

Limited Phase II
Environmental Site Assessment

The Henry Apartments

**Broadway & Decatur Street,
Brooklyn, New York**

NP&V Job# 13110

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1.0 INTRODUCTION AND PURPOSE

Nelson, Pope & Voorhis, LLC (NP&V) has been contracted to prepare a Limited Phase II Environmental Site Assessment for the subject properties. This report is intended to address recognized environmental conditions that were identified in Phase I Environmental Site Assessments prepared by NP&V completed in May 2013 and (summarized below). This Limited Phase II ESA was designed to determine what, if any, impact prior on-site activities have had upon the environmental quality of the subject properties.

The subject properties consist of two (2) sites located across Decatur Street from each other, on the west side of Broadway in Brooklyn, New York. The following summarizes the locations, existing conditions, environmental concerns, and Phase II activities completed on each of the sites:

1674-1684 Broadway

This property is identified on the New York City Tax Map as: Block 1503, Lots 29, 31, 34, and 38, and occupies approximately 15,546 square feet of land. The subject property is located on the northwest corner of Broadway and Decatur Street and is currently developed with two (2) commercial buildings and two (2) paved parking/storage areas. The property was purchased with private equity in 2012 and is currently owned by Broadway Decatur Owners LLC (Alembic Community Development and Avery Enterprises Inc.).

Based on a Phase I ESA completed by NP&V in May 2013, two (2) recognized environmental conditions were identified in connection with the subject property due to the presence of above ground storage tanks and an inactive fuel oil-fired boiler in the basement beneath the hardware store building, and a gooseneck pipe evidencing a possible former sanitary system for the previous concession stand in the southwestern paved storage area of the property. The Department of Housing, Planning & Development (HPD) expressed concerns regarding the environmental quality of the property due to existing site conditions and historical use of adjacent properties as dry cleaning and manufacturing facilities.

As a result, it was determined in the approved October 2013 Work Plan that three (3) soil probes should be installed on the property in order to collect soil samples as follows: from 0'-2' below ground surface (bgs), from the maximum excavation depth of the proposed building (15'-17' bgs); groundwater samples should be collected from two (2) locations if groundwater is encountered within 30' bgs, and soil vapor samples should be collected from two (2) probes

within the proposed building footprint. In addition, it was requested that a Ground Penetrating Radar (GPR) survey be performed in the paved parking areas in order to ensure that there are no storage tanks or sanitary structures remaining from past use of the property.

760-770 Decatur Street/1696-1712 Broadway

This property is identified on the New York City Tax Map as: Block 1507, Lots 32, 33, 35, 36, 37, 39 and 41, and occupies approximately 20,368 SF of land. The subject property is located on the southwest corner of Broadway and Decatur Street. Currently, the subject property is vacant, City-owned land.

Based on a Phase I ESA completed by NP&V in May 2013, two (2) recognized environmental conditions were identified in connection with the subject property due to the presence of soil piles along the western edge of the property and the historical occupancy of the property by several four-story buildings including two (2) dry cleaning facilities. HPD expressed concerns regarding the environmental quality of the property due to existing site conditions and historical use of the subject property as a dry cleaning facility.

As a result, it was determined in the approved October 2013 Work Plan that five (5) soil probes should be installed on the property in order to collect soil samples as follows: from 0'-2' below ground surface (bgs), from the maximum excavation depth of the proposed building (15' bgs); groundwater samples should be collected from two (2) locations if groundwater is encountered within 30' bgs, and soil vapor samples should be collected from four (4) representative probes. In addition, it was requested that a composite soil sample be collected from the soil piles along the western property edge, and that Ground Penetrating Radar (GPR) survey be performed on the site in order to ensure that there are no storage tanks or sanitary structures remaining from past occupancy of the property.

This assessment has been designed and performed by NP&V to address these issues identified by the HPD as specified above. The laboratory analysis was provided by Long Island Analytical Laboratories, Inc.

The protocol used to direct this investigation is based upon the following documents: 1) the New York State Department of Environmental Conservation (NYSDEC), Environmental Remediation Program Part 375 and 2) NYS Department of Health Guidance for Evaluating Soil Vapor Intrusion in the State of New York. The following sections detail the subject property and surrounding area characteristics, sampling program, quality assurance protocol, laboratory analysis methodology and laboratory results.

2.0 SAMPLING AND ANALYSIS PROGRAM (SAP)

2.1 GROUND PENETRATING RADAR SURVEY

A remote sensing ground penetrating radar field survey was performed over portions of the planimetric surfaces of each of the subject properties. Specifically, in each of the paved areas of the 1674-1684 Broadway property, in order to identify any anomalies that may correspond to existing sanitary systems in the vicinity of the gooseneck pipe identified, and in the vicinity of the identified historical structures on the 768-770 Decatur Street/1696-1712 Broadway property. The GPR unit utilized was a GSSI model SIR-3000 with a 400 MHz antenna.

The GPR system consisted of a control unit, control cable, and a transducer. The GPR control unit transmits a trigger pulse at a normal repetition rate of 50 KHz. The pulse is then sent to the transmitter electronics in the transducer (antenna) via the control cable where the trigger pulses are transformed into bipolar pulses with higher amplitudes. The transformed pulse will vary in shape and frequency according to the transducer used. The GSSI system is capable of transmitting electromagnetic energy into the subsurface of the earth in the frequency range of 16 MHz to 2000 MHz. In the subsurface, reflections of the pulse occur at boundaries where there is a dielectric contrast (void, steel, soil type). The reflected portion of the signal travels back to the antenna and the control unit and is subsequently shown on the display of the computers color video monitor for interpolation.

A qualified technician specified a coordinate system on the planimetric surfaces to locate any subsurface dielectric anomalies on the premises. The operator used knowledge of the subsurface soil composition to calibrate the SIR-3000 system to site specific conditions. Factor settings such as range, gain, number of gain points, and scans per unit, were modified to yield the most accurate data to describe the subsurface conditions.

The GPR survey was completed by dividing the areas of the properties into grids and traversing the property with the GPR unit along the grid lines. The “grid” lines were set up in five (5) foot intervals along the north-south and east-west axes of the property. The survey did not identify any anomalies typical of an underground storage tank or sanitary system on either of the subject properties.

2.2 SHALLOW SOIL SAMPLES

Shallow soil samples were collected by utilizing a stainless steel hand auger to bore a hole approximately 2’ deep. The soil was placed in a stainless steel bowl and mixed prior to being placed in laboratory supplied sample vessels for transportation to the laboratory. **Figure 1** provides a map identifying the location of the above referenced soil samples.

1674-1684 Broadway

Shallow samples were collected from three (3) strategic locations on the 1674-1684 Broadway site. One (1) sample was located in the southwestern paved area of the subject property, one (1) sample was located in the southeastern paved area of the subject property, and one (1) sample was collected from beneath the basement of the hardware store in the northern portion of the subject property. The shallow soil samples were collected from 0'-2' bgs in each of the paved parking areas, and from 10'-12' feet bgs (0'-2' beneath the depth of the existing basement foundation) in the hardware store basement.

760-770 Decatur Street/1696-1712 Broadway

Shallow samples were collected from five (5) strategic locations on the 760-770 Decatur Street/1696-1712 Broadway property. The samples were collected from locations evenly spaced across the property that were considered representative of the subject property subsurface from a depth of 0'-2' bgs.

2.3 DEEP SOIL SAMPLES

Soil probes were installed using a Power Probe hydraulic probing unit in order to collect soil samples which provided a representation of the subsurface soil in five (5) foot intervals from grade to the desired depth. **Figure 1** provides a map identifying the location of the below referenced soil probes.

1674-1684 Broadway

Two (2) soil probes were drilled to a depth of thirty (30) feet and terminated, since groundwater was not encountered on the 1674-1684 Broadway property. These probes were installed in the southwestern and southeastern paved parking areas of the property, as previously described. Deep soil samples were collected from each of the probes installed in the paved parking areas at a depth of 15'-17' below grade, since the proposed structure for 1674-1684 Broadway will be situated on a basement foundation.

The deep sample collected from the basement of the hardware store was collected at a depth of 15'-17' below grade utilizing a hand auger, since it was not possible to utilize the Power Probe unit in the basement. This sample was collected by utilizing a stainless steel hand auger to bore a hole approximately 7' deep. This soil was placed in a stainless steel bowl and mixed prior to being placed in laboratory supplied sample vessels for transportation to the laboratory.

760-770 Decatur Street/1696-1712 Broadway

Two (2) soil probes (located in the northwest and southeast corners of the subject property) were drilled to a depth of thirty (30) feet and terminated, since groundwater was not encountered on the 760-770 Decatur Street/1696-1712 Broadway property. The three (3) additional soil probes located in the remainder of the property were drilled to a depth of seventeen (17) feet and

terminated. Deep soil samples were collected from each of the probes installed at a depth of 15'-17' below grade, since the proposed structure for 760-770 Decatur Street/1696-1712 Broadway will be situated on a basement foundation.

2.3.1 Soil Probe Installation

The soil probes were installed using a Power Probe hydraulically powered soil probing tool. Mechanized, vehicle mounted soil probe systems apply both static force and hydraulically powered percussion hammers for tool placement. Recovery of large sample volumes was facilitated with a probe-driven sampler. The probe-driven sampler consisted of a dual tube sampling system that has an outer tube that remains in the ground while the inner tube is removed along with the non-reactive plastic tube in which the soil sample has been collected. This dual tube sampling system ensures that the soil sample collected is from the selected sampling depth as the probe was advanced. Discrete samples were secured at the desired depths and were contained within a non-reactive plastic sleeve that lined the hollow probe for subsequent inspection and analysis.

2.4 GROUNDWATER SAMPLES

1674-1684 Broadway

Groundwater samples were not collected from the 1674-1684 Broadway property since groundwater was not encountered within a depth of 30 feet below grade surface (bgs).

760-770 Decatur Street/1696-1712 Broadway

Groundwater samples were not collected from the 760-770 Decatur Street/1696-1712 Broadway property since groundwater was not encountered within a depth of 30 feet below grade surface (bgs).

2.5 SOIL VAPOR SAMPLING

All of the soil gas sampling was conducted using properly decontaminated Summa[®] canisters supplied by the laboratory and fitted with air flow regulators calibrated for a two (2) hour draw period.

1674-1684 Broadway

Two (2) temporary subsurface soil gas probes were installed at the 1674-1684 Broadway property. One (1) subsurface soil gas probe was installed in the southeastern paved parking area of the subject property, and one (1) subsurface soil gas probe was installed beneath the concrete floor in the hardware store basement.

760-770 Decatur Street/1696-1712 Broadway

Four (4) temporary subsurface soil gas probes were installed in representative quadrants at the 760-770 Decatur Street/1696-1712 Broadway.

2.5.1 Soil Vapor Point Installation

The soil vapor points were drilled to a depth of 15'-17' below the subsurface and the well probe was inserted into the boring and constructed with polyethylene tubing which was perforated to promote the flow of any soil gases which may be present in sub-soils. The annular space surrounding the well probe was backfilled with a coarse gravel pack to cover the perforated section of tubing screen and the remaining annular space was sealed with modeling clay to seal the well from any outside air intrusion.

2.5.2 Soil Vapor Sample Collection

Prior to collection of the soil gas sample, a tracer gas test was conducted on the well probe as a quality assurance/quality control (QA/QC) measure to verify the integrity of the soil vapor probe seal. A helium tracer gas was used during the test and conducted in a manner consistent with the procedures outlined in Section 2.7.5 of the Guidance for Evaluating Soil Vapor Intrusion in the State of New York. During the test, an enriched atmosphere ranging from 98 to 100 percent was achieved in the immediate vicinity of the area where the probes intersected the ground surface using a 5-gallon bucket over the well point. Soil gas air was purged from the soil gas probe at a rate of 0.20 liters per minute (L/min). Following the well purging, a helium detector was used to extract the air from the well and record the concentration of helium contained within. Results of the test detected less than one (1) percent helium; this procedure indicates that an adequate seal had been obtained for all of the probes installed.

Following QA/QC procedures approximately one (1) to three (3) volumes of air were purged from the soil vapor point locations to ensure the collection of a representative sample of soil gas as outlined in Section 2.7 of the NYSDOH Guidance Manual.

The Summa[®] canisters were fitted with a 2-hour regulator was used for the withdrawal of the soil gas samples to ensure a soil gas collection rate of less than 0.20 L/min. The canisters and regulators were connected to the well points and soil gas was extracted via the negative pressure atmosphere within the canister.

2.6 SOIL PILE SAMPLING

One (1) composite soil pile sample was collected from the soil piles present on the western side of the 760-770 Decatur Street/1696-1712 Broadway property. The sample was collected by utilizing a stainless steel hand auger to bore into two (2) representative locations on each soil pile. The soil from each of the soil piles was placed in a stainless steel bowl and mixed prior to being placed in laboratory supplied sample vessels for transportation to the laboratory. **Figure 1** provides a map identifying the location of the soil pile sample.

2.7 LABORATORY SAMPLE LOCATION AND FREQUENCY

The soil and soil vapor samples collected from the site were containerized and labeled for identification purposes. The labels were coded to correspond to the location from which the samples were secured. **Figures 1A** and **1B** provide maps identifying the locations of the samples and how the samples were coded during labeling. **Tables 2A** and **2B** provide a list of the Sample ID and the depth from which the samples sent to the laboratory were collected.

TABLE 2A

SAMPLE IDENTIFICATION - 1674-1684 BROADWAY

SAMPLE ID	DATE COLLECTED	SAMPLE LOCATION/ DEPTH
Site A SE 0'-2'	2/20/2014	Soil sample collected from the southeastern paved parking area of the 1674-1684 Broadway Property at a depth of 0'-2' bgs.
Site A SE 15'-17'	2/20/2014	Soil sample collected from the southeastern paved parking area of the 1674-1684 Broadway Property at a depth of 15'-17' bgs.
Site A Basement 10'-12'	2/20/2014	Soil sample collected from the basement beneath the hardware store in the northern portion of the 1674-1684 Broadway Property at a depth of 10'-12' bgs.
Site A Basement 15'-17'	2/20/2014	Soil sample collected from the basement beneath the hardware store in the northern portion of the 1674-1684 Broadway Property at a depth of 15'-17' bgs.
Site A SW 0'-2'	2/20/2014	Soil sample collected from the southwestern paved parking area of the 1674-1684 Broadway Property at a depth of 0'-2' bgs.
Site A SW 15'-17'	2/20/2014	Soil sample collected from the southwestern paved parking area of the 1674-1684 Broadway Property at a depth of 15'-17' bgs.
Site A Basement SG	2/20/2014	Soil vapor sample collected from the basement beneath the hardware store in the northern portion of the 1674-1684 Broadway Property at a depth of 15'-17' bgs.
Site A SE SG	2/20/2014	Soil vapor sample collected from the southeastern paved parking area of the 1674-1684 Broadway Property at a depth of 15'-17' bgs.

TABLE 2B
SAMPLE IDENTIFICATION - 760-770 DECATUR STREET/1696-1712 BROADWAY

SAMPLE ID	DATE COLLECTED	SAMPLE LOCATION/ DEPTH
B-1 0'-2'	2/20/14	Soil sample collected from the southern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 0'-2' bgs.
B-1 15'-17'	2/20/14	Soil sample collected from the southern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 15'-17' bgs.
B-2 0'-2'	2/20/14	Soil sample collected from the northwestern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 0'-2' bgs.
B-2 15'-17'	2/20/14	Soil sample collected from the northwestern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 15'-17' bgs.
B-3 0'-2'	2/20/14	Soil sample collected from the northern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 0'-2' bgs.
B-3 15'-17'	2/20/14	Soil sample collected from the northern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 15'-17' bgs.
B-4 0'-2'	2/20/14	Soil sample collected from the eastern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 0'-2' bgs.
B-4 15'-17'	2/20/14	Soil sample collected from the eastern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 15'-17' bgs.
B-5 0'-2'	2/20/14	Soil sample collected from the southwestern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 0'-2' bgs.
B-5 15'-17'	2/20/14	Soil sample collected from the southwestern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 15'-17' bgs.
Site B Soil Pile	2/20/14	Composite soil sample collected from the soil piles located in the western portion of the 760-770 Decatur Street/1696-1712 Broadway Property.
Site B SG1	2/20/14	Soil vapor sample collected from the southern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 15'-17' bgs.
Site B SG2	2/20/14	Soil vapor sample collected from the eastern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 15'-17' bgs.
Site B SG3	2/20/14	Soil vapor sample collected from the northern portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 15'-17' bgs.
Site B SG4	2/20/14	Soil vapor sample collected from the western portion of the 760-770 Decatur Street/1696-1712 Broadway Property at a depth of 15'-17' bgs.

2.8 USER RELIANCE

Nelson, Pope & Voorhis, LLC (NP&V) understands that our client (and their successors or assigns) are relying upon the contents of this Limited Phase II Environmental Site Assessment report for the above referenced property in making a loan secured by or affecting the property and/or acquiring the property as the case may be. The format of this Limited Phase II Environmental Site Assessment was predicated upon general guideline requirements established by individual lending institutions, American Society for Testing and Materials Standards (1903-11), various professional organizations, and our professional judgment.

The following entities can rely upon the contents of this Limited Phase II ESA for the above referenced property in making a loan secured by or affecting the property and/or acquiring the property as the case may be.

1. The City of New York, including its officials and employees, and its successors and/or assigns
c/o Department of Housing Preservation & Development
2. Broadway Decatur Owners LLC, its successors and/or assigns
3. Broadway Decatur Housing Development Fund Corporation, its successors and/or assigns
4. Alembic Development Company, LLC, its successors and/or assigns
5. SUS-Mental Health Programs, Inc., its successors and/or assigns
6. Olive Branch Consulting, Ltd.
7. State of New York Mortgage Agency, its successors and/or assigns
8. Services for the Underserved, Inc., its successors and/or assigns

3.0 LABORATORY ANALYSIS

3.1 ANALYTICAL TEST METHODS

The soil and soil vapor samples were transported to a New York State Certified Commercial Laboratory for analysis. Selection of the analytical test methods for the seventeen (17) soil samples were based on the parameters set forth in NYSDEC Part 375 regulations for the presence of volatile and semi-volatile organic compounds with PCB's and TAL metals. The six (6) soil vapor samples were analyzed based on USEPA Test Method TO-15 for volatile organic compounds.

3.2 SOIL ANALYTICAL RESULTS

3.2.1 1674-1684 Broadway

Laboratory analysis performed on the three (3) shallow and three (3) deep soil samples from 1674-1684 Broadway Property exhibited slightly elevated concentrations of semi-volatile organic compounds, pesticides, and metals. None of the samples collected exhibited elevated concentrations of volatile organic compounds or PCBs. **Tables 3A and 3B** provide a comparison of those constituents with elevated concentrations and the NYSDEC Soil Cleanup Objectives set forth in Part 375 - Remedial Program Soil Cleanup Objectives (SCOs). As depicted in this table, none of the constituents exceeded the guidance values for volatile organic compounds, semi-volatile organic compounds, pesticides, or PCBs.

Laboratory analysis of the shallow soil sample collected from the basement of the 1674-1684 Broadway Property exhibited elevated concentrations of two (2) metals (lead and mercury) that exceed the NYSDEC Soil Cleanup Objectives by relatively small margins. Of note, it is possible that the metals found to exceed NYSDEC Soil Cleanup Objectives are naturally occurring in soils.

None of the additional samples collected from the 1674-1684 Broadway Property exhibited elevated concentrations of volatile organic compounds, semi-volatile organic compounds, pesticides, PCBs or metals that exceeded the NYSDEC Soil Cleanup Objectives.

Based on these results, it is recommended that the regulatory agency be contacted to determine if remediation is appropriate with respect to the basement shallow soils on the property that exhibited concentrations in excess of regulatory Soil Cleanup Objectives. It is noted that the area of the property has historically been used for commercial and light industrial purposes and low concentrations of semi-volatile organic compounds and metals in soils may be ubiquitous. The laboratory analysis sheets (NYS ASPA) as prepared by Long Island Analytical Laboratories are presented in **Appendix A** of this document.

TABLE 3A
SHALLOW SOIL SAMPLE RESULTS - 1674-1684 BROADWAY

Constituents	Site A SE 0'-2'	Site A Basement 10'-12'	Site A SW 0'-2'	6 NYCRR Part 375 Restricted Use Soil Cleanup Objectives - Restricted-Residential
Semi-Volatiles	ug/kg	ug/kg	ug/kg	ug/kg
Benzoic Acid	278	156	ND	NS
2-Methylnaphthalene	ND	64.3	ND	NS
Phenanthrene	676	110	ND	100,000
Anthracene	ND	ND	ND	100,000
Di-n-butyl phthalate	ND	71.1	ND	NS
Fluoranthene	972	224	ND	100,000
Pyrene	897	219	ND	100,000
Benzo(a)anthracene	481	147	ND	1,000
Chrysene	548	179	ND	3,900
Bis(2-Ethylhexyl)phthalate	ND	185	448	NS
Benzo(b)fluoranthene	694	212	ND	1,000
Benzo(k)fluoranthene	274	99.8	ND	3,900
Benzo(a)pyrene	473	171	ND	1,000
Indeno(1,2,3-cd)pyrene	454	191	290	500
Dibenzo(a,h)anthracene	ND	58.2	252	330
Benzo(g,h,i)perylene	398	174	327	100,000
Volatiles	ug/kg	ug/kg	ug/kg	ug/kg
No Volatiles Detected				
Pesticides	ug/kg	ug/kg	ug/kg	ug/kg
Trans-Chlordane	6.67	286	ND	NS
cis-Chlordane	10.8	265	ND	NS
4,4'-DDE	9.93	40.1	ND	8,900
4,4'-DDD	ND	30.2	ND	13,000
4,4'-DDT	58.1	65.5	ND	7,900
Chlordane	29.0	2,120	ND	9,200
PCBs/Aroclor	ug/kg	ug/kg	ug/kg	ug/kg
No PCBs Detected				
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	8,990	6,300	3,740	NS
Arsenic	3.38	3.05	ND	16.0
Barium	65.5	243	33.8	400
Cadmium	ND	1.85	ND	4.3
Calcium	6,340	11,000	2,420	NS
Chromium	20.5	18.2	9.91	110
Cobalt	6.10	4.37	5.13	NS
Copper	33.2	56.3	11.6	270
Iron	15,100	11,300	17,900	NS
Lead	62.0	920	5.24	400
Magnesium	4,260	2,910	2,110	NS
Manganese	235	199	429	2,000

Nickel	15.9	9.69	9.03	310
Potassium	1,600	935	669	NS
Sodium	143	382	105	NS
Thallium	2.05	1.98	ND	NS
Vanadium	24.3	13.7	18.3	NS
Zinc	165	383	24.5	10,000
Mercury	0.17	2.20	0.02	0.81

ND - Not Detected, NS - No Standard

Bold and Shaded exceeds 6 NYCRR Part 375 Soil Cleanup Objectives for Restricted-Residential use

TABLE 3B
DEEP SOIL SAMPLE RESULTS - 1674-1684 BROADWAY

Constituents	Site A SE 15'-20'	Site A Basement 15'-17'	Site A SW 15'-17'	6 NYCRR Part 375 Restricted Use Soil Cleanup Objectives - Restricted-Residential
Semi-Volatiles	ug/kg	ug/kg	ug/kg	ug/kg
Benzoic Acid	104	64.3	ND	NS
2-Methylnaphthalene	ND	ND	ND	NS
Phenanthrene	291	ND	ND	100,000
Anthracene	83.6	ND	ND	100,000
Di-n-butyl phthalate	ND	ND	ND	NS
Fluoranthene	387	ND	ND	100,000
Pyrene	321	ND	ND	100,000
Benzo(a)anthracene	193	ND	ND	1,000
Chrysene	194	ND	ND	3,900
Bis(2-Ethylhexyl)phthalate	80.8	52.6	405	NS
Benzo(b)fluoranthene	238	ND	ND	1,000
Benzo(k)fluoranthene	95.5	ND	ND	3,900
Benzo(a)pyrene	180	ND	ND	1,000
Indeno(1,2,3-cd)pyrene	158	54.0	77.5	500
Dibenzo(a,h)anthracene	50.2	47.5	50.1	330
Benzo(g,h,i)perylene	135	62.1	65.4	100,000
Volatiles	ug/kg	ug/kg	ug/kg	ug/kg
No Volatiles Detected				
Pesticides	ug/kg	ug/kg	ug/kg	ug/kg
Trans-Chlordane	ND	8.46	ND	NS
cis-Chlordane	ND	7.91	ND	NS
4,4'-DDE	3.32	ND	ND	8,900
4,4'-DDD	9.83	ND	ND	13,000
4,4'-DDT	7.07	ND	ND	7,900
Chlordane	ND	74.1	ND	9,200
PCBs/Aroclor	ug/kg	ug/kg	ug/kg	ug/kg
No PCBs Detected				
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	2,820	4,910	5,610	NS
Arsenic	ND	ND	ND	16.0

Barium	29.8	40.3	30.4	400
Cadmium	ND	ND	ND	4.3
Calcium	4,960	2,040	756	NS
Chromium	6.88	14.9	14.9	110
Cobalt	3.45	5.94	5.42	NS
Copper	8.21	12.5	8.63	270
Iron	9,600	14,200	13,800	NS
Lead	22.8	20.0	3.93	400
Magnesium	1,750	2,560	1,880	NS
Manganese	155	286	282	2,000
Nickel	6.54	11.8	9.45	310
Potassium	469	1,285	747	NS
Sodium	157	147	112	NS
Thallium	ND	2.13	1.98	NS
Vanadium	8.98	20.7	20.1	NS
Zinc	28.5	39.5	24.3	10,000
Mercury	0.20	0.17	ND	0.81

ND - Not Detected, NS - No Standard

Bold and Shaded exceeds 6 NYCRR Part 375 Soil Cleanup Objectives for Restricted-Residential use

3.2.2 760-770 Decatur Street/1696-1712 Broadway

Laboratory analysis performed on the five (5) shallow soil samples, five (5) deep soil samples and the composite soil pile sample from the 760-770 Decatur Street/1696-1712 Broadway Property exhibited slightly elevated concentrations of semi-volatile organic compounds, pesticides, and metals. None of the samples collected exhibited elevated concentrations of volatile organic compounds or PCBs. **Tables 4A** and **4B** provide a comparison of those constituents with elevated concentrations and the NYSDEC Soil Cleanup Objectives set forth in Part 375 - Remedial Program Soil Cleanup Objectives (SCOs). As depicted in this table, none of the constituents exceeded the guidance values for volatile organic compounds, pesticides, or PCBs.

Laboratory analysis of three (3) of the shallow soil samples collected from the 760-770 Decatur Street/1696-1712 Broadway Property (B-1, B-2 and B-4) exhibited elevated concentrations of five (5) semi volatile organic compounds (benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene) that exceed the NYSDEC Soil Cleanup Objectives. The shallow soil sample collected from B-1 also exhibited elevated concentrations of chrysene in that exceeds the NYSDEC Soil Cleanup Objective.

In addition, laboratory analysis of two (2) of the shallow soil samples collected from the 760-770 Decatur Street/1696-1712 Broadway Property (B-1 and B-2) exhibited elevated concentrations of one (1) metal, Barium, that exceed the NYSDEC Soil Cleanup Objectives by a very small margin. Of note, it is possible that the metal found to exceed NYSDEC Soil Cleanup Objectives is naturally occurring in soils.

None of the deep soil samples, the additional shallow soil samples, or the composite soil pile sample collected from the 760-770 Decatur Street/1696-1712 Broadway Property exhibited elevated concentrations of volatile organic compounds, semi-volatile organic compounds, pesticides, PCBs or metals that exceeded the NYSDEC Soil Cleanup Objectives.

Based on these results, it is recommended that the regulatory agency be contacted to determine if remediation is appropriate, with respect to shallow soils on the property that exhibited concentrations in excess of regulatory Soil Cleanup Objectives. It is noted that the area of the property has historically been used for commercial and light industrial purposes and low concentrations of semi-volatile organic compounds and metals in soils may be ubiquitous. The laboratory analysis sheets (NYS ASPA) as prepared by Long Island Analytical Laboratories are presented in **Appendix A** of this document.

**TABLE 4A
SHALLOW SOIL SAMPLE AND SOIL PILE RESULTS -
760-770 DECATUR STREET/1696-1712 BROADWAY**

Constituents	B-1 0'-2'	B-2 0'-2'	B-3 0'-2'	B-4 0'-2'	B-5 0'-2'	Site B Soil Pile	6 NYCRR Part 375 Restricted Use Soil Cleanup Objectives - Restricted-Residential
Semi-Volatiles	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
N-Nitrosodimethylamine	ND	ND	ND	ND	ND	153	NS
Aniline	ND	ND	ND	ND	ND	80.1	NS
2-Chlorophenol	ND	ND	ND	ND	ND	155	NS
Bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	89.0	NS
2-Methylphenol	ND	ND	ND	ND	ND	68.8	NS
Bis(2-Chloroisopropyl)ether	ND	ND	ND	ND	ND	65.6	NS
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND	66.4	NS
Nitrobenzene	ND	ND	ND	ND	ND	112	NS
2-Nitrophenol	ND	ND	ND	ND	ND	78.5	NS
Bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND	93.1	NS
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	80.1	NS
Naphthalene	ND	ND	ND	ND	ND	108	100,000
Hexachlorobutadiene	ND	ND	ND	ND	ND	84.2	NS
2-Methylnaphthalene	ND	ND	ND	ND	ND	159	NS
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	75.3	NS
2-Chloronaphthalene	ND	ND	ND	ND	ND	159	NS
Acenaphthylene	943	277	ND	262	ND	97.9	100,000
Acenaphthene	243	438	ND	ND	ND	98.7	100,000
Fluorene	453	463	ND	330	ND	ND	100,000
Phenanthrene	5,640	4,100	78.4	3,280	204	322	100,000
Anthracene	1,350	1,020	ND	797	43.6	74.5	100,000
Carbazole	318	376	ND	230	ND	ND	NS
Di-n-butyl phthalate	ND	6,890	ND	373	ND	53.4	NS
Fluoranthene	9,870	5,980	124	5,140	311	636	100,000

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Pyrene	10,000	5,650	117	4,100	255	571	100,000
Butyl benzyl phthalate	ND	1,500	ND	ND	ND	ND	NS
Benzo(a)anthracene	5,690	3,080	60.7	2,450	136	325	1,000
Chrysene	6,490	3,030	67.1	2,560	140	373	3,900
Bis(2-Ethylhexyl)phthalate	228	917	134	13,900	361	ND	NS
Benzo(b)fluoranthene	7,230	3,330	66.4	2,770	154	491	1,000
Benzo(k)fluoranthene	2,310	1,270	ND	1,060	70.6	160	3,900
Benzo(a)pyrene	5,500	2,680	49.4	2,020	117	329	1,000
Indeno(1,2,3-cd)pyrene	4,090	2,110	54.4	1,560	116	292	500
Dibenzo(a,h)anthracene	1,080	517	ND	355	47.0	80.9	330
Benzo(g,h,i)perylene	3,600	1,910	52.3	1,290	107	256	100,000
Volatiles	ug/kg						
No Volatiles Detected							
Pesticides	ug/kg						
Trans-Chlordane	ND	9.77	ND	ND	ND	ND	NS
cis-Chlordane	8.60	15.3	ND	6.85	ND	ND	NS
4,4'-DDE	17.2	45.6	3.77	26.5	ND	ND	8,900
Dieldrin	15.5	11.5	ND	ND	ND	ND	200
4,4'-DDD	11.6	34.3	ND	3.51	ND	ND	13,000
4,4'-DDT	182	261	11.6	65.9	ND	18.7	7,900
Endrin Aldehyde	ND	9.67	ND	ND	ND	ND	NS
Chlordane	38.9	51.9	ND	21.6	ND	ND	9,200
PCBs/Aroclor	ug/kg						
No PCBs Detected							
Metals	mg/kg						
Aluminum	9,680	6,840	8,430	3,460	2,150	8,220	NS
Arsenic	2.94	3.21	ND	ND	ND	2.42	16.0
Barium	503	424	48.9	60.6	39.1	109	400
Calcium	21,700	35,800	5,000	9,110	9,750	2,800	NS
Chromium	18.2	14.0	17.0	10.2	5.16	24.3	110
Cobalt	7.63	5.34	5.59	3.26	2.56	7.26	NS
Copper	33.3	17.2	18.6	11.9	7.01	23.2	270
Iron	21,100	15,000	14,100	9,870	6,840	23,400	NS
Lead	216	199	68.7	38.0	18.0	81.0	400
Magnesium	4,020	3,040	4,090	1,890	3,800	2,120	NS
Manganese	225	292	283	171	207	438	2,000
Nickel	17.4	8.94	10.5	6.95	5.48	13.1	310
Potassium	2,960	1,570	932	702	522	806	NS
Sodium	347	570	177	149	143	120	NS
Thallium	2.29	2.06	1.72	ND	ND	ND	NS
Vanadium	23.7	14.2	21.9	12.1	7.83	33.2	NS
Zinc	281	289	45.0	47.2	19.7	113	10,000
Mercury	0.10	0.14	0.55	0.05	ND	0.17	0.81

ND - Not Detected, NS - No Standard

Bold and Shaded exceeds 6 NYCRR Part 375 Soil Cleanup Objectives for Restricted-Residential use

TABLE 4B
DEEP SOIL SAMPLE RESULTS -
760-770 DECATUR STREET/1696-1712 BROADWAY

Constituents	B-1 15'-17'	B-2 15'-17'	B-3 15'-17'	B-4 15'-17'	B-5 15'-17'	6 NYCRR Part 375 Restricted Use Soil Cleanup Objectives - Restricted-Residential
Semi-Volatiles	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Phenanthrene	394	ND	ND	73.1	118	100,000
Anthracene	100	ND	ND	ND	ND	100,000
Fluoranthene	731	ND	ND	181	190	100,000
Pyrene	695	ND	ND	148	152	100,000
Butyl benzyl phthalate	76.2	ND	ND	ND	73.4	NS
Benzo(a)anthracene	398	ND	ND	96.3	97.7	1,000
Chrysene	417	ND	ND	99.1	105	3,900
Bis(2-Ethylhexyl)phthalate	973	133	78.3	283	799	NS
Benzo(b)fluoranthene	503	ND	ND	114	195	1,000
Benzo(k)fluoranthene	174	ND	ND	44.3	78.3	3,900
Benzo(a)pyrene	384	ND	ND	77.3	143	1,000
Indeno(1,2,3-cd)pyrene	321	ND	ND	64.7	178	500
Dibenzo(a,h)anthracene	84.5	ND	ND	ND	56.1	330
Benzo(g,h,i)perylene	288	ND	ND	59.7	158	100,000
Volatiles	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
No Volatiles Detected						
Pesticides	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
4,4'-DDT	7.03	ND	ND	ND	3.30	7,900
PCBs/Aroclor	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
No PCBs Detected						
Metals	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	2,140	2,600	2,990	2,140	1,770	NS
Barium	51.8	21.7	27.1	17.8	21.3	400
Calcium	8,530	8,170	1,170	2,950	6,560	NS
Chromium	6.95	5.09	7.95	5.07	4.42	110
Cobalt	2.42	2.77	4.30	2.58	2.11	NS
Copper	6.62	9.93	11.6	5.27	5.96	270
Iron	7,190	5,860	11,900	5,440	5,010	NS
Lead	22.8	3.09	3.03	5.44	6.54	400
Magnesium	3,160	3,850	1,510	1,380	2,920	NS
Manganese	131	141	251	133	131	2,000
Nickel	4.72	6.96	7.05	4.70	4.33	310
Potassium	447	496	490	351	349	NS
Sodium	142	183	96.9	97.3	74.4	NS
Vanadium	7.51	9.06	17.1	8.33	10.4	NS
Zinc	136	15.2	15.8	15.0	12.9	10,000

ND - Not Detected, NS - No Standard

Bold and Shaded exceeds 6 NYCRR Part 375 Soil Cleanup Objectives for Restricted-Residential use

3.3 SOIL VAPOR AND AMBIENT AIR ANALYTICAL RESULTS

The laboratory analysis performed on soil vapor samples exhibited elevated concentrations of several of the volatile organic compounds analyzed. **Tables 5A** and **5B** provide a list of those constituents with elevated concentrations and their values. The laboratory analysis sheets (NYS ASPA) as prepared by Long Island Analytical are presented in **Appendix A** of this document.

3.3.1 1674-1684 Broadway

New York State currently does not have any standards for concentrations of compounds in subsurface vapors. In the absence of this information, soil vapor sampling results are compared to general background outdoor air levels and the NYSDOH guidelines for volatile organic chemicals in air. Soil vapor results are also reviewed “as a whole” to identify trends and special variations in the data, as outlined in the manual.

Review of the soil vapor sampling conducted at the 1674-1684 Broadway property detected elevated levels of several volatile organic compounds in soil vapor at both of the sample locations. In order to quantify these results, the detected compound concentrations were compared to the Upper Fence concentration values provided within the NYSDOH 2006: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes which recorded levels of volatile organic compounds in air of homes heated with fuel oil. The levels within the NYSDOH 2006 study were utilized in accordance with the recommendations provided in the NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York which suggests the use of these values as initial benchmarks when evaluating air quality for residential uses. However, it should be recognized that these background levels are only for comparison purposes and are not intended to be established as regulatory standards.

Review of the analytical results (**Table 5A**) revealed that thirteen (13) of the compounds were detected above their respective NYSDOH 2006 database levels in the basement soil vapor sample and eleven (11) of the compounds were detected above their respective NYSDOH 2006 database levels in the soil vapor sample collected from the southeast paved parking area. Several of the volatile organic compounds detected in both of the soil vapor samples exceeded the NYSDOH guidance values by large margins. The compounds identified in the soil vapor samples collected from the basement consisted of: 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, chloroform, cyclohexane, ethylbenzene, methylene chloride, n-heptane, n-hexane, o-xylene, m,p xylenes, tetrachloroethylene and toluene. The compounds identified in the soil vapor samples collected from the southeastern paved parking area consisted of: 1,2,4-trimethylbenzene, acetone, benzene, cyclohexane, ethylbenzene, methyl ethyl ketone (2-butanone), n-Heptane, n-Hexane, o-xylene, m,p xylenes, and toluene. Since none of these compounds were detected in shallow or deep soil samples on the site, it is expected that they originate from an off-site source and existing in groundwater underlying sites in the area.

Based on these results, appropriate vapor intrusion mitigation methods should be developed (i.e., vapor barrier sealant and/or a sub slab depressurization system) in order to prevent harmful vapors from entering any future construction on the subject property. In addition, these compounds should be included in a monitoring program to assess if changes in these levels occurs over time.

TABLE 5A
SUBSURFACE SOIL GAS SAMPLING RESULTS –
1674-1684 BROADWAY

Constituents	Site A Basement SG	Site A SE SG	NYSDOH Air Guidelines	NYSDOH 2006 Outdoor Air
Volatiles	ug/m³	ug/m³	ug/m³	ug/m³
1,2,4-Trimethylbenzene	54.0	20.0	NV	1.9
1,3,5-Trimethylbenzene	17.0	ND	NV	0.7
4-Ethyltoluene	76.0	24.0	NV	NV
Acetone	9.30	200	NV	30
Benzene	25.0	23.0	NV	4.8
Chloroform	14.0	ND	NV	0.5
Cyclohexane	9.50	11.0	NV	0.9
Ethylbenzene	94.0	29.0	NV	1.0
Methyl Ethyl Ketone (2-Butanone)	ND	38.0	NV	5.3
Methylene Chloride	11.0	ND	60	1.6
n-Heptane	75.0	35.0	NV	4.5
n-Hexane	100	110	NV	2.2
o-Xylene	89.0	29.0	NV	1.2
m,p-Xylenes	330	98.0	NV	1.0
Tetrachloroethylene	52.0	ND	100	0.7
Toluene	530	110	NV	5.1

Notes: ug/m³ - micrograms per cubic meter; NV - No value provided

Bold/Red exceeds NYSDOH guidelines for volatile organic chemicals in air. **Bold/Black** exceeds NYSDOH 2006 Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes Upper Fence Outdoor Air Value.

Values used for comparison for each sample type/matrix were utilized as per the recommendations in the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

3.3.2 760-770 Decatur Street/1696-1712 Broadway

New York State currently does not have any standards for concentrations of compounds in subsurface vapors. In the absence of this information, soil vapor sampling results are compared to general background outdoor air levels and the NYSDOH guidelines for volatile organic chemicals in air. Soil vapor results are also reviewed “as a whole” to identify trends and special variations in the data, as outlined in the manual.

Review of the soil vapor sampling conducted at the 760-770 Decatur Street/1696-1712 Broadway property detected elevated levels of several volatile organic compounds in soil vapor at all of the sample locations. In order to quantify these results, the detected compound concentrations were compared to the Upper Fence concentration values provided within the NYSDOH 2006: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes which recorded levels of volatile organic compounds in air of homes heated with fuel oil. The levels within the NYSDOH 2006 study were utilized in accordance with the recommendations provided in the NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York which suggests the use of these values as initial benchmarks when evaluating air quality for residential uses. However, it should be recognized that these background levels are only for comparison purposes and are not intended to be established as regulatory standards.

Review of the analytical results (**Table 5B**) revealed that ten (10) of the compounds were detected above their respective NYSDOH 2006 database levels in the SG-1, SG-3 and SG-4 soil vapor samples and eleven (11) of the compounds were detected above their respective NYSDOH 2006 database levels in the SG-2 soil vapor sample. Several of the volatile organic compounds detected in both of the soil vapor samples exceeded the NYSDOH guidance values by large margins. The compounds identified in the soil vapor samples in the soil vapor samples collected from the 760-770 Decatur Street/1696-1712 Broadway property consisted of: 1,2,4-trimethylbenzene, acetone, benzene, cyclohexane, ethylbenzene, methylene chloride, n-heptane, n-hexane, o-xylene, m,p xylenes, toluene and trichlorofluoromethane. Since none of these compounds were detected in shallow or deep soil samples on the site, it is expected that they originate from an off-site source and existing in groundwater underlying sites in the area.

Based on these results, appropriate vapor intrusion mitigation methods should be developed (i.e., vapor barrier sealant or a sub slab depressurization system) in order to prevent harmful vapors from entering any future construction on the subject property. In addition, these compounds should be included in a monitoring program to assess if changes in these levels occurs over time.

TABLE 5B
SUBSURFACE SOIL GAS AND AMBIENT AIR SAMPLING RESULTS -
760-770 DECATUR STREET/1696-1712 BROADWAY

Constituents	Site B SG-1	Site B SG-2	Site B SG-3	Site B SG-4	NYSDOH Air Guidelines	NYSDOH 2006 Outdoor Air
Volatiles	ug/m ³	ug/m ³				
1,2,4-Trimethylbenzene	26.0	20.0	20.0	12.0	NV	1.9
4-Ethyltoluene	23.0	27.0	29.0	25.0	NV	NV
Acetone	11.0	13.0	11.0	37.0	NV	30
Benzene	7.10	8.20	8.30	25.0	NV	4.8
Carbon Disulfide	ND	ND	ND	8.90	NV	NV
Cyclohexane	ND	ND	ND	9.90	NV	0.9
Ethylbenzene	32.0	31.0	35.0	65.0	NV	1.0
Methylene Chloride	17.0	25.0	11.0	13.0	60	1.6
n-Heptane	18.0	21.0	21.0	68.0	NV	4.5
n-Hexane	29.0	36.0	32.0	110	NV	2.2
o-Xylene	33.0	30.0	33.0	49.0	NV	1.2
m/p-Xylene	120	110	130	200	NV	1.0
Propylene	ND	ND	ND	11.0	NV	NV
Toluene	150	130	160	460	NV	5.1
Trichloroflouromethane	ND	14.0	ND	ND	NV	5.1

Notes: ug/m³ - micrograms per cubic meter; NV - No value provided

Bold/Red exceeds NYSDOH guidelines for volatile organic chemicals in air. Used only for comparison with soil gas results.

Bold/Black exceeds NYSDOH 2006 Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes Upper Fence Outdoor Air Value. Used only for comparison with outdoor air results.

Values used for comparison for each sample type/matrix were utilized as per the recommendations in the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

4.0 QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES (QA/QC)

This sampling protocol was conducted in accordance with USEPA accepted sampling procedures for hazardous waste streams (Municipal Research Laboratory, 1980, Sampling and Sampling Procedures for Hazardous Material Waste Streams, USEPA, Cincinnati, Ohio EPA- 600\280-018) and ASTM Material Sampling Procedures. All samples were collected by or under the auspices of USEPA trained personnel having completed the course Sampling of Hazardous Materials, offered by the Office of Emergency and Remedial Response.

Separate QA/QC measures were implemented for each of the instruments used in the Sampling and Analysis Program. Sampling instruments included a stainless steel Power Probe with probe sections, a stainless steel mixing bowl, Summa® canisters photo ionization detector, dedicated polyethylene tubing and sample vessels.

Prior to arrival on the site and between sample locations, the probes sections were decontaminated by washing with a detergent (alconox/liquinox) and potable water solution with distilled water rinse. The organic vapor analyzer was calibrated prior to sampling using a span gas of known concentration. All sample vessels were "level A" certified decontaminated containers. Samples were placed into vessels consistent with the analytical parameters. After acquisition, samples were preserved in the field. All containerized samples were refrigerated to 4° C during transport.

A sample represents physical evidence; therefore, an essential part of liability reduction is the proper control of gathered evidence. To establish proper control, the following sample identification and chain-of-custody procedures were followed.

Sample Identification

Sample identification was executed by use of a sample tag, log book and manifest. Documentation provides the following:

1. Project Code
2. Sample Laboratory Number
3. Sample Preservation
4. Instrument Used for Source Soil Grabs
5. Composite Medium Used for Source Soil Grabs
6. Date Sample was Secured from Source Soil
7. Time Sample was Secured from Source Soil
8. Person Who Secured Sample from Source Soil

Chain-of-Custody Procedures

Due to the evidential nature of samples, possession was traceable from the time the samples were collected until they were received by the testing laboratory. A sample was considered under custody if:

It was in a person's possession, or
It was in a person's view, after being in possession, or
It was in a person's possession and they were to lock it up, or
It is in a designated secure area.

When transferring custody, the individuals relinquishing and receiving signed, dated and noted the time on the Chain-of-Custody Form.

Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the information on the sample tags matched that on the Chain-of-Custody records. Pertinent information as to shipment, pick-up, courier, etc. was entered in the "remarks" section. The custodian then entered the sample tag data into a bound logbook which was arranged by project code and station number.

The laboratory custodian used the sample tag number or assigned an unique laboratory number to each sample tag and assured that all samples were transferred to the proper analyst or stored in the appropriate source area.

The custodian distributed samples to the appropriate analysts. Laboratory personnel were responsible for the care and custody of samples from the time they were received until the sample was exhausted or returned to the custodian.

All identifying data sheets and laboratory records were retained as part of the permanent site record. Samples received by the laboratory were retained until after analysis and quality assurance checks were completed.

5.0 SUMMARY AND CONCLUSION

This investigation was completed to address issues raised in prior Phase I ESAs prepared by NP&V. A sampling and analysis program was designed by NP&V to determine if the prior uses of the subject properties had impacted the subsoils and underlying groundwater. The sampling and analysis plan consisted of soil/sediment, groundwater and soil vapor testing, and a GPR survey using analytical test methods consistent with expected parameters and agency soil cleanup objectives. The following presents an evaluation of the results of this investigation.

1. 1674-1684 Broadway:

Soil: Three (3) shallow soil samples and three (3) deep soil samples were collected at strategic locations throughout the 1674-1684 Broadway property. Laboratory analysis performed on the three (3) shallow soil samples and three (3) deep soil samples from the 1674-1684 Broadway Property exhibited elevated concentrations of semi-volatile organic compounds, pesticides, and metals. Laboratory analysis of the shallow soil sample collected from the basement of the 1674-1684 Broadway Property exhibited elevated concentrations of two (2) metals (lead and mercury) that exceed the NYSDEC Soil Cleanup Objectives by relatively small margins. Of note, it is possible that the metals found to exceed NYSDEC Soil Cleanup Objectives are naturally occurring in soils. None of the additional samples collected from the 1674-1684 Broadway Property exhibited elevated concentrations of volatile organic compounds, semi-volatile organic compounds, pesticides, PCBs or metals that exceeded the NYSDEC Soil Cleanup Objectives. Based on these results, it is recommended that the regulatory agency be contacted to determine if remediation is appropriate, with respect to the shallow soils on the property that exhibit concentrations of metals in excess of regulatory Soil Cleanup Objectives.

Groundwater: Groundwater samples were not collected from the 1674-1684 Broadway property since groundwater was not encountered within a depth of 30 feet below grade surface (bgs).

Soil Vapor: Review of the soil vapor sampling conducted at 1674-1684 Broadway detected elevated levels of several volatile organic compounds in soil vapor at both of the sample locations. Thirteen (13) of the compounds were detected above their respective NYSDOH 2006 database levels in the basement soil vapor sample and eleven (11) of the compounds were detected above their respective NYSDOH 2006 database levels in the soil vapor sample collected from the southeast paved parking area. Several of the volatile organic compounds detected in both of the soil vapor samples exceeded the NYSDOH guidance values by large margins. Since none of these compounds were detected in shallow or deep soil samples on the site, it is expected that they originate from an off-site source and existing in groundwater underlying sites in the area. Based on these results, appropriate vapor intrusion mitigation methods should be developed (i.e., vapor barrier sealant or a sub slab vapor extraction system) in order to prevent harmful vapors from entering any future construction on the subject property. In addition, these compounds should be included in a monitoring program to assess if changes in these levels occur over time.

2. 760-770 Decatur Street/1696-1712 Broadway:

Soil: Five (5) shallow soil samples, five (5) deep soil samples, and a composite soil pile sample were collected at strategic locations throughout the 760-770 Decatur Street/1696-1712 Broadway property. Laboratory analysis performed on the five (5) shallow soil samples, five (5) deep soil samples and composite soil pile sample from the 760-770 Decatur Street/1696-1712 Broadway Property exhibited elevated concentrations of semi-volatile organic compounds, pesticides, and metals. Laboratory analysis of three (3) of the shallow soil samples collected from the 760-770 Decatur Street/1696-1712 Broadway Property (B-1, B-2 and B-4) exhibited elevated

concentrations of five (5) semi volatile organic compounds (benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene) that exceed the NYSDEC Soil Cleanup Objectives. The shallow soil sample collected from B-1 also exhibited an elevated concentration of chrysene in that exceeds the NYSDEC Soil Cleanup Objective. In addition, laboratory analysis of two (2) of the shallow soil samples collected from the 760-770 Decatur Street/1696-1712 Broadway Property (B-1 and B-2) exhibited elevated concentrations of one (1) metal, Barium, that exceed the NYSDEC Soil Cleanup Objectives by a very small margin. Of note, it is possible that the metal found to exceed NYSDEC Soil Cleanup Objectives is naturally occurring in soils. None of the deep soil samples, the additional shallow soil samples, or the composite soil pile sample collected from the 760-770 Decatur Street/1696-1712 Broadway Property exhibited elevated concentrations of volatile organic compounds, semi-volatile organic compounds, pesticides, PCBs or metals that exceeded the NYSDEC Soil Cleanup Objectives. Based on these results, it is recommended that the regulatory agency be contacted to determine if remediation is appropriate, with respect to shallow soils on the property that exhibited concentrations in excess of regulatory Soil Cleanup Objectives.

Groundwater: Groundwater samples were not collected from the 760-770 Decatur Street/1696-1712 Broadway property since groundwater was not encountered within a depth of 30 feet below grade surface (bgs).

Soil Vapor: Review of the soil vapor sampling conducted at 760-770 Decatur Street/1696-1712 Broadway detected elevated levels of several volatile organic compounds in soil vapor at all of the sample locations. Ten (10) of the compounds were detected above their respective NYSDOH 2006 database levels in the SG-1, SG-3 and SG-4 soil vapor samples and eleven (11) of the compounds were detected above their respective NYSDOH 2006 database levels in the SG-2 soil vapor sample. Several of the volatile organic compounds detected in both of the soil vapor samples exceeded the NYSDOH guidance values by large margins. Since none of these compounds were detected in shallow or deep soil samples on the site, it is expected that they originate from an off-site source and existing in groundwater underlying sites in the area. Based on these results, appropriate vapor intrusion mitigation methods should be developed (i.e., vapor barrier sealant or a sub slab vapor extraction system) in order to prevent harmful vapors from entering any future construction on the subject property. In addition, these compounds should be included in a monitoring program to assess if changes in these levels occur over time.

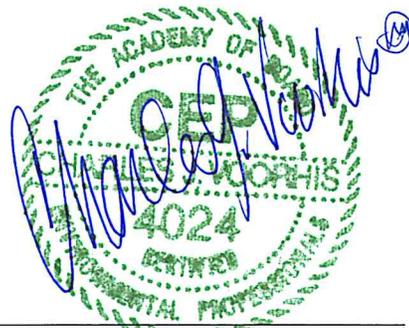
Evaluation of the results finds a decision must be made with respect to the potential need for remedial activities with respect to on-site soils for the subject properties based on the shallow soil samples, deep soil samples, composite soil pile sample and soil vapor samples. Soil samples analyzed detected the presence of concentrations of SVOC's, pesticides and metals. Elevated concentrations of two (2) metals in the shallow soil sample collected from the basement of the 1674-1684 Broadway Property were found to exceed NYSDEC Soil Cleanup Objectives, and elevated concentrations of six (6) SVOCs and one (1) metal were found to exceed NYSDEC Soil Cleanup Objectives in the shallow soil samples collected from 760-770 Decatur Street/1696-1712 Broadway. Soil vapor sampling results revealed that soil vapor intrusion mitigation and future monitoring is warranted at both of the properties based on NYSDOH guidance documents to prevent harmful vapors from entering any future construction on the subject property and to determine whether concentrations in the soil vapor changed over time. Given these circumstances, the following findings are offered:

1. The area surrounding the subject site has historically been used for commercial and light industrial use. Specifically, the 760-770 Decatur Street/1696-1712 Broadway was historically occupied by dry cleaning facilities.
2. The SVOCs detected in soil samples are common petroleum breakdown components which are frequently detected subsurface resources of industrialized areas.

The subject properties have been evaluated consistent with the recommendations of HPD, and in accordance with standard practice for the industry. This Limited Phase II ESA addresses only the specific areas of the site warranting further analysis and can only provide conclusions regarding the subsurface soil quality in those specific areas tested. The Limited Phase II ESA report is limited to the evaluation of on-site conditions at the time of completion of the field sampling program.

9/6/14

Date of Completion



Charles J. Voorhis, CEP, AICP
Project Manager

6.0 REFERENCES

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American Society for Testing and Materials (ASTM), June 2011, E1903-11 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process, West Conshohocken, Pennsylvania.

New York State Department of Environmental Conservation (NYSDEC), December 2006, 6NYCRR Part 375 Environmental Remediation Programs Subparts 375-1 to 375-4 & 375-6, Division of Environmental Remediation, Albany, New York.

New York State Department of Environmental Conservation (NYSDEC), October 21, 2010, DEC Policy CP-51 Soil Cleanup Guidance, Albany, New York.

New York State Department of Health (NYSDOH), October 2006, Guidance for Evaluating Soil Vapor Intrusion in the State of New York, Bureau of Environmental Exposure Investigation, Troy, New York.

FIGURES



FIGURE 1A
SAMPLE LOCATION MAP -
1674-1684 BROADWAY

The Henry Apartments,
Brooklyn



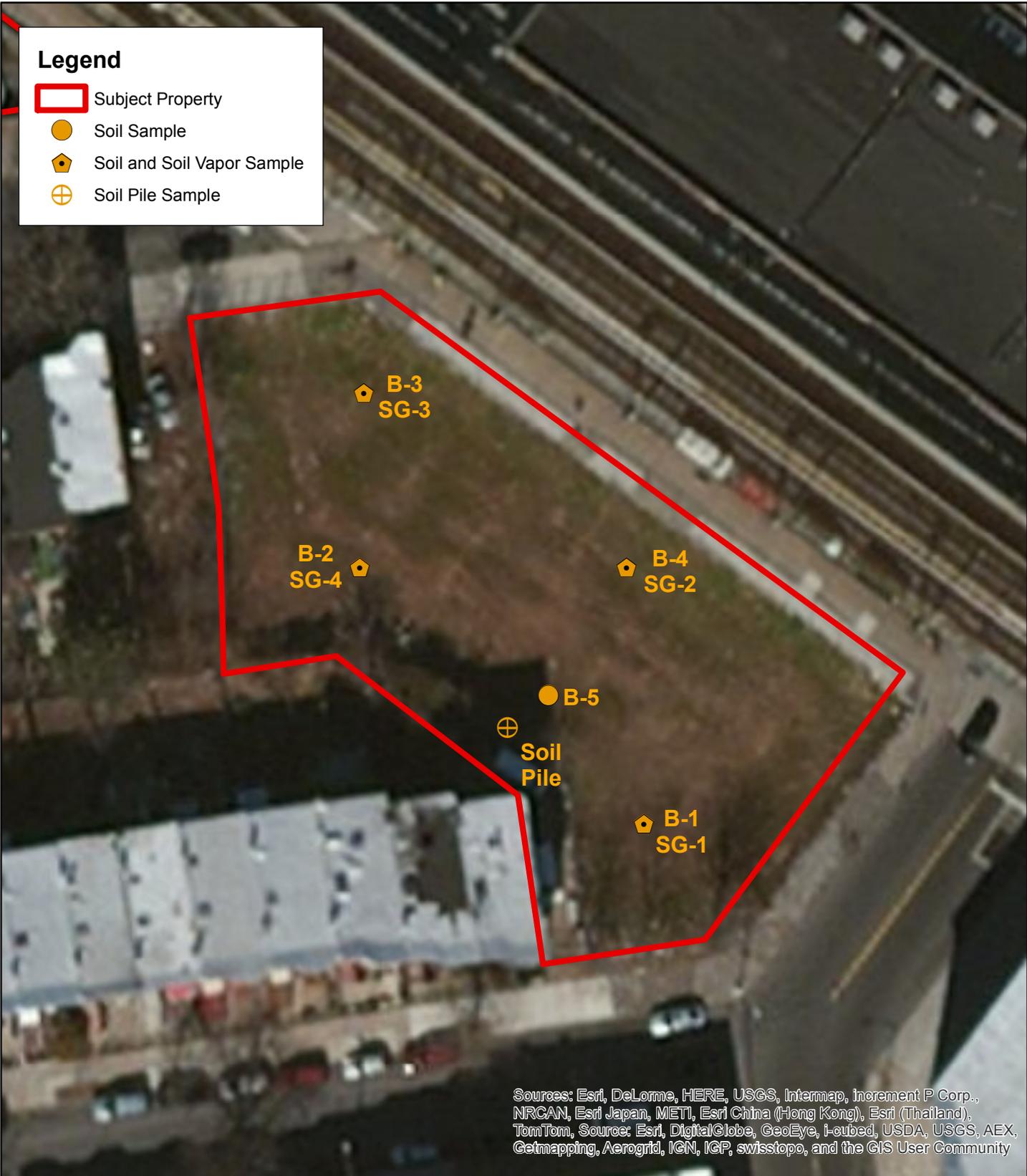
Source: ESRI Web Mapping Service
 Scale: 1 inch = 40 feet



Limited Phase II ESA

Legend

-  Subject Property
-  Soil Sample
-  Soil and Soil Vapor Sample
-  Soil Pile Sample



Sources: Esri, DeLorme, HERE, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

FIGURE 1B
SAMPLE LOCATION MAP -
DECATUR/BROADWAY PROPERTY

The Henry Apartments,
Brooklyn



Source: ESRI Web Mapping Service

Scale: 1 inch = 40 feet



Limited Phase II ESA