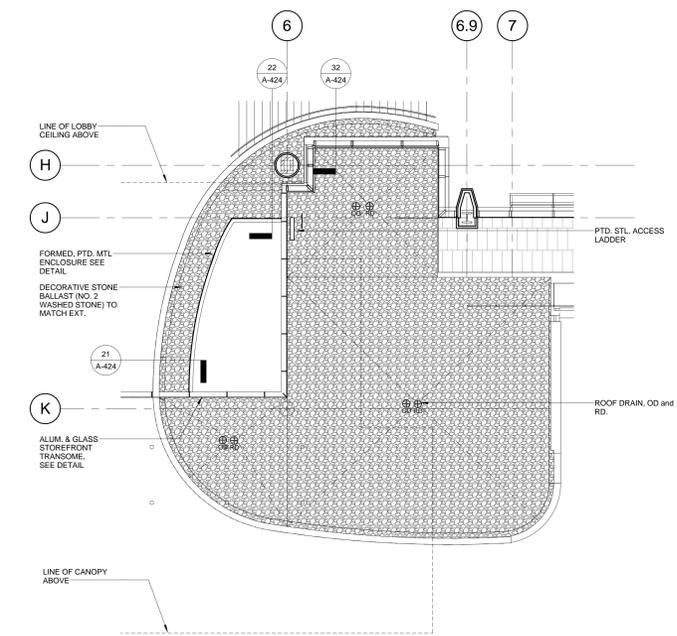
**Code Consultant**  
Hughes Associates, Inc.  
205 Business Park Drive, Suite 106  
Aurora, New York 10504  
914.273.2630 tel 914.273.2631 fax



**FLOOR PLAN LEGEND:**

- OUTSIDE OF MATCHLINE ZONE
- OUT OF SCOPE
- BUILT-IN CASEWORK
- INDICATES FURNITURE AND/OR EQUIPMENT, INC FOR REFERENCE ONLY

20 GROUND FLOOR PLAN EAST  
1/8" = 1'-0"



10 GROUND FLOOR PARTIAL PLAN AND ROOF PLAN  
1/8" = 1'-0"

Scale

Key Plan

1 Construction Documents 10.09.2012  
No. Revision Date

Date October 9, 2012 Project Number 1013  
Scale 1/8" = 1'-0"

Sheet Title  
GROUND FLOOR PLAN EAST

Sheet No.  
A-102.00

Page No.  
NYC DOB Number

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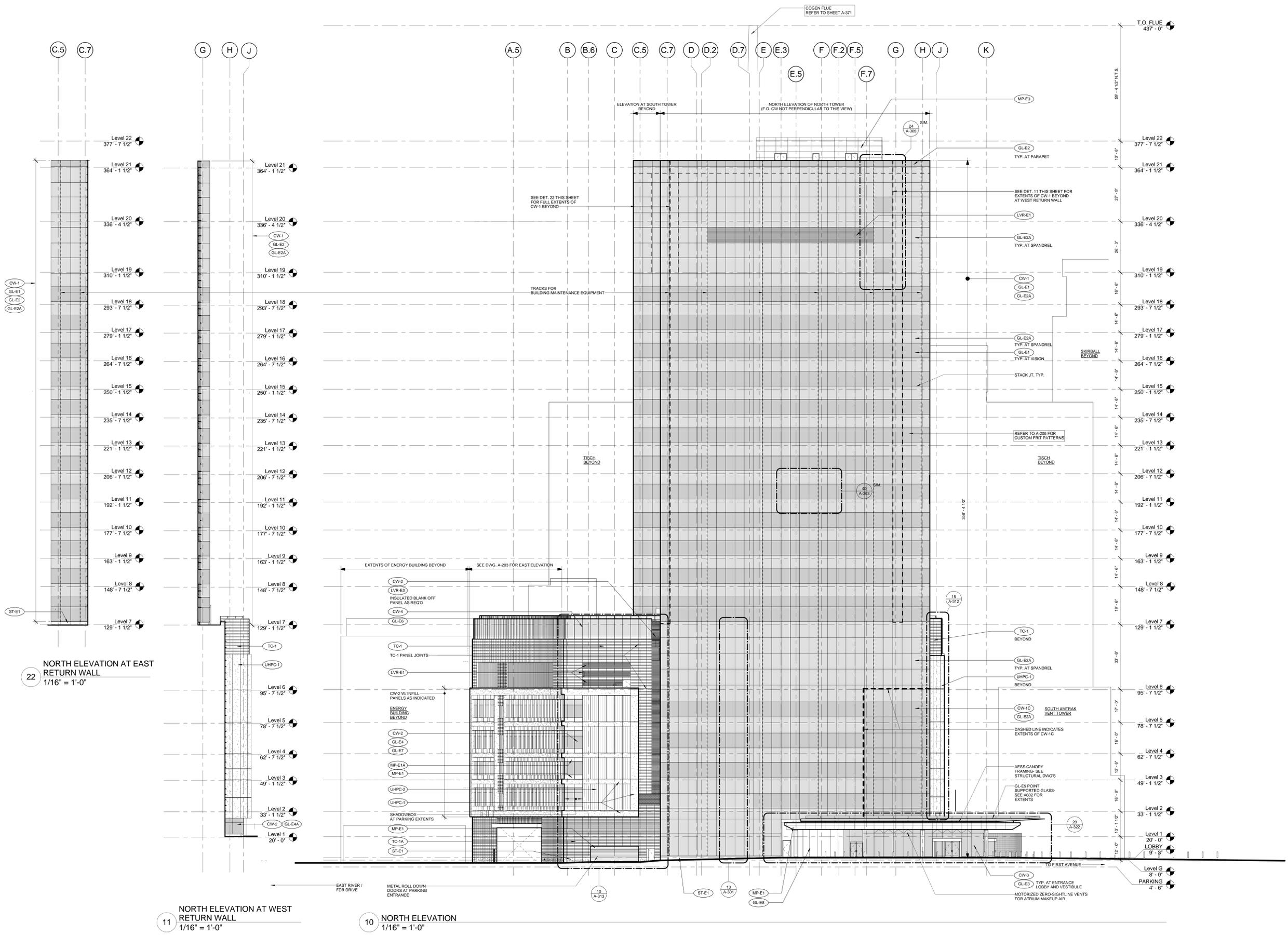
**Code Consultant**  
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205 Business Park Drive, Suite 106  
Airmont, New York 10504  
914.273.2630 tel 914.273.2631 fax

**LEGEND:**

NOTE: SEE DWG A-011 FOR EXTERIOR MATERIAL INDEX

VISION GLASS (W/ CUSTOM CERAMIC FRIT)  
REFER TO A-205, A-206 FOR FRIT SCREEN  
TYPES.

SPANDREL GLASS (W/ CUSTOM CERAMIC  
FRIT) WITH FTD, ALUM. BACKSPAN.  
REFER TO A-205, A-206 FOR FRIT SCREEN  
TYPES.

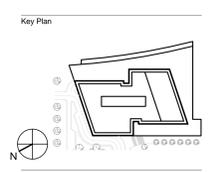


22 NORTH ELEVATION AT EAST  
RETURN WALL  
1/16" = 1'-0"

11 NORTH ELEVATION AT WEST  
RETURN WALL  
1/16" = 1'-0"

10 NORTH ELEVATION  
1/16" = 1'-0"

Seal



No.	Revision	Date
2	Construction Documents	10.09.2012
1	Design Assist Draft	06.26.2012

Date: October 9, 2012  
Scale: 1/16" = 1'-0"  
Project Number: 1013

Sheet Title:  
**BUILDING ELEVATION -  
NORTH**

Sheet No:  
**A-202.00**  
Page No:  
NYC DOB Number



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 212.760.9000 tel 212.760.9002 fax

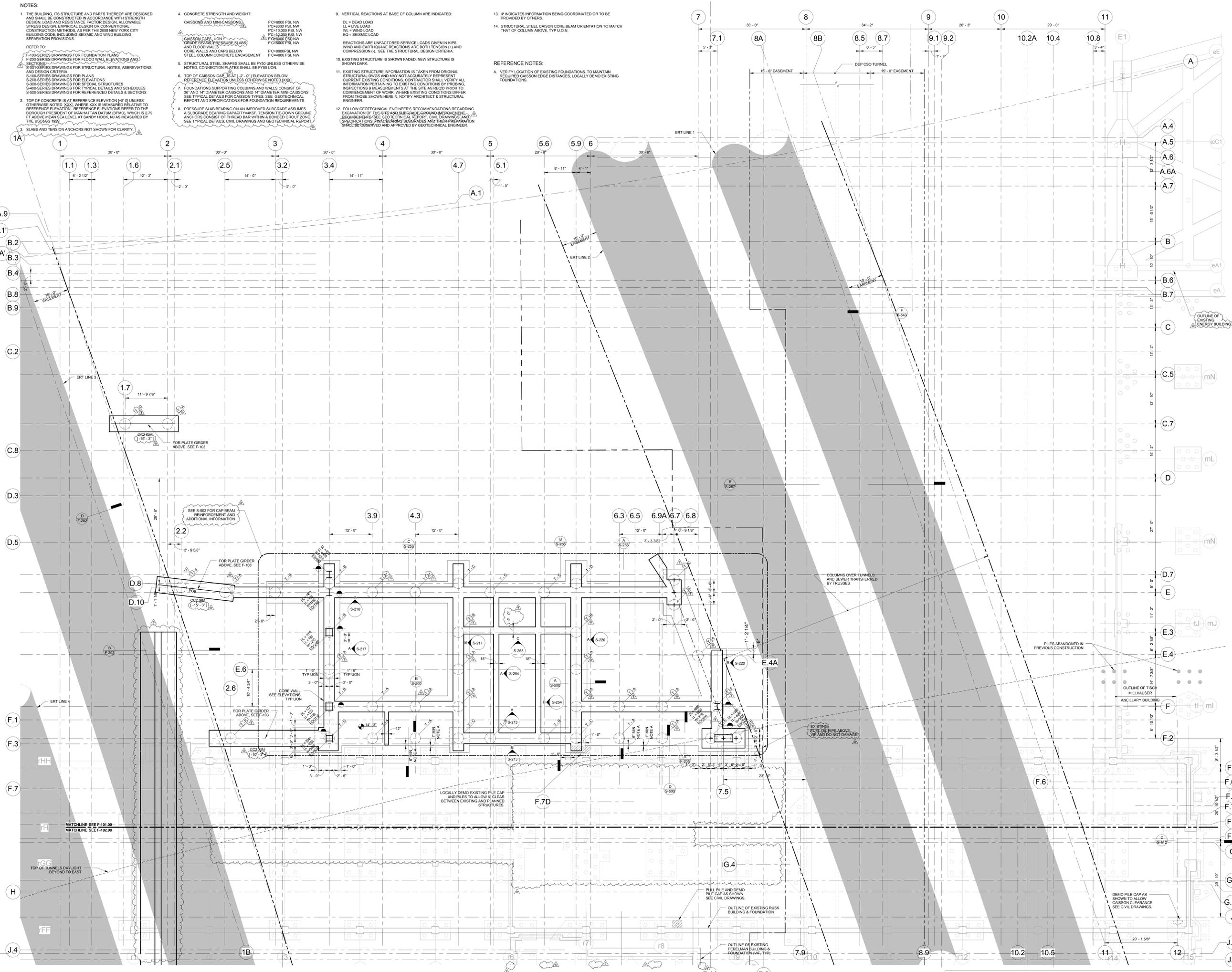
**Code Consultant**  
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**NOTES:**

- THE BUILDING, ITS STRUCTURE AND PARTS THEREOF ARE DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH STRENGTH DESIGN, LOAD AND RESISTANCE FACTOR DESIGN, ALLOWABLE STRESS DESIGN, EMPIRICAL DESIGN OR CONVENTIONAL CONSTRUCTION METHODS AS PER THE 2008 NEW YORK CITY BUILDING CODE, INCLUDING SEISMIC AND WIND BUILDING SEPARATION PROVISIONS.  
 REFER TO:  
 F-100-SERIES DRAWINGS FOR FOUNDATION PLANS  
 F-200-SERIES DRAWINGS FOR EXISTING WALL ELEVATIONS AND SECTIONS  
 S-200-SERIES DRAWINGS FOR STRUCTURAL NOTES, ABBREVIATIONS, AND DESIGN CRITERIA  
 S-100-SERIES DRAWINGS FOR PLANS  
 S-200-SERIES DRAWINGS FOR ELEVATIONS  
 S-300-SERIES DRAWINGS FOR SPECIAL STRUCTURES  
 S-400-SERIES DRAWINGS FOR TYPICAL DETAILS AND SCHEDULES  
 S-500-SERIES DRAWINGS FOR REFERENCED DETAILS & SECTIONS
- TOP OF CONCRETE IS AT REFERENCE ELEVATION (H=10) UNLESS OTHERWISE NOTED. XXX, WHERE XXX IS MEASURED RELATIVE TO REFERENCE ELEVATION. REFERENCE ELEVATIONS REFER TO THE BOROUGH PRESIDENT OF MANHATTAN DATUM (BMD), WHICH IS 2.75 FT ABOVE MEAN SEA LEVEL AT SANDY HOOK, NJ AS MEASURED BY THE USACE IN 1929.
- SLABS AND TENSION ANCHORS NOT SHOWN FOR CLARITY.
- CONCRETE STRENGTH AND WEIGHT:  
 CAISSONS AND MINI-CAISSONS:  
 FC=4000 PSI, NW  
 FC=8000 PSI, NW  
 FC=12,000 PSI, NW  
 FC=14,000 PSI, NW  
 FC=18,000 PSI, NW  
 FC=3000 PSI, NW  
 FC=8000 PSI, NW  
 FC=4000 PSI, NW
- STRUCTURAL STEEL SHAPES SHALL BE FY60 UNLESS OTHERWISE NOTED. CONNECTION PLATES SHALL BE FY50 UNK.
- TOP OF CAISSON CAP AT (Z'-0') ELEVATION BELOW REFERENCE ELEVATION UNLESS OTHERWISE NOTED XXX.
- FOUNDATIONS SUPPORTING COLUMNS AND WALLS CONSIST OF 36" AND 48" DIAMETER CAISSONS AND 14" DIAMETER MINI-CAISSONS. SEE TYPICAL DETAILS FOR CAISSON TYPES. SEE GEOTECHNICAL REPORT AND SPECIFICATIONS FOR FOUNDATION REQUIREMENTS.
- PRESSURE SLAB BEARING ON AN IMPROVED SUBGRADE ASSUMES A SUBGRADE BEARING CAPACITY OF 10,000 PSF. TENSION IN DOWN GROUND ANCHORS CONSIST OF 3/8" DIA BAR WITH A BONDED GROUT ZONE. SEE TYPICAL DETAILS, CIVIL DRAWINGS AND GEOTECHNICAL REPORT.
- VERTICAL REACTIONS AT BASE OF COLUMN ARE INDICATED:  
 DL = DEAD LOAD  
 LL = LIVE LOAD  
 WL = WIND LOAD  
 EQ = SEISMIC LOAD
- REACTIONS ARE UNFACTORED SERVICE LOADS GIVEN IN KIPS. WIND AND EARTHQUAKE REACTIONS ARE BOTH TENSION (+) AND COMPRESSION (-). SEE THE STRUCTURAL DESIGN CRITERIA.
- EXISTING STRUCTURE IS SHOWN FADED. NEW STRUCTURE IS SHOWN DARK.
- EXISTING STRUCTURE INFORMATION IS TAKEN FROM ORIGINAL STRUCTURAL DWGS AND MAY NOT ACCURATELY REPRESENT CURRENT EXISTING CONDITIONS. CONTRACTOR SHALL VERIFY ALL INFORMATION PERTAINING TO EXISTING CONDITIONS BY PROPER INSPECTIONS & MEASUREMENTS AT THE SITE AS REQD PRIOR TO COMMENCEMENT OF WORK. WHERE EXISTING CONDITIONS DIFFER FROM THOSE SHOWN HEREIN, NOTIFY ARCHITECT & STRUCTURAL ENGINEER.
- FOLLOW GEOTECHNICAL ENGINEER'S RECOMMENDATIONS REGARDING EXCAVATION OF THE SITE AND SUBGRADE IMPROVEMENT. REQUIREMENTS: SEE GEOTECHNICAL REPORT, CIVIL DRAWINGS AND SPECIFICATIONS. PILING, BERMING, SUBGRADE AND OTHER PREPARATION SHALL BE OBSERVED AND APPROVED BY GEOTECHNICAL ENGINEER.
- INDICATES INFORMATION BEING COORDINATED OR TO BE PROVIDED BY OTHERS.
- STRUCTURAL STEEL CAISSON CORE BEAM ORIENTATION TO MATCH THAT OF COLUMN ABOVE, TYP U.O.N.

**REFERENCE NOTES:**

- VERIFY LOCATION OF EXISTING FOUNDATIONS TO MAINTAIN REQUIRED CAISSON EDGE DISTANCES, LOCALLY DEMO EXISTING FOUNDATIONS.



Key Plan

8 Conformance Set 09.20.2013  
 7 100% Record Submission 06.27.2013  
 6 DOB Filing 06.26.2013  
 5 Addendum No. 2 01.11.2013  
 4 DOB Filing 12.07.2012  
 3 Addendum No. 1 12.03.2012  
 2 90% Amtrak Submission 10.26.2012  
 1 Construction Documents 10.09.2012

No. Revision Date

Date: September 20, 2013  
 Scale: 1/8" = 1'-0"  
 Project Number: 00643

Sheet Title: **LOW FOUNDATION PLAN EAST**

Sheet No: **F-101.00**

Page No: NYCD DOB Number

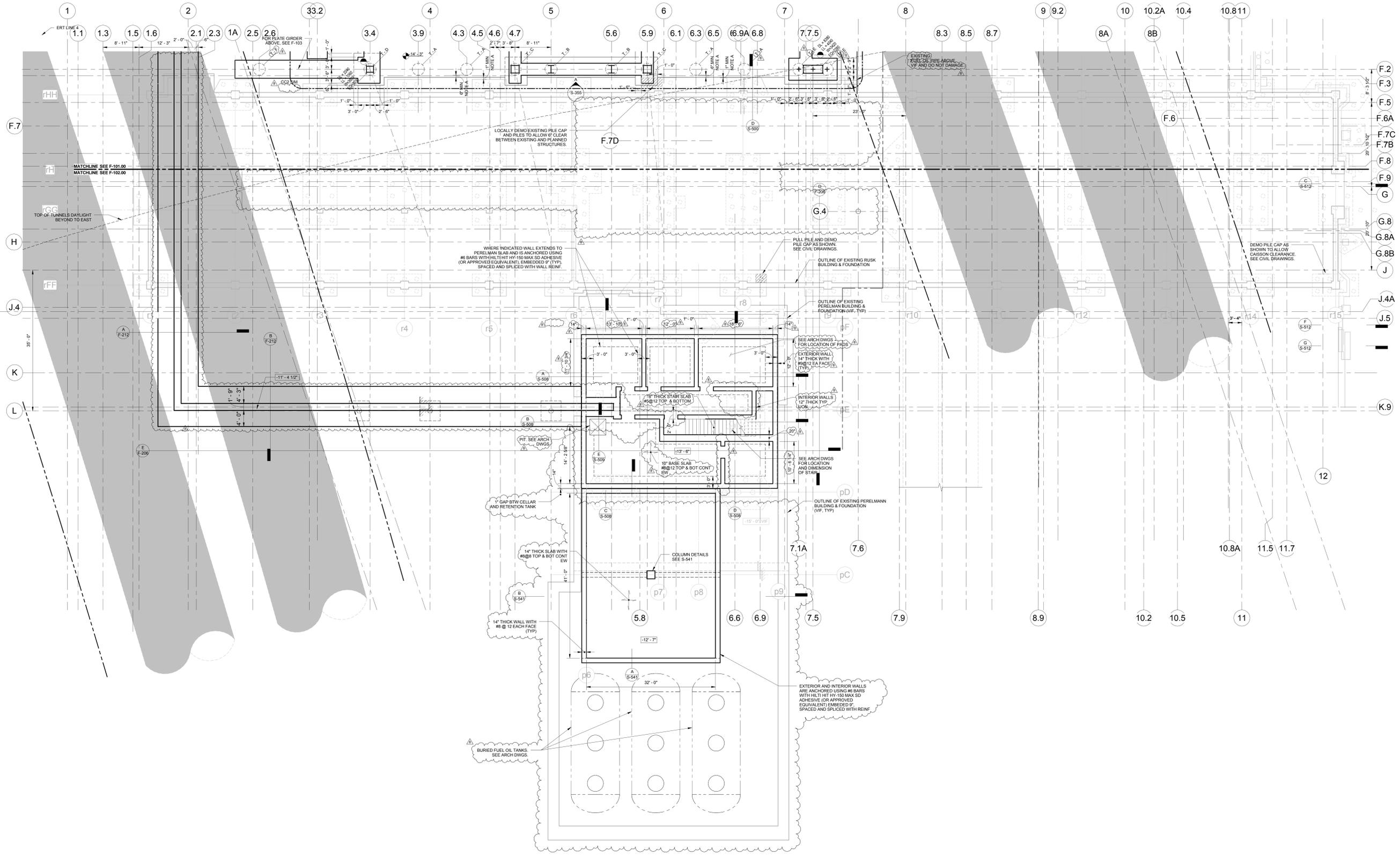
**NOTES:**

1. THE BUILDING, ITS STRUCTURE AND PARTS THEREOF ARE DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH STRENGTH DESIGN LOAD AND RESISTANCE FACTOR DESIGN ALLOWABLE STRESS DESIGN, EMPIRICAL DESIGN OR CONVENTIONAL CONSTRUCTION METHODS AS PER THE 2009 NEW YORK CITY BUILDING CODE, INCLUDING SEISMIC AND WIND BUILDING SEPARATION PROVISIONS.
2. TOP OF CONCRETE IS AT REFERENCE ELEVATION (H) UNLESS OTHERWISE NOTED XXX, WHERE XXX IS MEASURED RELATIVE TO REFERENCE ELEVATION. REFERENCE ELEVATIONS REFER TO THE BOROUGH PRESIDENT OF MANHATTAN DATUM (BMD), WHICH IS 2.75 FT ABOVE MEAN SEA LEVEL AT SANDY HOOK, NJ AS MEASURED BY THE USACE 1989.
3. SLABS AND TENSION ANCHORS NOT SHOWN FOR CLARITY.

4. CONCRETE STRENGTH AND WEIGHT:
  - CAISSONS AND MINI-CAISSONS: FC=6000 PSI, NW
  - GRADE BEAMS (PRESSURE SLABS) AND FLOOD WALLS: FC=8000 PSI, NW
  - CELLAR AND TANK WALLS: FC=8000 PSI, NW
  - STEEL COLUMN CONCRETE ENCASEMENT: FC=4000 PSI, NW
  - STRUCTURAL STEEL SHAPES SHALL BE F150 UNLESS OTHERWISE NOTED. CONNECTION PLATES SHALL BE F150 UN.
  - TOP OF CAISSON CAP JS AT 1'-4" ± ELEVATION BELOW REFERENCE ELEVATION UNLESS OTHERWISE NOTED (XXX).
  - FOUNDATIONS SUPPORTING COLUMNS AND WALLS CONSIST OF 36" AND 14" DIAMETER CAISSONS AND 14" DIAMETER MINI-CAISSONS. SEE TYPICAL DETAILS FOR CAISSON TYPES. SEE GEOTECHNICAL REPORT AND SPECIFICATIONS FOR FOUNDATION REQUIREMENTS.
  - PRESSURE SLAB BEARING ON AN IMPROVED SUBGRADE ASSUMES A SUBGRADE BEARING CAPACITY  $\geq$  4HSF. TENSION TO THE DOWN GROUND ANCHORS CONSIST OF TIE-BAR WITH A BONDED GROUT ZONE. SEE TYPICAL DETAILS, CIVIL DRAWINGS AND GEOTECHNICAL REPORT.

9. VERTICAL REACTIONS AT BASE OF COLUMN ARE INDICATED:
  - DL = DEAD LOAD
  - LL = LIVE LOAD
  - WL = WIND LOAD
  - EQ = SEISMIC LOAD
10. EXISTING STRUCTURE IS SHOWN FADED. NEW STRUCTURE IS SHOWN DARK.
11. EXISTING STRUCTURE INFORMATION IS TAKEN FROM ORIGINAL STRUCTURAL DWGS AND MAY NOT ACCURATELY REPRESENT CURRENT EXISTING CONDITIONS. CONTRACTOR SHALL VERIFY ALL INFORMATION PERTAINING TO EXISTING CONDITIONS BY PROBING, INSPECTIONS & MEASUREMENTS AT THE SITE AS REQ'D PRIOR TO COMMENCEMENT OF WORK. WHERE EXISTING CONDITIONS DIFFER FROM THOSE SHOWN HEREIN, NOTIFY ARCHITECT & STRUCTURAL ENGINEER.
12. FOLLOW GEOTECHNICAL ENGINEER'S RECOMMENDATIONS REGARDING EXCAVATION OF THE SITE AND SUBGRADE CORRECTIVE MEASUREMENTS. REQUIREMENTS: SEE GEOTECHNICAL REPORT, CIVIL DRAWINGS AND SPECIFICATIONS. FINAL BEARING SURFACES AND THEIR PREPARATION SHALL BE OBSERVED AND APPROVED BY GEOTECHNICAL ENGINEER.

13. W INDICATES INFORMATION BEING COORDINATED OR TO BE PROVIDED BY OTHERS.
  14. STRUCTURAL STEEL CAISSON CORE BEAM ORIENTATION TO MATCH THAT OF COLUMN ABOVE, TYP U.O.N.
- REFERENCE NOTES:**
1. VERIFY LOCATION OF EXISTING FOUNDATIONS TO MAINTAIN REQUIRED CAISSON EDGE DISTANCES, LOCALLY DEMO EXISTING FOUNDATIONS.



Project Title  
**NYU Langone**  
 MEDICAL CENTER  
**NYU Hospitals**  
 Center Helen L.  
 and Martin S.  
 Kimmel Pavilion

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**Key Plan**

**Revision Table**

No.	Revision	Date
8	Conformance Set	09.20.2013
7	100% Record Submission	06.27.2013
6	DOB Filing	04.26.2013
5	Addendum No. 2	01.11.2013
4	DOB Filing	12.07.2012
3	Addendum No. 1	12.03.2012
2	90% Amtrak Submission	10.28.2012
1	Construction Documents	10.09.2012

**Date**  
 September 20, 2013

**Scale**  
 1/8" = 1'-0"

**Sheet Title**  
 FOUNDATION  
 PLAN WEST

**Project Number**  
 00643

**Page No.**  
 F-102.00

**NYC DOB Number**



**NOTES:**

1. THE BUILDING, ITS STRUCTURE AND PARTS THEREOF ARE DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH STRENGTH DESIGN LOAD AND RESISTANCE FACTOR DESIGN, ALLOWABLE STRESS DESIGN, EMPIRICAL DESIGN OR CONVENTIONAL CONSTRUCTION METHODS, AS PER THE 2009 NEW YORK CITY BUILDING CODE, INCLUDING SEISMIC AND WIND BUILDING SEPARATION PROVISIONS.
2. TOP OF CONCRETE IS AT REFERENCE ELEVATION (H-4) UNLESS OTHERWISE NOTED XXX, WHERE XXX IS MEASURED RELATIVE TO REFERENCE ELEVATION. REFERENCE ELEVATIONS REFER TO THE BOROUGHS PRESIDENT OF MANHATTAN DATUM (BMD), WHICH IS 2.75 FT ABOVE MEAN SEA LEVEL AT SANDY HOOK, NJ AS MEASURED BY THE USACE 1929.
3. SLABS AND TENSION ANCHORS NOT SHOWN FOR CLARITY.

**4. CONCRETE STRENGTH AND WEIGHT:**

- CAISSONS AND MINI-CAISSONS
- FC=4000 PSI, NW
  - FC=8000 PSI, NW
  - FC=12,000 PSI, NW
  - FC=8000 PSI, NW
  - FC=4000 PSI, NW
- CAISSON CAPS, JOIN GRADE BEAMS (PRESSURE SLABS) AND FLOOR WALLS
- FC=8000 PSI, NW
  - FC=4000 PSI, NW
- STEEL COLUMN AND CAPS BELOW
- FC=8000 PSI, NW
  - FC=4000 PSI, NW

5. STRUCTURAL STEEL SHAPES SHALL BE F150 UNLESS OTHERWISE NOTED. CONNECTION PLATES SHALL BE F150 UNK.
6. TOP OF CAISSON CAP AT (Z'-0') ELEVATION BELOW REFERENCE ELEVATION UNLESS OTHERWISE NOTED XXX.
7. FOUNDATIONS SUPPORTING COLUMNS AND WALLS CONSIST OF 36" AND 14" DIAMETER CAISSONS AND 14" DIAMETER MINI-CAISSONS. SEE TYPICAL DETAILS FOR CAISSON TYPES. SEE GEOTECHNICAL REPORT AND SPECIFICATIONS FOR FOUNDATION REQUIREMENTS.
8. PRESSURE SLAB BEARING ON AN IMPROVED SUBGRADE ASSUMES A SUBGRADE BEARING CAPACITY HIGHER THAN THE DOWN-GROUND ANCHORS CONSIST OF THREE BAR WITHIN A BONDED GROUT ZONE. SEE TYPICAL DETAILS, CIVIL DRAWINGS AND GEOTECHNICAL REPORT.

**9. VERTICAL REACTIONS AT BASE OF COLUMN ARE INDICATED:**

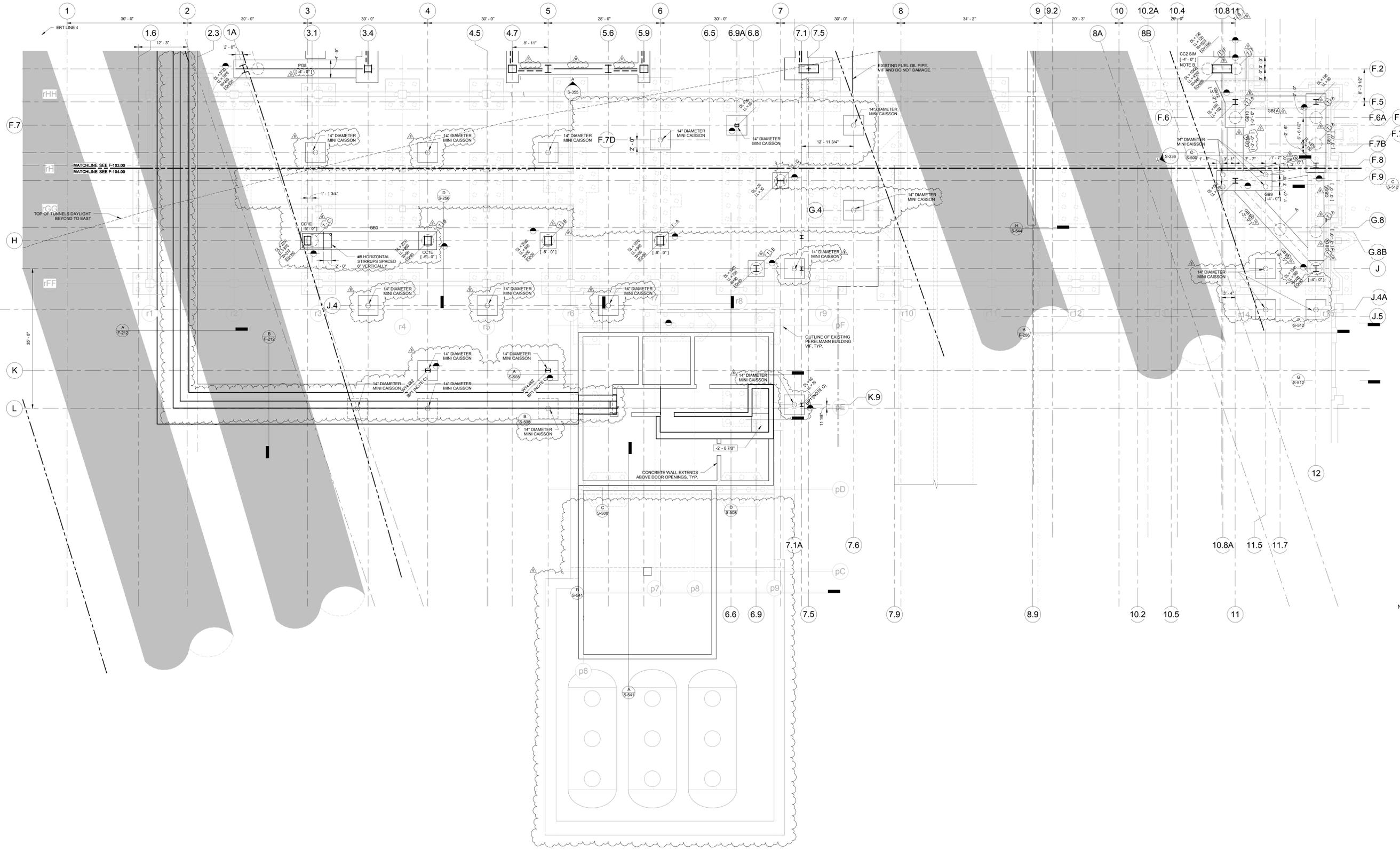
- DL = DEAD LOAD
  - LL = LIVE LOAD
  - WL = WIND LOAD
  - EQ = SEISMIC LOAD
- REACTIONS ARE UNFACTORED SERVICE LOADS GIVEN IN KIPS. WIND AND EARTHQUAKE REACTIONS ARE BOTH TENSION (+) AND COMPRESSION (-). SEE THE STRUCTURAL DESIGN CRITERIA.

10. EXISTING STRUCTURE IS SHOWN FADED. NEW STRUCTURE IS SHOWN DARK.
11. EXISTING STRUCTURE INFORMATION IS TAKEN FROM ORIGINAL STRUCTURAL DWGS AND MAY NOT ACCURATELY REPRESENT CURRENT EXISTING CONDITIONS. CONTRACTOR SHALL VERIFY ALL INFORMATION PERTAINING TO EXISTING CONDITIONS BY PROBING, INSPECTIONS & MEASUREMENTS AT THE SITE AS READ PRIOR TO COMMENCEMENT OF WORK. WHERE EXISTING CONDITIONS DIFFER FROM THOSE SHOWN HEREIN, NOTIFY ARCHITECT & STRUCTURAL ENGINEER.
12. FOLLOW GEOTECHNICAL ENGINEER'S RECOMMENDATIONS REGARDING EXCAVATION OF THE SITE AND SUBGRADE IMPROVEMENT. REQUIREMENTS: SEE GEOTECHNICAL REPORT, CIVIL DRAWINGS AND SPECIFICATIONS. FINAL BEARING SURFACES AND THEIR PREPARATION SHALL BE OBSERVED AND APPROVED BY GEOTECHNICAL ENGINEER.

**REFERENCE NOTES:**

- A. VERIFY LOCATION OF EXISTING FOUNDATIONS TO MAINTAIN REQUIRED CAISSON EDGE DISTANCES, LOCALLY DEMO EXISTING FOUNDATIONS.
- B. PROVIDE FC = 8000 PSI, NW.
- C. SEE BASE PLATE SCHEDULE ON S-407.

13. W INDICATES INFORMATION BEING COORDINATED OR TO BE PROVIDED BY OTHERS.
14. STRUCTURAL STEEL CAISSON CORE BEAM ORIENTATION TO MATCH THAT OF COLUMN ABOVE, TYP U.O.N.



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**Scale**

**Key Plan**

No.	Revision	Date
8	Conformance Set	09.20.2013
7	100% Record Submission	06.27.2013
6	DOB Filing	04.26.2013
5	Addendum No. 2	01.11.2013
4	DOB Filing	12.07.2012
3	Addendum No. 1	12.03.2012
2	90% Amtrak Submission	10.28.2012
1	Construction Documents	10.09.2012

Date: **September 20, 2013** Project Number: **00643**  
 Scale: **1/8" = 1'-0"**

Sheet Title:  
**FOUNDATION PLAN**  
**WEST**

Sheet No.:  
**F-104.00**

Page No.:  
 NYC DOB Number:

**NOTES:**

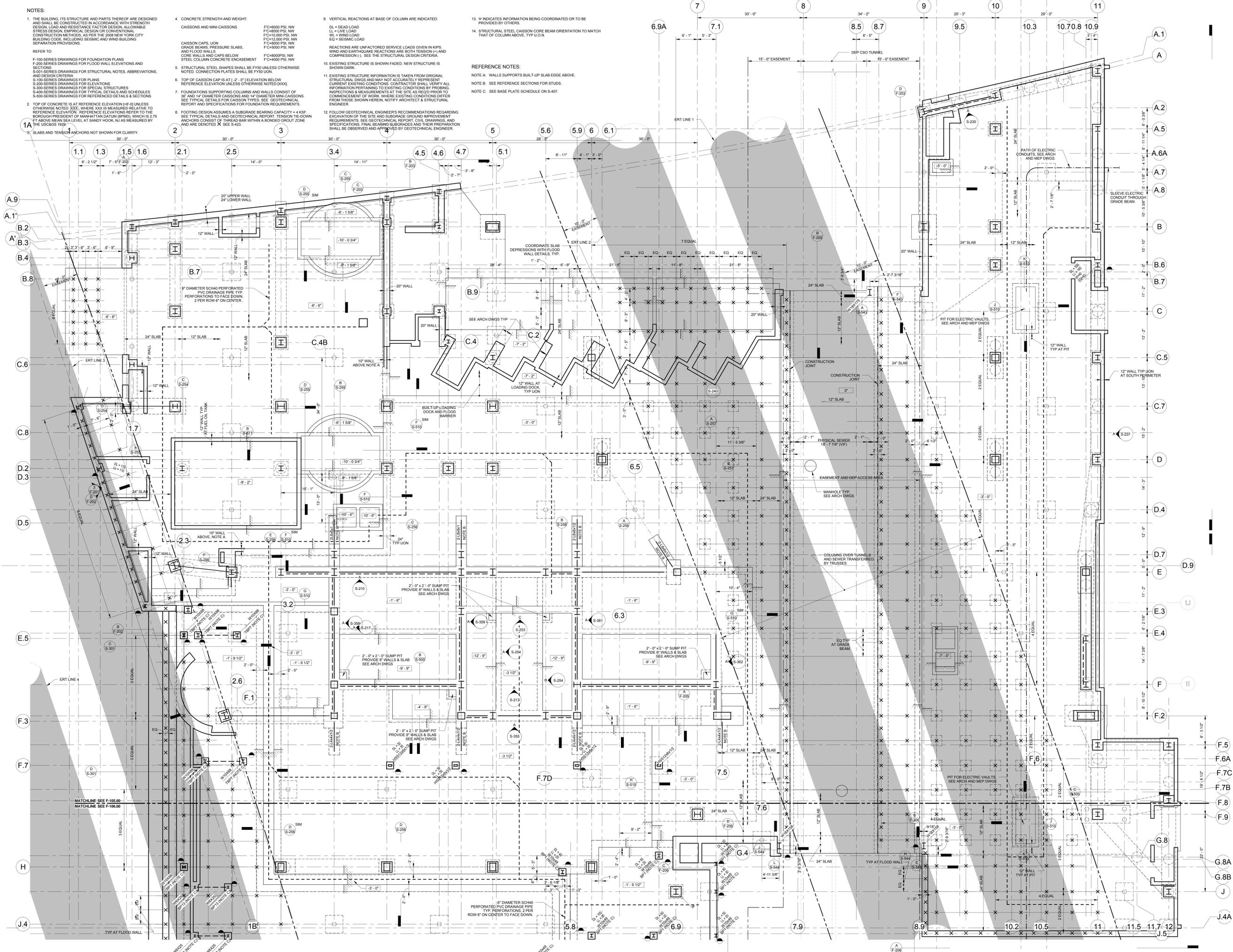
1. THE BUILDING, ITS STRUCTURE AND PARTS THEREOF ARE DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH STRENGTH DESIGN LOAD AND RESISTANCE FACTOR DESIGN ALLOWABLE STRESS DESIGN, EMPIRICAL DESIGN OR CONVENTIONAL CONSTRUCTION METHODS AS FOR THE 2009 NEW YORK CITY BUILDING CODE, INCLUDING SEISMIC AND WIND BUILDING SEPARATION PROVISIONS.
2. TOP OF CONCRETE IS AT REFERENCE ELEVATION (H) UNLESS OTHERWISE NOTED. XXXX WHERE XXXX IS MEASURED RELATIVE TO REFERENCE ELEVATION. REFERENCE ELEVATIONS REFER TO THE BOROUGH PRESIDENT OF MANHATTAN DATUM (B.M.D.), WHICH IS 2.75 FT ABOVE MEAN SEA LEVEL AT SANDY HOOK, NJ AS MEASURED BY THE USGS 1929.
3. SLABS AND TENSION ANCHORS NOT SHOWN FOR CLARITY.

4. CONCRETE STRENGTH AND WEIGHT:
  - CAISSONS AND MINI-CAISSONS
    - FC=6000 PSI, NW
    - FC=8000 PSI, NW
    - FC=10,000 PSI, NW
    - FC=12,000 PSI, NW
    - FC=8000 PSI, NW
    - FC=6000 PSI, NW
    - FC=4000 PSI, NW
  - CAISSON CAPS, LION GRADE BEAMS, PRESSURE SLABS, AND FLOOD WALLS CORE WALLS AND CAPS BELOW STEEL COLUMN CONCRETE ENCASEMENT
    - FC=8000PSI, NW
    - FC=6000PSI, NW
    - FC=4000 PSI, NW
5. STRUCTURAL STEEL SHAPES SHALL BE FY60 UNLESS OTHERWISE NOTED. CONNECTION PLATES SHALL BE F750 LION.
6. TOP OF CAISSON CAP IS AT (-2'-0") ELEVATION UNLESS OTHERWISE NOTED [XXX].
7. FOUNDATIONS SUPPORTING COLUMNS AND WALLS CONSIST OF 36" AND 48" DIAMETER CAISSONS AND 14" DIAMETER MINI-CAISSONS. SEE TYPICAL DETAILS FOR CAISSON TYPES. SEE GEOTECHNICAL REPORT AND SPECIFICATIONS FOR FOUNDATION REQUIREMENTS.
8. FOOTING DESIGN ASSUMES A SUBGRADE BEARING CAPACITY = 4 KSF. SEE TYPICAL DETAILS AND GEOTECHNICAL REPORT. TENSION TIE-DOWN ANCHORS CONSIST OF TIE-BARS WITH A BONDED GROUT ZONE AND ARE DENOTED AS SEE S-423.

9. VERTICAL REACTIONS AT BASE OF COLUMN ARE INDICATED:
  - DL = DEAD LOAD
  - LL = LIVE LOAD
  - WL = WIND LOAD
  - EQ = SEISMIC LOAD
10. EXISTING STRUCTURE IS SHOWN FADED. NEW STRUCTURE IS SHOWN DARK.
11. EXISTING STRUCTURE INFORMATION IS TAKEN FROM ORIGINAL STRUCTURAL DWGS AND MAY NOT ACCURATELY REPRESENT CURRENT EXISTING CONDITIONS. CONTRACTOR SHALL VERIFY ALL INFORMATION PERTAINING TO EXISTING CONDITIONS BY PROBING, INSPECTIONS & MEASUREMENTS AT THE SITE AS READ PRIOR TO COMMENCEMENT OF WORK. WHERE EXISTING CONDITIONS DIFFER FROM THOSE SHOWN HEREIN, NOTIFY ARCHITECT & STRUCTURAL ENGINEER.
12. FOLLOW GEOTECHNICAL ENGINEER'S RECOMMENDATIONS REGARDING EXCAVATION OF THE SITE AND SUBGRADE IMPROVEMENT REQUIREMENTS. SEE GEOTECHNICAL REPORT, CIVIL DRAWINGS, AND SPECIFICATIONS. FINAL BEARING SUBGRADES AND THEIR PREPARATION SHALL BE OBSERVED AND APPROVED BY GEOTECHNICAL ENGINEER.

13. W INDICATES INFORMATION BEING COORDINATED OR TO BE PROVIDED BY OTHERS.
14. STRUCTURAL STEEL, CAISSON CORE BEAM ORIENTATION TO MATCH THAT OF COLUMN ABOVE, TYP U.O.N.

- REFERENCE NOTES:**
- NOTE A: WALLS SUPPORTS BUILT-UP SLAB EDGE ABOVE.
  - NOTE B: SEE REFERENCE SECTIONS FOR STUDS.
  - NOTE C: SEE BASE PLATE SCHEDULE ON S-407.



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**Scale:** 1/8" = 1'-0"

**Sheet Title:** LOW PRESSURE SLAB EAST

**Sheet No:** F-105.00

**Page No:** NYCD DB Number

**Key Plan:** [Key plan diagram showing the location of the slab within the overall building footprint]

**North Arrow:** [North arrow pointing towards the top of the sheet]

**Revisions:**

No.	Revision	Date
1	Conference Set	09.20.2013
No.	Revision	Date

**Date:** September 20, 2013  
**Scale:** 1/8" = 1'-0"  
**Project Number:** 00643

**Sheet Title:** LOW PRESSURE SLAB EAST

**Sheet No:** F-105.00

**Page No:** NYCD DB Number

**NOTES:**

1. THE BUILDING, ITS STRUCTURE AND PARTS THEREOF ARE DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH STRENGTH DESIGN LOAD AND RESISTANCE FACTOR DESIGN ALLOWABLE STRESS DESIGN, EMPIRICAL DESIGN OR CONVENTIONAL CONSTRUCTION METHODS AS PER THE 2009 NEW YORK CITY BUILDING CODE, INCLUDING SEISMIC AND WIND BUILDING SEPARATION PROVISIONS.
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3. SLABS AND TENSION ANCHORS NOT SHOWN FOR CLARITY.

4. CONCRETE STRENGTH AND WEIGHT:
 

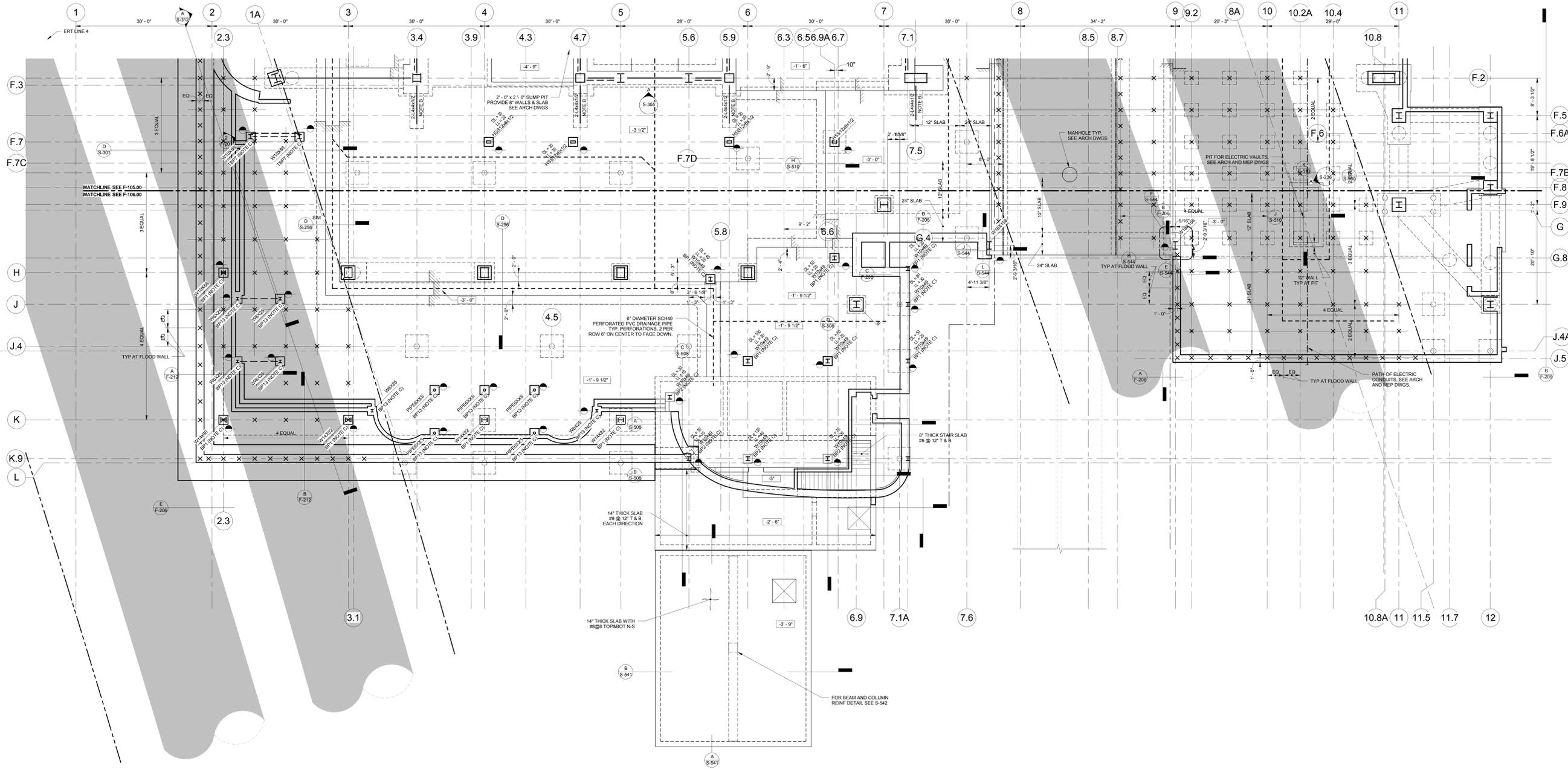
CAISSONS AND MINI-CAISSONS	FC=6000 PSI, NW
	FC=4000 PSI, NW
	FC=12,000 PSI, NW
CAISSON CAPS, LION GRADE BEAMS, PRESSURE SLABS, AND FLOOD WALLS	FC=6000 PSI, NW
CORE WALLS AND CAPS BELOW STEEL COLUMN CONCRETE ENCASUREMENT	FC=8000 PSI, NW
	FC=4000 PSI, NW
5. STRUCTURAL STEEL SHAPES SHALL BE F150 UNLESS OTHERWISE NOTED. CONNECTION PLATES SHALL BE F150 LION.
6. TOP OF CAISSON CAP IS AT (-2'-0") ELEVATION UNLESS OTHERWISE NOTED [XXX].
7. FOUNDATIONS SUPPORTING COLUMNS AND WALLS CONSIST OF 36" AND 14" DIAMETER CAISSONS AND 14" DIAMETER MINI-CAISSONS. SEE TYPICAL DETAILS FOR CAISSON TYPES. SEE GEOTECHNICAL REPORT AND SPECIFICATIONS FOR FOUNDATION REQUIREMENTS.
8. FOOTING DESIGN ASSUMES A SUBGRADE BEARING CAPACITY = 4 KSF. SEE TYPICAL DETAIL S-1 AND GEOTECHNICAL REPORT. TENSION TIE-DOWN ANCHORS CONSIST OF TIE-BAR WITH A BONDED GROUT ZONE AND ARE DENOTED X SEE

9. VERTICAL REACTIONS AT BASE OF COLUMN ARE INDICATED:
 

DL = DEAD LOAD
LL = LIVE LOAD
WL = WIND LOAD
EQ = SEISMIC LOAD

 REACTIONS ARE UNFACTORED SERVICE LOADS GIVEN IN KIPS. WIND AND EARTHQUAKE REACTIONS ARE BOTH TENSION (+) AND COMPRESSION (-). SEE THE STRUCTURAL DESIGN CRITERIA.
10. EXISTING STRUCTURE IS SHOWN FADED. NEW STRUCTURE IS SHOWN DARK.
11. EXISTING STRUCTURE INFORMATION IS TAKEN FROM ORIGINAL STRUCTURAL DWGS AND MAY NOT ACCURATELY REPRESENT CURRENT EXISTING CONDITIONS. CONTRACTOR SHALL VERIFY ALL INFORMATION PERTAINING TO EXISTING CONDITIONS BY PROBING, INSPECTIONS & MEASUREMENTS AT THE SITE AS READ PRIOR TO COMMENCEMENT OF WORK. WHERE EXISTING CONDITIONS DIFFER FROM THOSE SHOWN HEREIN, NOTIFY ARCHITECT & STRUCTURAL ENGINEER.
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**NYU Langone MEDICAL CENTER**

**NYU Hospitals Center Helen L. and Martin S. Kimmel Pavilion**

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Key Plan

1. Conference Set 09/20/2013  
No. Revision Date

Date September 20, 2013 Project Number 00643  
Scale 1/8" = 1'-0"

Sheet Title  
**LOW PRESSURE SLAB WEST**

Sheet No.  
**F-106.00**

Page No.  
NYC DOB Number

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