85 Jay Street

BROOKLYN HEIGHTS, BROOKLYN, NEW YORK

Phase II Environmental Investigation Report

AKRF Project Number: 10358

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1.0 INTRODUCTION

The purpose of this investigation was to determine the presence or absence of contamination in soil and/or groundwater that would be affected by the proposed development at 85 Jay Street, a 135,000 square foot lot located in the Brooklyn Heights neighborhood of Brooklyn, New York (the Site). The legal definition of the subject property is Tax Block 54, Lots 1, 19 and 22. The site location is shown on Figure 1. Proposed development of the site includes a multilevel residential building with 3½ stories of underground parking.

2.0 SITE BACKGROUND INFORMATION

2.1 Site Location and Description

The site is located in a mixed-use commercial, industrial and residential area of the Brooklyn Heights neighborhood of Brooklyn, New York and is currently used as a parking lot and a storage area for construction materials. Surrounding properties include a multi-level residential building, a New York City Park, a manufacturing building, a subway station, a public parking lot, a former manufacturing building and a Watchtower Recycling Center.

2.2 Proposed Development

Contemplated development of the site consists of construction of a multi-story building covering the entire property, with a 3½ story underground parking garage constructed under the building. The anticipated excavation depth for the parking garage is approximately 25 to 35 feet below ground surface. Groundwater is present at the site at approximately 25 to 35 feet below grade, therefore, dewatering may be required for construction of the underground garage.

2.3 Site Specific Environmental Concerns

The site has over a 100-year history of primarily industrial and manufacturing use. Facilities formerly located on the site include a lead works, an electrical substation, a paper goods factory, a brewery, a smelting company, and an electrical repair company. The blocks immediately surrounding the subject property also have a 100-year history of primarily manufacturing and industrial use, including a manufactured gas plant located on the east-adjacent block from circa 1904 until some time between 1938 and 1950. These past on-site and off-site industrial/manufacturing uses may have resulted in releases of contaminants to soil and groundwater beneath the site, including petroleum products, coal tar, solvents, heavy metals (including lead) and/or polychlorinated biphenyls.

2.4 Site Specific Investigation Objectives

The purpose of this investigation was to evaluate if soil and groundwater contamination is present at the site for use in assessing environmental and health and safety risks associated with planned development at the site, and to determine appropriate disposal of the excavated materials (and groundwater, if dewatering were to occur).

The investigation consisted of the advancement of seven soil borings and installation of temporary monitoring wells at locations shown on Figure 2. Soil samples were field-screened for contamination, and soil and groundwater samples were collected for laboratory analysis. The investigation activities were conducted in accordance with a Revised Phase II Subsurface Investigation Work Plan submitted to the New York City Department of Environmental Protection (NYCDEP) on June 2, 2003. The scope of

work was in accordance with NYCDEP comments outlined in a correspondence dated April 22, 2003.

3.0 SITE DESCRIPTION

3.1 Surface and Subsurface Conditions

The surface topography at the site slopes gently downward toward the northwest. Based on reports compiled by the U.S. Geological Survey, Brooklyn, New York quadrangle, the elevation of the property ranges from approximately 30 to 40 feet above the National Geodetic Vertical Datum of 1929 (an approximation of mean sea level). During the current investigation, groundwater beneath the study site was encountered at depths ranging from 23 to 35 feet below grade. Groundwater most likely flows in a north-northwesterly direction, toward the East River.

3.2 Previous Environmental Investigation

Phase I Environmental Site Assessment Report – AKRF, Inc., November 2002

A Phase I Environmental Site Assessment of the site was performed by AKRF, Inc. in November 2002. This assessment included a review of available historical Sanborn Maps, which indicated that the site has over a 100-year history of primarily industrial and manufacturing use.

Facilities formerly located on the site include a lead works, an electrical substation, a paper goods factory, a school, a brewery, a smelting company, an electrical repair company and a public school. The blocks immediately surrounding the subject property also have a 100-year history of primarily manufacturing and industrial use, including a manufactured gas plant located on the east-adjacent block from circa 1904 until some time between 1938 and 1950. The Bradley White Lead Company and the Lenox Smelting Company, both formerly located on the subject property, were included in the New York State CERCLIS database and the New York State Inactive Hazardous Waste Disposal Site Registry; however, both facilities were listed as NFRAP (No Further Remedial Action Planned) and were removed from the Registry.

Based on these findings, AKRF recommended a subsurface (Phase II) investigation of the site, including collecting soil and groundwater samples in areas of the site where historical industrial operations took place, such as where corroding beds were located for the lead company, the area of the former smelting company, and the area of the former electrical substation. To determine whether adjacent off-site potential sources of contamination have affected the study site, AKRF also recommended collection of samples from areas of the Site adjacent to Apex Thermoplastics and the former manufactured gas plant.

4.0 METHODOLOGY

4.1 Sampling Program Methodology

The sampling program consisted of the installation of seven soil borings and temporary groundwater monitoring wells, as outlined in the Environmental Investigation Work Plan submitted to the New York City Department of Environmental Protection (NYCDEP) on June 2, 2003. Field work was conducted under a site-specific Health and Safety Plan, included in the Work Plan. The NYCDEP was informed prior to on-site field activities. Figure 2 indicates soil boring and groundwater sampling locations.

4.2 Soil Sampling

Soil samples were collected from each of the seven soil borings. Boring locations were biased towards areas where historical industrial operations took place (i.e., near where corroding beds were located for the lead company and in the vicinity of the former electrical substation), and areas of the site adjacent to Apex Thermoplastics and the former manufactured gas plant on the east-adjacent block. Exact locations were determined in the field based on the presence of utilities and other factors.

Soil borings were advanced using a motorized drill rig. Borings B-1, B-2, and B-5 through B-7 were advanced to the depth of groundwater or to 35 feet below ground surface, whichever was encountered first. Shallow refusal was encountered before reaching groundwater at the two borings located along Bridge Street (B-3 and B-4); these borings could be advanced only to depths of 15 and 18 feet below grade, respectively. Soil samples at all boring locations were obtained using a steel, 24-inch split-spoon sampler, driven through the subsurface levels ahead of a hollow-stem (6-1/4") auger. Soil was field-screened using a photoionization detector (PID) at two-foot intervals along the vertical depth of each boring. A field technician described the soil using the modified Burmeister Classification System, and recorded PID readings and visual and olfactory observations in a field notebook.

It was planned to collect two soil samples from each boring location, based on field observations. If no field contamination (elevated PID readings, stains and/or odors) was observed in any two-foot interval, a sample from the two foot interval immediately beneath the surface and a sample from the groundwater interface were collected. Due to shallow refusal, only one sample was collected from each of the borings along Bridge Street (B-3 and B-4). The soil samples were containerized in accordance with EPA analytical protocols. Each sample was labeled, sealed, and placed in a chilled cooler for shipment to the laboratory. Each soil sample was analyzed at American Analytical Laboratories, Inc. for target compound list volatile organic compounds (VOCs) by EPA Method 8260, semivolatile organic compounds (SVOCs) by EPA Method 8270, pesticides/PCBs by EPA Methods 8081/8082 and priority pollutant metals (total).

4.3 Groundwater Sampling

Groundwater samples were collected from borings B-1, B-2, B-5, B-6 and B-7 through temporary well points via disposable bailers. The groundwater table was not encountered in borings B-3 or B-4 due to shallow refusal, therefore, groundwater samples could not be obtained at these borings. Prior to sampling, the depth to water in the well point was measured using an electronic water level indicator. Three to five well volumes then were purged; wherever possible, samples were not collected until the water was visibly free of suspended solids.

Each sample was labeled, sealed, and placed in a chilled cooler for shipment to American Analytical Laboratories. Groundwater samples B-2, B-5, B-6 and B-7 were analyzed for VOCs and methyl tertiary butyl ether (MTBE) by EPA Method 8260, SVOCs by EPA Method 8270, priority pollutant metals (filtered and unfiltered), pesticides and PCBs (EPA Methods 8081 and 8082, respectively). Samples B-2, B-5 and B-7 were analyzed for additional New York City Sewer Discharge Criteria parameters including hexavalent chromium, non-polar materials, ignitability/flashpoint, and pH analysis. Due to insufficient sample volume, the sample from B-1 was analyzed for VOCs and MTBE only. Laboratory results were compared to NYCDEP limitations for effluent to sanitary or combined sewers.

4.4 Quality Assurance/Quality Control Measures

Samples were analyzed at American Analytical of Farmingdale, New York, a New York State ELAP-certified laboratory. In addition to the laboratory analysis of the actual samples, one aqueous trip blank was analyzed for VOCs to check for contamination during transport and sampling procedures. For the soil sampling task, one equipment rinsate blank (field blank) was collected and analyzed for all parameters to check for contamination arising from sample collection, and one duplicate soil sample was collected and analyzed for all parameters. For the groundwater sampling task, one equipment rinsate blank (field blank) was collected and analyzed for all parameters, to check for contamination arising from sample collection.

A project field log book was kept to document investigation activities and adherence to the work plan and QA/QC procedures. Data on soil sample characteristics (e.g., Burmister soil classification, PID measurements) were recorded on boring logs.

To avoid contamination and cross-contamination of samples, augers and split-spoon samplers were hot water pressure washed (steam cleaned) between boring/well locations. Split spoon samplers were decontaminated between each sample using procedures adapted from NYSDEC Sampling Guidelines and Protocols, September 1992, as described in the Workplan.

5.0 FINDINGS

5.1 Geology and Hydrogeology

Fill material consisting of sand, silt and gravel was present in soil borings from ground surface to the bottom of the borings. White-grey and brown-grey soft clay was encountered within the sand matrix at depth of 2 to 4 feet and 13 to 16 feet in B-2, and 12 to 20 feet in B-5. Brick and concrete fragments were present in borings B-1, B-2, B-3, and B-4, to a maximum depth of 14 feet (in B-1).

Groundwater was encountered at depths ranging from 23 feet below grade in B-1, in the northwestern portion of the site, to 35 feet in B-5, in the central portion of the site. The difference in depths to groundwater between the central and western portions of the site appear to be primarily due to differences in surface topography, which slopes down toward the northwest. Groundwater was not encountered in borings B-3 and B-4 in the eastern portion of the site, which were advanced only to 15 and 18 feet below grade, respectively, due to auger refusal. Boring elevations were not surveyed as a part of this Phase II investigation, therefore, no information regarding site-specific groundwater flow direction and gradient was obtained. However, it is presumed that groundwater in the vicinity of the site flows in a northwesterly direction, toward the East River.

5.2 Soil Contamination

5.2.1 Field Observations

Black staining was observed at 13 feet below grade in soil boring B-1. No other staining, odors or other visual or olfactory evidence of contamination was noted by AKRF field personnel. Elevated PID readings (above 5 parts per million, [ppm]) were noted at 6 to 8 feet below grade and at 10 to 12 feet below grade at boring B-5. These PID readings did not correspond to any visual or olfactory evidence of contamination. No other elevated PID readings were noted during soil boring activities.

5.2.2 Volatile Organic Compounds

Laboratory analytical results for VOCs in soil are provided in Appendix B and summarized in Table 1. Petroleum-related compounds (most likely gasoline), including naphthalene, toluene, xylenes, 1,2,4-trimethylebenzene, and/or 1,3,5-trimethylbenzene, were detected in shallow and deep samples from borings B-2, B-5 and B-7. The detected concentrations ranged from 2 to 96 micrograms per kilogram (µg/kg), and were below Recommended Soil Cleanup Objectives (RSCOs) listed in NYSDEC Technical and Administrative Guidance Memorandum (TAGM) No. 4046. Tetrachloroethylene was detected in shallow soil from borings B-3 and B-7 at concentrations of 3 µg/kg and 27 µg/kg, respectively, both below the applicable RSCO of 1,400 µg/kg.

5.2.3 Semivolatile Organic Compounds

Laboratory analytical results for SVOCs in soil are provided in Appendix B and summarized in Table 2. SVOCs detected in soil primarily included polycyclic aromatic hydrocarbons (PAHs). PAHs are a class of compounds present in petroleum products, asphalt, and as byproducts of combustion, and are, therefore, often found in urban fill materials. PAH concentrations exceeded the NYSDEC RSCOs in shallow soil (less than 4 feet below grade) in all of the borings advanced at the site, and in deep soil (35 to 36 feet) in soil boring B-5; however, total SVOC levels exceeded 500 milligrams per kilogram (mg/kg) in only one boring (822.7 mg/kg at B-7 [0-2']).

5.2.4 Metals

Laboratory analytical results for metals in soil are provided in Appendix B and summarized in Table 3. Elevated levels (relative to Eastern USA background) of cadmium, lead and zinc were detected in some of the samples analyzed.

Cadmium was detected at a concentration of 1.14 mg/kg in soil sample B-1 (22'-24'), slightly above the Eastern USA background of 0.2-1 mg/kg.

As indicated in NYSDEC TAGM 4046, common background levels of lead in urban areas range from 200 to 500 mg/kg. The greatest concentrations of lead were detected in both the shallow and deep soil samples from boring B-1 at 2,720 mg/kg and 2,070 mg/kg, respectively. Lead was detected in other locations below this expected background, ranging from 0.267 mg/kg (B-6 [24'-26']) to 115 mg/kg (B-2 [0-4']).

Zinc was detected at concentrations exceeding the Eastern United States background range of 9-50 mg/kg in four of the thirteen samples; the greatest

concentration was detected in sample B-1 (22'-24') at 932 mg/kg. Other metals were detected in the soil samples, but were within the TAGM listed background ranges.

5.2.5 PCBs

Laboratory analytical results for PCBs in soil are provided in Appendix B and summarized in Table 4. Total PCBs were detected in five of the thirteen samples analyzed at concentrations ranging from 120 to 2,500 µg/kg. The total PCB concentration of 2,500 µg/kg detected in soil sample B-6 (0-2') exceeded the NYSDEC RSCO for surface soil of 1,000 µg/kg. All remaining detected concentrations were below 1,000 µg/kg.

5.2.6 Pesticides

Laboratory analytical results for pesticides in soil are provided in Appendix B and summarized in Table 5. Pesticides were detected in 12 of the 13 soil samples analyzed at concentrations ranging from 3 to 220 µg/kg. None of the detected concentrations exceeded RSCOs.

5.3 Groundwater Contamination

5.3.1 Volatile Organic Compounds

Laboratory analytical results for VOCs in groundwater are provided in Appendix B and summarized in Table 6. Although groundwater is not a source of potable water in Brooklyn, as a means of comparison, the results were compared to NYSDEC Class GA Groundwater Standard (Division of Water Technical and Operational Guidance Series [1.1.1]). VOCs were detected in three of the five samples analyzed (B-2, B-5 and B-7) at concentrations above the NYSDEC class GA groundwater standard of 5 µg/L. Sample B-2 contained 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and m,p-xylene at concentrations of 8.6, 5.4 and 7.5 µg/L, respectively. Sample B-5 also contained these three compounds, at concentrations ranging from 6.2 to 9.8 µg/L. Sample B-7 contained tetrachloroethene at a concentration of 21 µg/L. This concentration is also slightly above the NYCDEP Sewer Discharge Limit of 20 µg/L. No other concentrations exceeded the Sewer Discharge Limits.

5.3.2 Semivolatile Organic Compounds

Laboratory analytical results for SVOCs in groundwater are provided in Appendix B and summarized in Table 7. SVOCs, including 2-methylnaphthalene, benzoic acid, and/or phenanthrene, were detected in groundwater samples from B-2, B-5 and B-7. None of the detected concentrations exceeded applicable class GA groundwater standards or guidance values. There are no NYCDEP Sewer Discharge Limits for these SVOCs in groundwater.

5.3.3 Metals

Laboratory analytical results for total metals (unfiltered samples) and dissolved metals (filtered samples) in groundwater are provided in Appendix B and summarized in Tables 8 and 9, respectively. Arsenic, chromium, copper, lead, nickel, thallium and zinc were detected in the four unfiltered groundwater samples. With the exception of thallium, these metals were detected at

concentrations exceeding GA groundwater standards; however, only lead was detected above the sewer discharge criteria (B-6 and B-7). In the filtered samples, only lead (B-7) and selenium (B-2) were detected above GA groundwater standards and none of the results exceeded the sewer discharge criteria.

5.3.4 PCBs and Pesticides

Laboratory analytical results for PCBs and pesticides in groundwater are included in Appendix B. PCBs and pesticides were not detected above laboratory reporting limits in any of the groundwater samples analyzed.

5.3.5 NYCDEP Sewer Discharge Parameters

Laboratory analytical results for additional NYCDEP Sewer Discharge Parameters (non-polar compounds, ignitibility, and pH) are included in Appendix B and summarized in Table 10. Results indicated that concentrations of non-polar compounds were below the NYCDEP Sewer Discharge Limit of 50 mg/L and that the groundwater is not ignitable (the flashpoints of all the samples were greater than 140^{o}F). The pH of the groundwater sample from B-5 of 6.49 was slightly below the NYCDEP Sewer Discharge Criteria range of 6.5 to 8.5.

6.0 CONCLUSIONS AND RECOMMENDATIONS

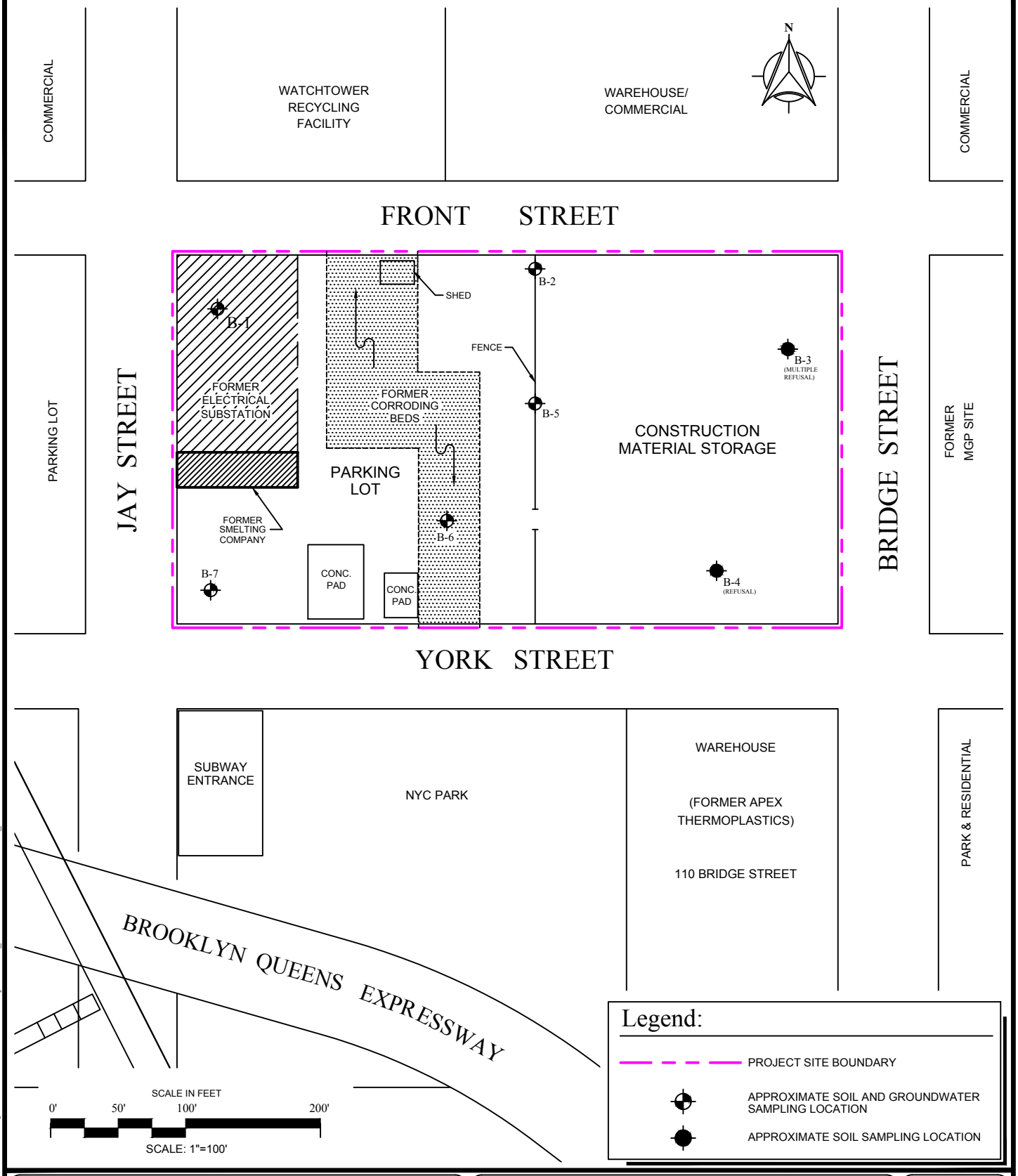
Polycyclic aromatic hydrocarbons (PAHs) were detected at concentrations exceeding NYSDEC recommended soil cleanup objectives (RSCOs) in shallow soil from each of the soil borings advanced at the site. The areas of elevated PAHs did not correspond to elevated levels of VOCs or other evidence of contamination (e.g., elevated PID readings, staining, odors), and were not necessarily close to a potential historic source of petroleum. Therefore, the detected contamination does not appear to be related to a specific release, but is likely related to fill materials at the site.

Elevated lead concentrations detected in both the shallow and deep soil samples from boring B-1 of 2,720 and 2,070 respectively, exceeded typical urban background levels of 200-500 mg/kg and could be a result of former smelting operations at the site. The zinc concentration in the deep soil sample from B-1 (932 mg/kg) was almost 50 times the 20 mg/kg RSCO for zinc, and also could be a result of historic smelting operations. The total PCB concentration of 2,500 µg/kg detected in the shallow soil sample (0-2') from boring B-6 exceeded the TAGM for surface soil of 1,000 µg/kg. The elevated PCBs in this area could be a result of former electrical substation or electrical repair facility operations.

Individual volatile organic compound concentrations in groundwater from borings B-2, B-5 and B-7 slightly exceeded the NYSDEC class GA groundwater standards of 5 µg/L for some compounds. However, groundwater is not used for drinking water purposes on-site or elsewhere in Brooklyn. In addition, the detected concentrations (with a maximum of 11 µg/L of m,p-xylene) are not likely indicative of a significant contaminant source (e.g., non-aqueous phase liquid) and are not expected to result in vapor migration to on-site or off-site structures. Therefore, the VOCs detected in groundwater do not currently, and would not be expected in the future, to represent an exposure threat to potential human or environmental receptors.

Proposed development of the site involves excavation and removal of all subsurface materials to an average depth of 30 feet for construction of a 3½-story underground parking garage. Therefore, all soil to at least this depth will be removed from the site. AKRF recommends conducting the excavation activities under a Soil Management Plan (with a Construction Health and Safety Plan) to ensure proper handling and disposal of the excavated materials, and to avoid adverse impacts to construction workers and the surrounding community. The Plans should include measures to ensure dust control during excavation activities, and should provide procedures for segregating contaminated soil and performing waste characterization sampling. Soil slated for off-site removal should be properly characterized and disposed of in accordance with all applicable regulations. The Plans should be submitted to the NYCDEP for approval prior to commencing any excavation activities.

The detected contaminant concentrations in groundwater are not expected to pose an exposure threat to human or environmental receptors, therefore, no further action is recommended with respect to remediation of on-site groundwater. However, due to an observed depth to groundwater ranging from 23 to 35 feet below grade and an anticipated excavation depth of at least 30 feet, dewatering may be required during construction activities. If dewatering fluids are discharged to the NYC sewer, a NYCDEP Sewer Discharge Approval or Permit should be obtained and appropriate discharge sampling should be conducted to ensure adherence to Sewer Discharge Criteria. Based on groundwater sampling results, some parameters (e.g., tetrachloroethylene) of the dewatering fluids could exceed applicable criteria and may require treatment prior to discharge to the sewer.



85 JAY STREET
Brooklyn, New York

SOIL AND GROUNWATER SAMPLING LOCATIONS

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DATE **03.18.04**
PROJECT No. **10358**
FIGURE No. **1**

TABLE 1
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Soil Analytical Summary
Volatile Organic Compounds

PARAMETER	TAGM 4046 Recommended Soil Cleanup Objectives[1] µg/kg	B-1 (22'-24') Soil µg/kg Dilution 1		B-1 (0-2') Soil µg/kg Dilution 1		B-1 (0-2')[DUP] Soil µg/L Dilution 1		B-2 (0-4') Soil µg/kg Dilution 1		B-2 (32-34') Soil µg/kg Dilution 1		B-3 (0-4') Soil µg/kg Dilution 1		B-4 (0-2') Soil µg/kg Dilution 1	
		R	L	R	L	R	L	R	L	R	L	R	L	R	L
1,2,4-Trimethylbenzene	10,000		<5.0		<5.0		<5.0	5J		4J			<5.0		<5.0
1,3,5-Trimethylbenzene	3,300		<5.0		<5.0		<5.0	3J			<5.0		<5.0		<5.0
m+p Xylene	1,200		<10.0		<10.0		<10.0	4J		3J			<10.0		<10.0
Naphthalene	13,000		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0
Tetrachloroethene	1,400		<5.0		<5.0		<5.0		<5.0		<5.0	3J			<5.0
Toluene	1,500		<5.0		<5.0		<5.0	3J			<5.0		<5.0		<5.0

PARAMETER	TAGM 4046 Recommended Soil Cleanup Objectives[1] µg/kg	B-5 (0-4') Soil µg/kg Dilution 1		B-5 (34-36') Soil µg/kg Dilution 1		B-6 (24'-26') Soil µg/kg Dilution 1		B-6 (0-2') Soil µg/kg Dilution 1		B-7 (24'-26') Soil µg/kg Dilution 1		B-7 (0-2) Soil µg/kg Dilution 1	
		R	L	R	L	R	L	R	L	R	L	R	L
1,2,4-Trimethylbenzene	10,000	3J		3J			<5.0		<5.0		<5.0		<5.0
1,3,5-Trimethylbenzene	3,300		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0
m+p Xylene	1,200		<10.0	2J			<10.0		<10.0		<10.0		<10.0
Naphthalene	13,000		<5.0		<5.0		<5.0		<5.0		<5.0	96	
Tetrachloroethene	1,400		<5.0		<5.0		<5.0		<5.0		<5.0	27	
Toluene	1,500		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0

TABLE 2
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Soil Analytical Summary
Semivolatile Organic Compounds

PARAMETER	TAGM 4046 Recommended Soil Cleanup Objectives[1] ug/kg	B-1 (0-2') Soil µg/kg Dilution 2		B-1 (22'-24') Soil µg/kg Dilution 1		B-1 (0-2')[DUP] Soil µg/kg Dilution 1		B-3 (0-4') Soil µg/L Dilution 3		B-4 (0-2') Soil µg/kg Dilution 1		B-2 (0-4') Soil µg/kg Dilution 3		B-2 (32'-34') Soil µg/kg Dilution 1		B-5 (0-4') Soil µg/kg Dilution 2	
		R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L
Acenaphthene	50,000	**110**			<40	**120**		**220**			<40	**300**			<40		<80
Acenaphthylene	41,000	**85**			<40	**82**			<120		<40		<120		<40		<80
Anthracene	50,000	**470**			<40	**510**		**550**			<40	**490**			<40	**150**	
Benzo(a)anthracene	224 or MDL	**1700**			<40	**2000**		**1100**		**110**		**1500**			<40	**660**	
Benzo(a)pyrene	61 or MDL	**1600**			<40	**1800**		**1100**		**97**		**1500**			<40	**700**	
Benzo(b)fluoranthene	1,100	**1900**			<40	**2400**		**1400**		**120**		**1900**			<40	**940**	
Benzo(g,h,i)perylene	50,000	**1100**			<40	**1300**		**700**		**61**		**1000**			<40	**610**	
Benzo(k)fluoranthene	1,100	**680**			<40	**820**		**420**		**40**		**490**			<40	**270**	
Benzoic Acid	NS		<80	**130**			<80		<120		<40		<120		<40		<80
Bis(2-ethylhexyl)Phthalate	50,000		<80	**140**			<80	**3400**			<40		<120		<40	**1100**	
Butyl benzyl Phthalate	50,000		<80		<40		<80	**15000**			<40	**220**			<40	**690**	
Carbazole	NS	**140**			<40	**180**			<120		<40	**240**			<40	**87**	
Chrysene	400	**1800**			<40	**2100**		**1100**		**90**		**1600**			<40	**750**	
Dibenzo(a,h)anthracene	14 or MDL	**320**			<40	**340**			<120		<40	**230**			<40	**120**	
Dibenzofuran	6,200	**110**			<40	**110**		**260**			<40	**100**			<40		<80
Fluoranthene	50,000	**3400**			<40	**4300**		**2300**		**180**		**3300**			<40	**1700**	
Fluorene	50,000	**96**			<40	**100**		**280**			<40	**180**			<40		<80
Indeno(1,2,3-c,d)pyrene	3,200	**1100**			<40	**1300**		**740**			<40	**1000**			<40	**590**	
Naphthalene	13,000		<80		<40		<80		<120		<40		<120		<40		<80
Phenanthrene	50,000	**2000**			<40	**2600**		**2500**		**130**		**2000**			<40	**700**	
Pyrene	50,000	**3000**			<40	**3700**		**2400**		**220**		**2700**			<40	**1300**	
Total SVOCs	500,000	**19611**			ND	**23762**		**33470**		**1048**		**18750**	ND	ND	ND	**10367**	ND

TABLE 2
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Soil Analytical Summary
Semivolatile Organic Compounds

PARAMETER	TAGM 4046 Recommended Soil Cleanup Objectives[1] ug/kg	B-5 (34'-36') Soil µg/kg Dilution 3		B-6 (0-2') Soil µg/kg Dilution 1		B-6 (24'-26') Soil µg/kg Dilution 1		B-7 (0-2') Soil µg/kg Dilution 5-100		B-7 (24'-26') Soil µg/kg Dilution 1	
		R	L	R	L	R	L	R	L	R	L
Acenaphthene	50,000		<120		<40		<40	**17000**			<40
Acenaphthylene	41,000		<120		<40		<40	**2800**			<40
Anthracene	50,000	**290**			<40		<40	**38000**			<40
Benzo(a)anthracene	224 or MDL	**1200**		**220**			<40	**63000**			<40
Benzo(a)pyrene	61 or MDL	**1300**		**230**			<40	**51000**			<40
Benzo(b)fluoranthene	1,100	**1500**		**290**			<40	**59000**			<40
Benzo(g,h,i)perylene	50,000	**1000**		**170**			<40	**26000**			<40
Benzo(k)fluoranthene	1,100	**650**		**120**			<40	**22000**			<40
Benzoic Acid	NS		<120		<40		<40		<200		<40
Bis(2-ethylhexyl)Phthalate	50,000	**600**			<40		<40		<200		<40
Butyl benzyl Phthalate	50,000	**390**			<40		<40		<200		<40
Carbazole	NS	**150**			<40		<40	**12000**			<40
Chrysene	400	**1300**		**240**			<40	**64000**			<40
Dibenzo(a,h)anthracene	14 or MDL	**210**	<120		<40		<40	**5900**			<40
Dibenzofuran	6,200		<120		<40		<40	**13000**			<40
Fluoranthene	50,000	**2900**		**420**			<40	**140000**			<40
Fluorene	50,000		<120		<40		<40	**19000**			<40
Indeno(1,2,3-c,d)pyrene	3,200	**1000**		**190**			<40	**29000**			<40
Naphthalene	13,000		<120		<40		<40	**11000**			<40
Phenanthrene	50,000	**1300**		**240**			<40	**140000**			<40
Pyrene	50,000	**2300**		**450**			<40	**110000**			<40
Total SVOCs	500,000	**16090**	ND	**2570**	ND	ND	ND	**822700**	ND	ND	

TABLE 3
85 JAY STREET

Soil Analytical Summary
Priority Pollutant Metals

PARAMETER	Eastern USA Background Levels[1] mg/kg	TAGM 4046 Recommended Soil Cleanup Objectives mg/kg	B-1 (22'-24') Soil mg/kg Dilution 1		B-1 (0-2') Soil mg/kg Dilution 1		B-1 (0-2')[DUP] Soil mg/kg Dilution 1		B-2 (0-4') Soil mg/kg Dilution 1		B-2 (32'-34') Soil mg/kg Dilution 1		B-3 (0-4') Soil mg/kg Dilution 1		B-4 (0-2') Soil mg/kg Dilution 1	
			R	L	R	L	R	L	R	L	R	L	R	L	R	L
Antimony, Sb	NA	SB		<0.455	1.51		0.709			<0.468		<0.477		<0.473		<0.449
Arsenic, As	3 - 12*	7.5 or SB	8.71		3.71		3.46		2.54		0.508		2.8		2.85	
Beryllium, Be	0 - 1.75	0.16 or SB		<0.364		<0.400		<0.398		<0.375		<0.382		<0.379		<0.392
Cadmium, Cd	0 1 - 1	1 or SB	1.14		0.19 J		0.18 J			<0.187		<0.192	0.11 J			<0.196
Chromium, Cr	1.5 - 40*	10 or SB	8.22		9.7		9.82		7		4.19		7.29		8.05	
Copper, Cu	1 - 50	25 or SB	29.1		15.3		15.3		11.1		5.8		10.7		8.79	
Lead, Pb	**	SB	2070		2720		2710		115		7.3		76.6		50.1	
Mercury, Hg	0.001 - 0.2	0.1		<0.050	0.124		0.122		0.066		0		0.196			<0.050
Nickel, Ni	0.5 - 25	13 or SB	10		10.6		10.7		8.33		5.21		6.44		6.42	
Selenium, Se	0.1 - 3.9	2 or SB	0.5		0.34 J		0	<0.498		<0.473		<0.481		<0.473		<0.490
Silver, Ag	NA	SB		<0.364		<0.400	0	<0.389	1.2			<0.382		<0.379		<0.392
Thallium, Tl	NA	SB		<0.273	1.73		0.784		0.615			<0.288	0.584		0.455	
Zinc, Zn	9 - 50	20 or SB	932		44.6		45		71.8		10.9		106		46.9	

PARAMETER	Eastern USA Background Levels[1] mg/kg	TAGM 4046 Recommended Soil Cleanup Objectives mg/kg	B-5 (0-4') Soil mg/kg Dilution 1		B-5 (34'-36') Soil mg/kg Dilution 1		B-6 (24'-26') Soil mg/kg Dilution 1		B-6 (0-2') Soil mg/kg Dilution 1		B-7 (24'-26') Soil mg/kg Dilution 1		B-7 (0-2') Soil mg/kg Dilution 1	
			R	L	R	L	R	L	R	L	R	L	R	L
Antimony, Sb	NA	SB		<0.496		<0.437		<0.434		<0.460	0	<0.473		<0.433
Arsenic, As	3 - 12*	7.5 or SB	0.955		1.4		0.3 J		0.985		5.28		0.641	
Beryllium, Be	0 - 1.75	0.16 or SB		<0.397		<0.350		<0.347	0	<0.368		<0.379		<0.346
Cadmium, Cd	0 1 - 1	1 or SB		<0.198		<0.178		<0.174	0	<0.184		<0.189		<0.173
Chromium, Cr	1.5 - 40*	10 or SB	6.3		7.36			<0.347	3.04		7.89		2.8	
Copper, Cu	1 - 50	25 or SB	6.45		10.2		0.18 J		5.73		12.7		4.18	
Lead, Pb	**	SB	51.3		50.1		0.267		2		364		2.48	
Mercury, Hg	0.001 - 0.2	0.1		<0.050		<0.050		<0.050		<0.050		<0.050		<0.050
Nickel, Ni	0.5 - 25	13 or SB	5.23		11.5		0.22 J		4.41		12.5		4.08	
Selenium, Se	0.1 - 3.9	2 or SB		<0.496		<0.437		<0.434		<0.460		<0.473		<0.433
Silver, Ag	NA	SB		<0.397		<0.350		<0.347	1.44			<0.379		<0.346
Thallium, Tl	NA	SB	0.569		0.61		0.274			<0.276		<0.284		<0.260
Zinc, Zn	9 - 50	20 or SB	30.4		59.4		2.04		11.7		37.1		9.97	

*** New York State Background**

****Background levels for lead vary widely; average levels in metropolitan or suburban areas or near highways typically range from 200-500 ppm.**

TABLE 4
85 JAY STREET

Soil Analytical Summary
Polychlorinated Biphenyls

PARAMETER	TAGM 4046 Recommended Soil Cleanup Objectives µg/kg	B-1 (22'-24') Soil µg/kg Dilution 1		B-1 (0-2') Soil µg/kg Dilution 1		B-1 (0-2')[DUP] Soil µg/kg Dilution 1		B-2 (0-4') Soil µg/kg Dilution 1		B-2 (32'-34') Soil µg/kg Dilution 1		B-3 (0-4') Soil µg/kg Dilution 1		B-4 (0-2') Soil µg/kg Dilution 1	
		R	L	R	L	R	L	R	L	R	L	R	L	R	L
Aroclor-1254	NS		<80	70		70		120			<80		<80		<80
Aroclor-1260	NS		<80	60		50			<80		<80		<80		<80
Total PCBs	1,000 surface 10,000 subsurface		ND	130	ND	120	ND	120	ND		ND		ND		ND

PARAMETER	TAGM 4046 Recommended Soil Cleanup Objectives µg/kg	B-5 (0-4') Soil µg/kg Dilution 1		B-5 (34'-36') Soil µg/kg Dilution 1		B-6 (24'-26') Soil µg/kg Dilution 1		B-6 (0-2') Soil µg/kg Dilution 1		B-7 (24'-26') Soil µg/kg Dilution 1		B-7 (0-2') Soil µg/kg Dilution 1	
		R	L	R	L	R	L	R	L	R	L	R	L
Aroclor-1254	NS	350		88			<80	1200			<80		<80
Aroclor-1260	NS	50		50			<80	1300			<80		<80
Total PCBs	1,000 surface 10,000 subsurface	400	ND	138	ND		ND	2500	ND		ND		ND

TABLE 5
85 JAY STREET

Soil Analytical Summary
Pesticides

PARAMETER	TAGM 4046 Recommended Soil Soil Cleanup Objectives µg/kg	B-2 Soil µg/kg Dilution 1		B-2 (0-4') Soil µg/kg Dilution 1		B-2 (32'-34') Soil µg/kg Dilution 1		B-5 (0-4') Soil µg/kg Dilution 1		B-5 (34'-36') Soil µg/kg Dilution 1		B-6 (24'-26') Soil µg/kg Dilution 1		B-6 (0-2') Soil µg/kg Dilution 1	
		R	L	R	L	R	L	R	L	R	L	R	L	R	L
4,4'-DDE	2100		<5.0		<5.0		<5.0	8.9		7			<5.0		<5.0
4,4'-DDT	2100	6.3		32			<5.0	11		18			<5.0		<5.0
Aldrin	41		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0
Chlordane	540	16		78			<5.0	140		58		7.4		83	
Chlorobenzilate	NS		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0
Endosulfan Sulfate	1000		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0	3 J	
Heptachlor	100		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0
Methoxychlor	<10,000 total		<5.0		<5.0		<5.0	0			<5.0		<5.0		<5.0
Toxaphene	NS		<300		<300		<300		<300		<300		<300		<300

PARAMETER	TAGM 4046 Recommended Soil Soil Cleanup Objectives µg/kg	B-7 (24'-26') Soil µg/kg Dilution 1		B-7 (0-2') Soil µg/kg Dilution 1		B-1 (22'-24') Soil µg/kg Dilution 1		B-1 (0-2') Soil µg/kg Dilution 1		B-1 (0-2')[DUP] Soil µg/kg Dilution 1		B-3 (0-4') Soil µg/kg Dilution 1		B-4 (0-2') Soil µg/kg Dilution 1	
		R	L	R	L	R	L	R	L	R	L	R	L	R	L
4,4'-DDE	2100		<5.0		<5.0		<5.0	7			<5.0	12			<5.0
4,4'-DDT	2100		<5.0	4			<5.0	18			<5.0	26		5.4	
Aldrin	41		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0
Chlordane	540	8.3			<5.0	6.5		58		22		220		7.6	
Chlorobenzilate	NS		<5.0	140			<5.0		<5.0		<5.0		<5.0		<5.0
Endosulfan Sulfate	1000		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0
Heptachlor	100		<5.0		<5.0		<5.0		<5.0		<5.0	7.9			<5.0
Methoxychlor	<10,000 total		<5.0		<5.0	11			<5.0		<5.0		<5.0		<5.0
Toxaphene	NS		<300		<300		<300		<300		<300		<300		<300

Key to Symbols and Terms

µg/kg = parts per billion
mg/kg = parts per million
J = Analyte detected below quantitation limits

L = Reporting Limit
R = Result (if greater than the reporting limit)
ND = Non Detect
SB = Site Background
NA = Not Analyzed
NS = No Standard
MDL = Method Detection Limit

[1] NYSDEC Technical Administrative Guidance Memorandum (TAGM) 4046, Determination of Soil Cleanup Objectives and Cleanup Levels.

[2] NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.

TABLE 6
85 JAY STREET

Groundwater Analytical Summary
Volatile Organic Compounds

Parameter	Class GA Groundwater Standards µg/L	NYC DEP Sewer Discharge Limits Daily/Monthly µg/L	B-1 0306040-04A Liquid 6/9/2003 µg/L	B-2 0306027-02A Liquid 6/5/2003 µg/L	B-5 0306027-01C Liquid 6/5/2003 µg/L	B-7 0306040-02A Liquid 6/9/2003 µg/L	B-6 0306040-03C Liquid 6/9/2003 µg/L	FB-W 0306027-08C Liquid 6/5/2003 µg/L
1,2,4-Trimethylbenzene	5	NS	<1.0	8.6	9.8	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	5	NS	<1.0	5.4	6.2	<1.0	<1.0	<1.0
Dibromofluoromethane	NS	NS	<1.0	42	45	54	54	49
m,p-Xylene	5	74/28	<2.0	7.5	11	<2.0	<2.0	<1.0
Tetrachloroethene	5	20	<1.0	<1.0	<1.0	21	2.1	<1.0

TABLE 7
85 JAY STREET

Groundwater Analytical Summary
Semivolatile Organic Compounds

Parameter	Class GA Groundwater Standards µg/L	NYC DEP Sewer Discharge Limits Daily/Monthly µg/L	B-2 0306027-02A Liquid 6/5/2003 µg/L	B-5 0306027-01C Liquid 6/5/2003 µg/L	B-7 0306040-02A Liquid 6/9/2003 µg/L	B-6 0306040-03C Liquid 6/9/2003 µg/L	FB-W 0306027-08B Liquid 6/5/2003 µg/L
2-Methylnaphthalene	50	NS	6.7	<5.0	<5.0	<5.0	<5.0
Benzoic acid	NS	NS	<5.0	1	<5.0	<5.0	<5.0
Naphthalene	10	47/19	5.3	<5.0	<5.0	<5.0	<5.0
Phenanthrene	50	NS	<5.0	1	7.5	<5.0	<5.0

TABLE 8
85 JAY STREET

Groundwater Analytical Summary
Unfiltered Metals

Parameter	Class GA Groundwater Standards[2] mg/L	NYC DEP Sewer Discharge Limits mg/L	B-2 0306027-02A Liquid 6/5/2003 mg/L	B-5 0306027-01C Liquid 6/5/2003 mg/L	B-7 0306040-02A Liquid 6/9/2003 mg/L	B-6 0306040-03C Liquid 6/9/2003 mg/L	FB-W 0306027-08C Liquid 6/5/2003 mg/L
Antimony	0.003	NS	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
Arsenic	0.025	NS	0.02	0.0078	0.0957	0.18	<0.0250
Beryllium	0.003	NS	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Cadmium	0.005	2	<0.0100	<0.0100	0.0071 J	0.0055	<0.0100
Chromium	0.05	5	0.0947	0.0844	0.524	0.8	<0.0200
Chromium, Hexavalent	0.05	NS	<.010	<0.01	<0.01	NA	NA
Copper	0.2	5	0.171	0.144	0.671	1.09	<0.0200
Lead	0.025	2	1.3	0.445	2.77	4.68	0.012
Mercury	0.0007	0.05	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	0.1	3	0.12	0.115	0.609	0.818	<0.0200
Selenium	0.01	NS	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
Silver	0.5	NS	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Thallium	0.0005	NS	<0.0150	<0.0150	0.0194	<0.0150	<0.0150
Zinc	2	5	0.31	0.014	2.28	3.14	0.0368

TABLE 9
85 JAY STREET

Groundwater Analytical Summary
Dissolved Metals

Parameter	Class GA Groundwater Standards mg/L	NYC DEP Sewer Discharge Limits mg/L	B-2 0306027-02A Liquid 6/5/2003 mg/L	B-5 0306027-01C Liquid 6/5/2003 mg/L	B-7 0306040-02A Liquid 6/9/2003 mg/L	B-6 0306040-03C Liquid 6/9/2003 mg/L	FB-W 0306027-08C Liquid 6/5/2003 mg/L
Antimony	0.003	NS	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
Arsenic	0.025	NS	<0.0250	<0.0250	0.011	0.012	<0.0250
Beryllium	0.003	NS	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Cadmium	0.005	2	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Chromium	0.05	5	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Copper	0.2	5	<0.0200	<0.0200	0.0059	0.0041	<0.0200
Lead	0.025	2	0.015	0.0092	0.0416	<0.0150	0.01
Mercury	0.0007	0.05	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Nickel	0.1	3	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Selenium	0.01	NS	0.02	<0.0250	<0.0250	<0.0250	<0.0250
Silver	0.05	NS	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Thallium	0.005	NS	<0.0150	<0.0150	0.022	<0.0150	<0.0150
Zinc	2	5	0.014	0.014	0.049	0.019	0.0041

TABLE 10
85 JAY STREET

Groundwater Analytical Summary
Other Parameters

Parameter	NYCDEP Sewer Discharge Criteria	Units	B-2 0306027-02A Liquid 6/5/2003	B-5 0306027-01C Liquid 6/5/2003	B-7 0306040-02A Liquid 6/9/2003
SGT-HEM (Non-Polar Material)	50	mg/L	<1.4	50	<1.4
Ignitability	>140	°F	>140	>140	>140
pH	6.5-8.5	pH units	6.63	6.49	7.1

Key to Symbols and Terms

* Not Applicable
** No Standard Exists
µg/L = micrograms per liter
mg/L = milligrams per liter
J = Analyte detected below quantitation limits
L=Reporting Limit
ND = Non Detect
R = Result (if greater than the reporting limit)
SB = Site Background
Exceeds Class GA Groundwater Standards
Exceeds Sewer Discharge Limits
Exceeds both the Sewer Discharge Limits and the Groundwater Standards