Jamaica Station
Jamaica, NY 11435-4380
718 558-7400

Helena E. Williams
President

DUPLICATE

Long Island Rail Road

December 5, 2012

Tara Diaz, Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A
625 Broadway, 11th Floor
Albany, NY 12233-7016

Re: LIRR Hempstead (NYSDEC VCA No. V00390-1)
Delineation Phase II Site Assessment Investigation Report

Dear Mrs. Diaz:

Enclosed please find three hard copies and one electronic copy of the Report entitled:

"Delineation Phase II Site Assessment Investigation Report
LIRR Hempstead Substation
(NYSDEC VCA No. V00390-1)"

Please be advised that the LIRR will be decommissioning and demolishing the Hempstead Substation as part of an overall capital program system upgrade project. In addition, a new substation building has been constructed, to the east of the rail tracks. Note that a Remedial Action Work Plan (RAWP) will be submitted to your Department subsequent to your approval of the proposed remedial actions presented in the enclosed document.

Please do not hesitate to contact me at (718) 558-3826 if you have any questions or comments.

Very truly yours,

Maria Hall
Project Manager

LP/lf
cc: G. Bobersky (NYSDEC)
W. Parish (NYSDEC)
A. Perretta (NYSDOH)
C. Hillenbrand (USEPA)
C. Chamer (MTA)
J. Makowski (LIRR)
G. Russo (LIRR)
T. Fox (D&B)

DEC - 7 2012

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METROPOLITAN TRANSPORTATION AUTHORITY

LONG ISLAND RAIL ROAD

DELINEATION PHASE II SITE ASSESSMENT

FOR

HEMPSTEAD SUBSTATION
(V00390-1)

INVESTIGATION REPORT

Prepared for:

METROPOLITAN TRANSPORTATION AUTHORITY

LONG ISLAND RAIL ROAD

Prepared by:

DVIRKA AND BARTILUCCI CONSULTING ENGINEERS

WOODBURY, NEW YORK 11797

DECEMBER 2012

LONG ISLAND RAIL ROAD
DELINEATION PHASE II SITE ASSESSMENT FOR
HEMPSTEAD SUBSTATION
INVESTIGATION REPORT

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Section 1

1.0 INTRODUCTION

This Investigation Report presents the results of the Delineation Phase II Site Assessment, conducted at the Long Island Rail Road (LIRR) Hempstead Substation which was completed in accordance with fully executed Voluntary Cleanup Agreement No. V00390-1.

The objectives of the Delineation Phase II Site Assessment included the following:

- Define the nature and extent of impacts to surface and subsurface soil;
- Determine if site-related contaminants have impacted groundwater quality;
- Identify potential impacts to human health and/or the environment associated with site-related contaminants; and
- Obtain sufficient data to determine the need for remedial action and to evaluate remedial alternatives that may be implemented as a final long-term remedy for the site.

Field activities and sampling procedures associated with the Delineation Phase II Site Assessment at the Hempstead Substation were completed in accordance with the NYSDEC-approved "Investigation Work Plan" dated June 2005.

The following subsections provide relevant project background information, including detailed descriptions of the Hempstead Substation site, as well as a summary of the findings of prior investigation work.

1.1 Project Background

The LIRR designed, constructed and operated substations from the early 1930's through 1951 that utilized mercury rectifiers. These rectifiers allowed the LIRR to receive 60-cycle, alternating current (AC) from local utilities and convert it to direct current (DC) for use as a source of electric power for its locomotives and electric passenger car fleet. The LIRR identified

20 substations located throughout Queens, Nassau and Suffolk Counties that once utilized mercury containing rectifiers, including the Hempstead Substation.

It is believed that during the early 1980s, the mercury rectifiers were taken out of service and physically removed from these LIRR substations and replaced with non-mercury containing solid state equipment. However, due to uncertainties surrounding the work practices that may have been employed when managing the operation and maintenance of these mercury rectifiers, the LIRR believed it necessary to conduct environmental assessments at these 20 electric substations to determine the potential effects that may have occurred to the surrounding environment.

Between 1999 and 2000, the LIRR conducted environmental assessments at the 20 electric substations previously utilizing mercury-containing rectifiers. The results of these assessments were documented in a report prepared by Dvirka and Bartilucci Consulting Engineers (D&B), entitled, "Site Assessment of 20 Substations for Mercury Contamination," dated December 2000. Based on the findings of that report, mercury was identified in soil at all 20 substations, including the Hempstead Substation, at concentrations above the New York State Department of Environmental Conservation's (NYSDEC's) recommended cleanup objectives (TAGM 4046). Note that, in April 2000, the LIRR conducted an Interim Remedial Measure (IRM), consisting of the removal of 6 inches of mercury-contaminated soil and replacement with poly sheeting and crushed stone in a targeted area to the south of the Hempstead Substation. This IRM action was documented in a report prepared by D&B, entitled "Interim Remedial Measure Oversight Report, "dated January 2001. In order to further delineate and remediate impacted soil at the 20 substations, the LIRR has agreed to undertake and complete Delineation Phase II Site Assessments under the NYSDEC Voluntary Cleanup Program (VCP). In support of this VCP, the LIRR elected to conduct Delineation Phase II Site Assessment activities at the Hempstead Substation.

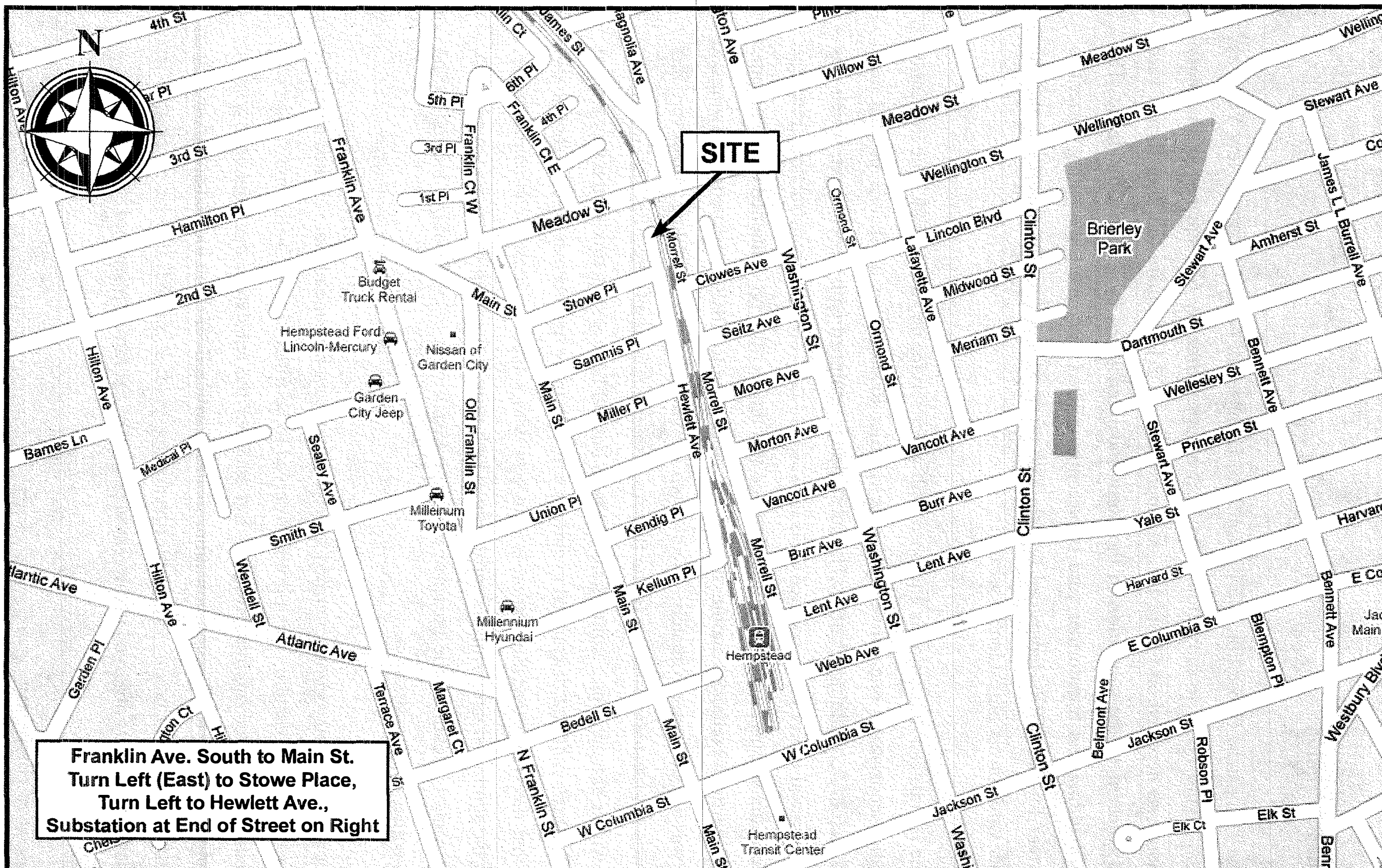
The report discusses the data generated as part of the Initial Site Assessment and Delineation Phase II Site Assessment activities conducted at the Hempstead Substation.

1.2 Site Description

The Hempstead Substation site is located in Hempstead, Nassau County, New York, as depicted on Figure 1-1. The substation consists of an approximately 625 square foot one-story brick building, as depicted on Figure 1-2. An approximately 2,100 square foot transformer yard is located adjacent to the substation to the north and is enclosed by a chain-link fence. The substation building and transformer yard is presently utilized to convert alternating current to direct current for the LIRR-Hempstead branch. The areas surrounding the substation and the transformer yard consist of residential areas.

The Hempstead Substation is equipped with water service and a slop sink. The interior of the substation consists of one active solid-state rectifier located over a separate pit that once serviced a mercury-containing rectifier. The substation is equipped with a second pit, which was covered by a metal utility plate, referred to as a "water trough" on LIRR construction drawings. During the initial site investigation, it was observed that the rectifier pit contained one drain pipe and the water trough contained another drain pipe. According to LIRR construction drawings, a dry well was located approximately 4 feet south of the substation building. However, this structure was not located during the Initial Site Assessment. The Hempstead Substation was not equipped with a basement or a utility trench system but did have a slop sink which was located along the northern wall that discharged to surface soil within the transformer yard. It should also be noted that the Hempstead Substation is equipped with a bank of active lead-acid batteries located in the southwest corner of the substation, which provide back-up electricity. In addition, the site inspection identified the presence of a pipe trench with a solid bottom located in the southwest corner of the substation.

The initial site inspection identified a meter pit covered by a metal plate located along the southern wall of the substation. This pit was observed to be filled to grade with sand. There was also a conduit pit located approximately 40 feet south of the substation that contained a floor drain. In addition, there was a communications manhole with a floor drain located approximately 10 feet north of the substation within the transformer yard. It should also be noted that an "earthen depression" was observed in the central portion of the transformer yard.



Not to Scale

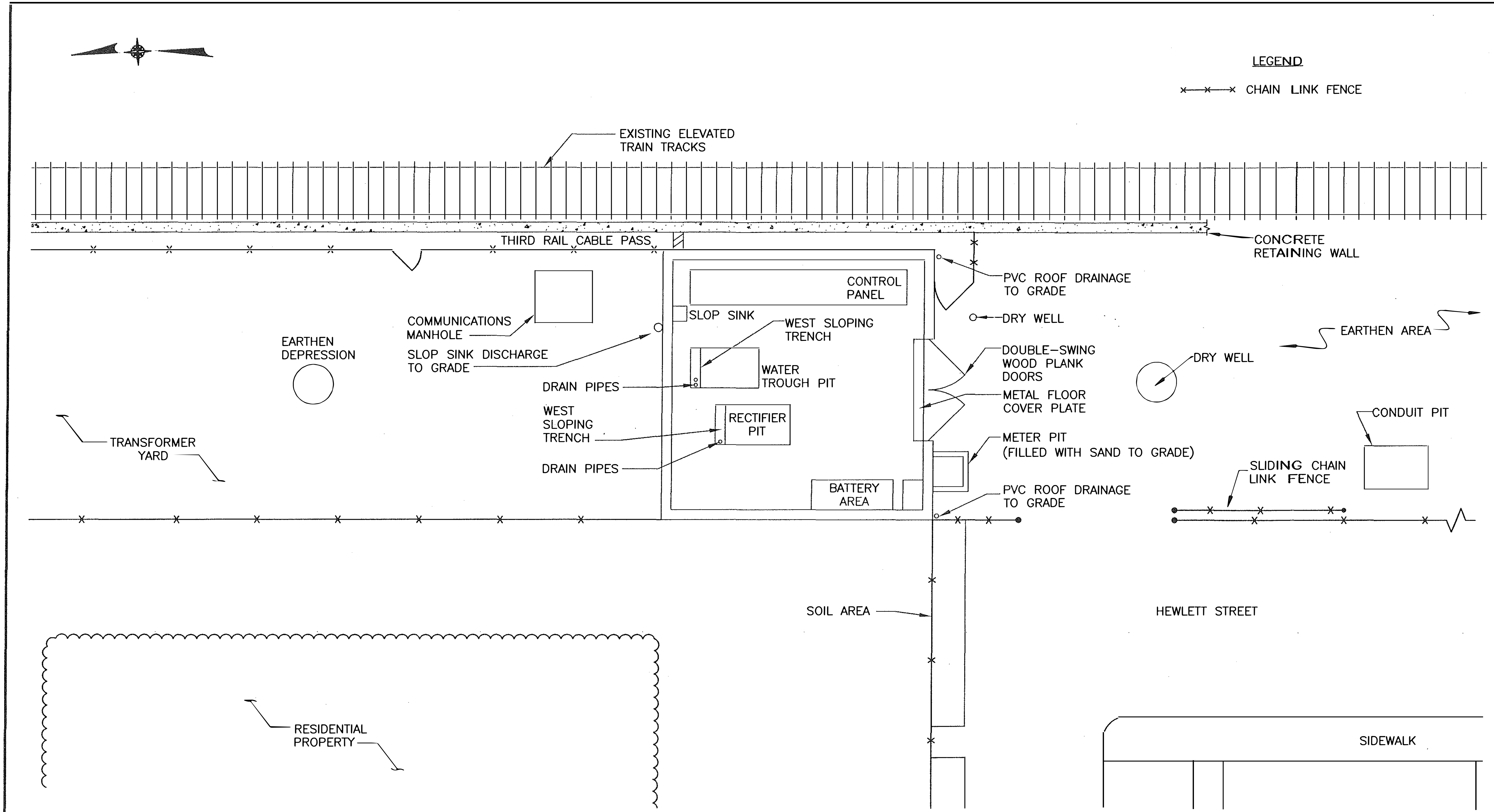
DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
A DIVISION OF D&B ENGINEERS AND ARCHITECTS, P.C.

LONG ISLAND RAIL ROAD
DELINEATION PHASE II SITE ASSESSMENT

SITE LOCATION MAP
HEMPSTEAD SUBSTATION (V00390-1)

FIGURE 1-1

2801-09 - Site Location Map (Hempstead).indd (10/23/12 - 4:29 PM)



SOURCE: AVAILABLE LONG ISLAND RAIL ROAD CONSTRUCTION DRAWINGS AND D&B's FIELD OBSERVATIONS

DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
A DIVISION OF D&B ENGINEERS AND ARCHITECTS, P.C.

LONG ISLAND RAIL ROAD
DELINEATION PHASE II SITE ASSESSMENT

SITE PLAN
HEMPSTEAD SUBSTATION (V00390-1)

FIGURE 1-2

Based on the results of the Delineation Phase II Site Assessment, the depth to groundwater at this site is approximately 35 feet below ground surface.

1.3 Summary of Prior Investigations

The LIRR completed an Initial Site Assessment of the Hempstead Substation in 1999, as documented in the report entitled, "Site Assessment of 20 Substations for Mercury Contamination," dated December 2000. Investigation methods utilized during this Initial Investigation included a site inspection, mercury vapor measurements and drainage determinations. In addition, samples of various environmental media were collected at the site for laboratory analysis. These media included surface soil, subsurface soil and concrete cores. Analytical data generated from the Initial Investigation is presented in Appendix A of this report.

Additional details regarding the Initial Investigation of the Hempstead Substation are presented in the previously referenced report "Site Assessment of 20 Substations for Mercury Contamination." Note that the findings of the 2000 Initial Investigation were utilized as the basis for developing the investigation scope of work for the Delineation Phase II Site Assessment investigation. Below is a summary of the findings of the Initial Investigation of the Hempstead Substation.

<u>Drainage Determination</u>

Three drain pipes which originate in the sub-grade pits within the substation building were mechanically traced. The first pipe exited the northern wall of the rectifier pit extending under the northern wall of the substation building. Refusal was met approximately 1.5 feet from the north outer building wall. The second and third pipe exited the northern wall of the water trough pit where refusal was met within the first few feet, and the pipe could not be traced beyond the limits of the pit. As no drainage structures exist to the north of the substation building, it is assumed these drainage pipes ultimately extend to one or both of the dry wells located to the south of the substation building; however, as refusal was encountered, establishing this connection was not possible.

The dry well located approximately 20 feet south of the substation building was inspected and a discharge pipe entering from the north was identified in the dry well. The pipe appeared to extend from the substation building; however, a connection between this pipe and the interior substation pits could not be established.

Sampling and Analysis

The following subsections describe the findings associated with surface soil, subsurface soil and concrete core samples collected from the Hempstead Substation during the completed previous investigations. All samples were analyzed for mercury. Samples collected during this phase of the investigation were compared to the TAGM 4046 Recommended Soil Cleanup Objectives (RSCOs); however, as of December 2006, the NYSDEC has mandated new cleanup objectives, and as such, all Initial Investigation data has been reevaluated and compared to the NYCRR Subpart 375 Industrial Soil Cleanup Objectives (SCOs). Note, all soil samples collected during this phase of the project were collected from within the fenced substation property. In addition, as per the United States Environmental Protection Agency (USEPA), all soil samples collected from or associated with Underground Injection Control (UIC) structures will be compared to TAGM 4046. Sample Locations are provided on Figure 2-1 in Section 2.0. Results for the mercury analysis are provided in Appendix A.

Surface Soil

Two surface soil samples were collected for mercury analysis. Both collected surface soil samples exhibited detectable concentrations of mercury in exceedance of the Industrial SCO for mercury of 5.7 mg/kg, ranging in concentration from 198 mg/kg to a maximum concentration of 236 mg/kg. The maximum concentration of mercury was detected in HSSS-01, collected adjacent to the south side of the substation building.

Subsurface Soil

Six subsurface soil samples were collected for mercury analysis. Mercury was not detected at concentrations exceeding its Industrial SCO of 5.7 mg/kg in any of the collected subsurface soil samples.

Underground Injection Control (UIC) and Below Grade Structures

Six below grade structures were investigated as part of the Initial Investigation. The structures investigated included a communications cable pit located approximately 7 feet north of the substation building, the conduit pit located approximately 42 feet south of the substation building, a dry well located approximately 20 feet south of the substation building, the rectifier pit located within the substation building, the water meter pit located adjacent to the southwest corner of the substation building and the water trough pit located within the substation building. The results of the investigations are as follows:

Communications Cable Pit

One sediment soil sample (HSSS-03) was collected from a storm water drain hole in the communications cable pit located approximately 7 feet north of the substation building. As discharge piping was not observed in this structure during the Delineation Phase II Assessment and this structure's primary function is not to accept fluids, the communications cable pit is not a UIC structure. Therefore, the collected soil sample was compared to the Industrial SCO for mercury of 5.7 mg/kg. Sediment soil sample HSSS-03 exhibited a mercury concentration of 3.1 mg/kg, below the Industrial SCO of 5.7 mg/kg.

Conduit Pit

The conduit pit located approximately 42 feet south of the substation building was investigated during the Initial Site Assessment. A floor drain was noted in this structure during the Initial Site Assessment; however, no samples were collected from this structure. In addition, note that as detailed below, a follow-up investigation of this structure completed as part of the Delineation Phase II Site Assessment determined that this structure did not contain a drain.

Dry Well

One soil boring (HSSB-03) was advanced in the dry well located approximately 20 feet south of the substation building and two subsurface soil samples were collected from 17 to 19 and 21 to 23 feet below ground surface for mercury analysis. As this is a UIC structure, these soil samples have been compared to the TAGM SCO for mercury of 0.1 mg/kg. Both subsurface soil samples exhibited mercury concentrations in exceedance of the TAGM SCO, ranging in concentration from 2.1 mg/kg to 45.6 mg/kg. The greatest mercury concentration was detected in subsurface soil sample HSSB-03 (21 to 23 feet).

Rectifier Pit

One soil boring (HSSB-07) was advanced in the rectifier pit located inside the substation building and two subsurface soil samples were collected from 0 to 2 and 2 to 4 feet below the pit bottom for mercury analysis. As this is a UIC structure, these soil samples have been compared to the TAGM SCO for mercury of 0.1 mg/kg. Both subsurface soil samples exhibited mercury concentrations in exceedance of the TAGM SCO, ranging in concentration from 1.7 mg/kg to 13.8 mg/kg. The greatest mercury concentration was detected in subsurface soil sample HSSB-07 (0 to 2 feet). Based on the Initial Site Assessment data, additional delineation was not warranted.

Water Meter Pit

One soil boring (HSSB-04) was advanced in the water meter pit located adjacent to the southwest corner of the substation building and two subsurface soil samples were collected from 4 to 6 and 8 to 10 feet below ground surface for mercury analysis. As discharge piping was not observed in this structure during the Delineation Phase II Assessment and this structure's primary function is not to accept fluids, the water meter pit is not a UIC structure. Therefore, the collected soil samples were compared to the Industrial SCO for mercury of 5.7 mg/kg. Of the two collected subsurface soil samples, subsurface soil sample HSSB-04 (4 to 6 feet), at a concentration of 8.3 mg/kg, exhibited mercury in exceedance of its Industrial SCO.

Water Trough Pit

One soil boring (HSSB-06) was advanced in the water trough pit located inside the substation building and two subsurface soil samples were collected from 0 to 2 and 4 to 6 feet below the pit bottom for mercury analysis. As this structure was designed to drain waste fluids, this is a UIC structure. Therefore, these soil samples have been compared to the TAGM SCO for mercury of 0.1 mg/kg. Both subsurface soil samples exhibited mercury concentrations in exceedance of the TAGM SCO, ranging in concentration from 0.39 mg/kg to 1.7 mg/kg. The greatest mercury concentration was detected in subsurface soil sample HSSB-06 (0 to 2 feet). Based on the Initial Site Assessment data, additional delineation was not warranted.

Concrete

Two concrete core samples were collected from the interior of the substation building for mercury analysis. One of the two collected concrete core samples exhibited a detectable concentration of mercury in exceedance of the Industrial SCO for mercury of 5.7 mg/kg: concrete core sample HSCC-02, collected from beneath the rectifier pit, exhibited mercury at a concentration of 52.8 mg/kg.

IRM Activities

In May 2000, the LIRR conducted an Interim Remedial Measure (IRM), consisting of the removal of 6 inches of contaminated soil and replacement with poly sheeting and crushed stone in a targeted area to the south of the Hempstead Substation in order to reduce the potential for exposure to mercury in surface soil in this area. Note that this area is enclosed by a locked chain link fence. As depicted on Figure 2-1, IRM activities were conducted in the vicinity of the swing-out doors located on the south side of the substation building. Two post excavation soil samples were collected from a depth of 6-inches below ground surface. Post excavation sample results are provided in Appendix A. Both post excavation soil samples exhibited detectable concentrations of mercury in exceedance of the Industrial SCO for mercury of 5.7 mg/kg, ranging in concentration from 226 mg/kg to a maximum concentration of 238 mg/kg. The maximum concentration of mercury was detected in HSEP-02, collected approximately 3-feet south of the swing-out doors on the south side of the substation building.

Section 2

2.0 INVESTIGATION METHODS

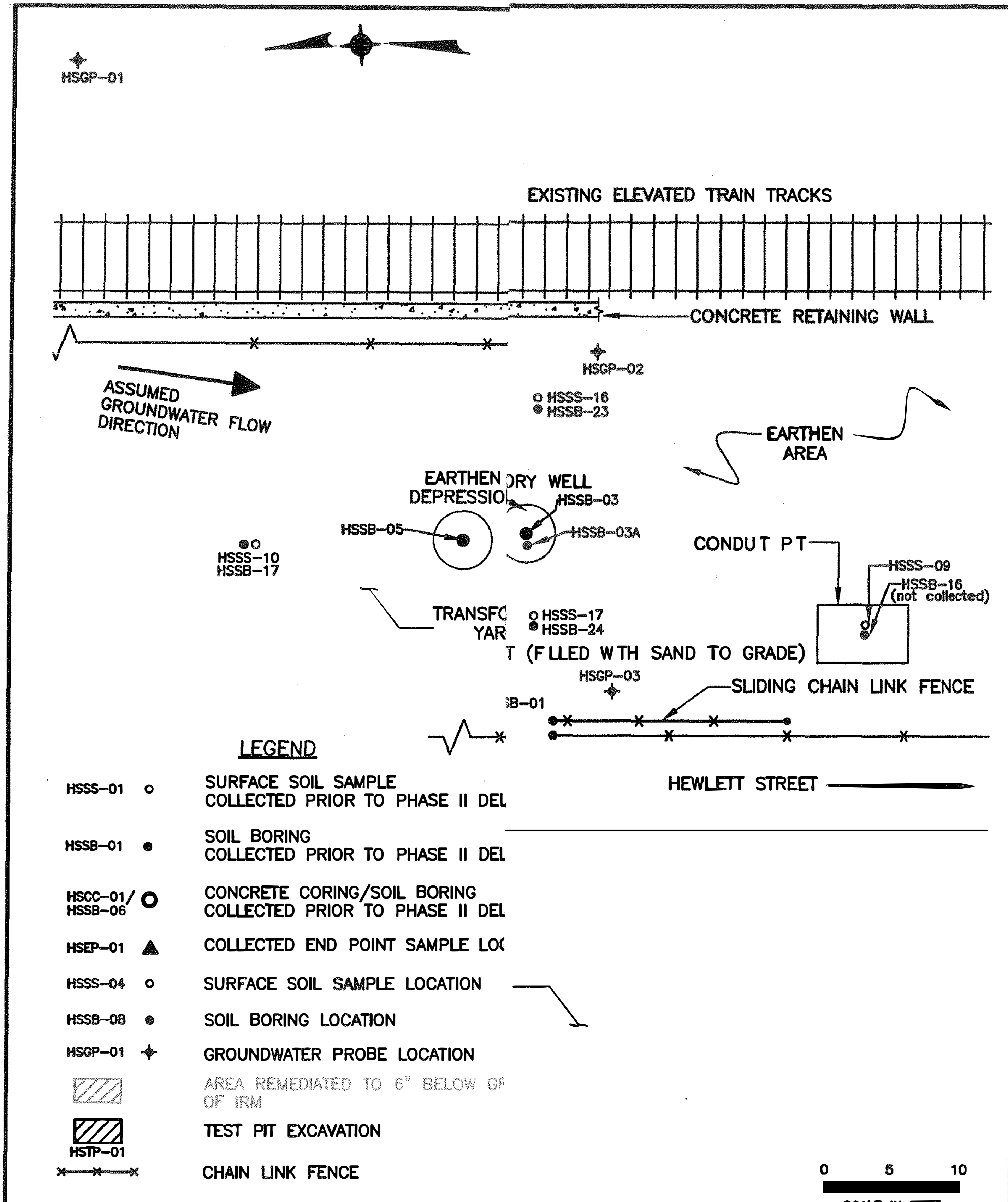
2.1 Introduction

This section provides a description of the field activities conducted at the Hempstead Substation site as part of the Delineation Phase II Site Assessment. The initial scope of work was completed in September 2005 in accordance with the New York State Department of Environmental Conservation (NYSDEC) approved Work Plan, dated June 2005. Based on the results of this sampling, D&B provided the LIRR and the NYSDEC with a July 2006 Preliminary Evaluation as to the nature and extent of contamination along with recommendations for additional sampling and analysis. Based on the findings of the 2005 investigation, additional soil samples were collected in March 2009 through May 2010 in areas exhibiting the greatest mercury and lead concentrations. It was necessary to complete the additional sampling locations to sufficiently define the extent of elevated mercury and lead concentrations in substation property and abutting western residential property soil in order to develop an appropriate remedial plan for the removal of soil in these areas. All additional sampling at the Hempstead Substation was completed by D&B in May 2010.

Sample locations associated with the preliminary Delineation Phase II Site Assessment are depicted on Figure 2-1. Drawing 1, provided in a map pocket at the end of this section, depicts the locations of the 2009 and 2010 additional delineation sample locations, completed based on the results of the 2005 investigation. In addition, a sampling and analysis summary for the above listed investigation phases is provided on Table 2-1. Laboratory data generated as part of the Delineation Phase II Site Assessment are included in Appendix B.

2.2 Surface Soil Sampling

A total of 129 surface soil samples were collected at the Hempstead Substation as part of the Delineation Phase II Site Assessment. Surface soil samples were collected from a depth of 0 to 2 inches below ground surface. All samples were collected utilizing a dedicated



SOURCE: AVAILABLE LONG ISLAND RAIL ROAD CONSTRUCTION DRAWINGS AND D&I

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FIGURE 2-1

LONG ISLAND RAILROAD
DELINEATION PHASE II SITE ASSESSMENT - SEVENTEEN SUBSTATIONS
HEMPSTEAD (V00390-1) - SUMMARY OF COMPLETED FIELD ACTIVITIES (9/8/05 through 2/28/06)

Location	Sample Designation	SURFACE SOIL SAMPLES**	SOIL PROBES/BORINGS			GROUNDWATER PROBES		Recommended Analyses									Comments
			No. of Probes	No. of Samples	Soil Sampling Interval	No. of Probes	Approximate Total Depth of Probes	Mercury	Lead	RCRA Metals	TAL Metals	PCBs	VOCs	SVOCs	Full TCLP and Waste Characteristics	USEPA UIC Constituents*	
South Side of Substation	HSSS-04 HSSB-08 through 10	1	3	9	2-8' bgs Cont.	-	-	10	-	-	-	-	-	-	-	-	-
	HSSB-02A	-	1	2	6-10' bgs Cont.	-	-	2	-	-	-	-	-	-	-	-	-
	HSSS-22 through 50 HSSB-28 through 33, 35 through 39, 41 through 46, 48 through 59	29	29	35	1-2' bgs 1-2 and 2-6' bgs Cont. (HSSB 35, 53 and 59 only)	-	-	64	-	-	-	-	-	-	-	-	-
	HSSS-55 through 59 and 62 HSSB-64 through 69, 76, 92 and 93	6	9	11	1-2' bgs 1-2 and 2-4' bgs (HSSB-69 and 76 only) 4-6 and 6-8' bgs (HSSB-92 only) 4-6' bgs (HSSB-93 only)	-	-	17	-	-	-	-	-	-	-	-	-
IRM Area	HSSB-34, 40 and 47	-	3	7	1-2' bgs (HSSB-47) 1-2 and 2-6' bgs Cont. (HSSB 34 and 40)	-	-	7	7	-	-	-	-	-	-	-	-
West Side of Substation (Hewlett Street)	HSSS-51, 52, 61, 69, 72, 73, 82 and 90 HSSB-60, 61, 71, 78, 81, 82, 91, 101	8	8	12	1-2' bgs 1-2 and 2-6' bgs Cont. (HSSB 60 and 61 only)	-	-	20	-	-	-	-	-	-	-	-	-
Southwest Residential Property	HSSS-97, 98, 105, 106, 111 through 113, 119 through 125, 127, 129, 131 through 133, 139 through 144 HSSB-108, 109, 116, 117, 122 through 124, 130 through 136, 138, 140, 142 through 144, 150 through 155	25	25	25	1-2' bgs	-	-	50	-	-	-	-	-	-	-	-	-
Northwest Residential Property	HSSS-63, 64, 70, 71, 75 through 81, 84 through 89, 92 through 96, 99 through 104, 107 through 110, 114 through 116 and 130 HSSB-72, 73, 79, 80, 84 through 90, 95 through 100, 103 through 107, 110 through 113, 113A, 114, 115, 118 through 121, 125 through 127 and 141	36	37	38	1-2' bgs 1-2 and 2-3' bgs (HSSB-85 only) 2-4' bgs (HSSB-113A only) 4-6' bgs (HSSB-93 only)	-	-	49	25	-	-	-	-	-	-	-	-
Transformer Yard	HSSS-10 through 13 HSSB-17 through 20	4	4	8	0-4' bgs Cont.	-	-	-	-	12	-	12	-	12	-	-	-
	HSSS-53, 54 and 74 HSSB-62, 63 and 83	3	3	3	1-2' bgs	-	-	-	6	-	-	-	-	4	-	-	-
East Side of Substation	HSSS-21, 60, 68, 83 and 91 HSSB-27, 70, 77, 94 and 102	5	5	6	1-2' bgs 1-2 and 2-4' bgs (HSSB-70 only)	-	-	11	-	-	-	-	-	-	-	-	-

LONG ISLAND RAILROAD
DELINEATION PHASE II SITE ASSESSMENT - SEVENTEEN SUBSTATIONS
HEMPSTEAD (V00390-I) - SUMMARY OF COMPLETED FIELD ACTIVITIES (9/8/05 through 2/28/06)

Location	Sample Designation	SURFACE SOIL SAMPLES**	SOIL PROBES/BORINGS No. of Probes	SOIL PROBES/BORINGS No. of Samples	SOIL PROBES/BORINGS Soil Sampling Interval	GROUNDWATER PROBES No. of Probes	GROUNDWATER PROBES Approximate Total Depth of Probes	Recommended Analyses Mercury	Lead	RCRA Metals	TAL Metals	PCBs	VOCs	SVOCs	Full TCLP and Waste Characteristics	USEPA UIC Constituents*	Comments
Meter Pit	HSSB-04A	-	1	3	10-16' bgs Cont.	-	-	-	-	-	-	-	-	-	-	3	-
Slop Sink	HSSS-05 through 08 and 20 HSSB-11 through 14	5	4	4	2-4' bgs Cont.	-	-	9	-	-	-	-	-	-	-	-	HSSS-06 and HSSB-12 were moved north 2.5', due to site conditions. HSSS-20 was added, in order to collect a sample directly under the slop sink outlet.
Communications Manhole	HSSB-15	-	1	1	0-2' bmb Cont.	-	-	-	-	-	-	-	-	-	-	1	HSSB-15 was collected for UIC constituents at a depth of 0-2' bmb, due to refusal.
Conduit Pit	HSSS-09 HSSB-16	1	-	-	2-4' bpb Cont.	-	-	1	-	-	-	-	-	-	-	-	HSSS-09 was not sampled for UIC constituents, due a solid pit bottom. HSSB-16 was cancelled, due to a solid pit bottom.
Roof Drains	HSSS-18 and 19 HSSB-25 and 26	2	2	2	2-4' bgs Cont.	-	-	4	-	-	-	-	-	-	-	-	Two roof drains were identified and the soil beneath the discharge points was sampled.
Dry Wells	HSSB-03A	-	1	4	23-31' bgs Cont.	-	-	-	-	-	-	-	-	-	-	4	HSSB-03A encountered refusal at 31'.
	HSTP-01	-	1	5	0-10' bdb Cont.	-	-	-	-	-	-	-	-	-	-	5	Proposed test pit area was excavated and a dry well was uncovered. Subsurface soil samples (HSTP-01) were collected continuously from 0 to 10' below ground surface from the drywell.
Potential Releases	HSSS-14 through 17 HSSB-21 through 24	4	4	4	2-4' bgs Cont.	-	-	8	-	-	-	-	-	-	-	-	HSSS-14 and HSSB-21 were moved north 5', due to utility obstructions. HSSS-15 and HSSB-22 were moved northeast 2.5', due to utility obstructions.
Groundwater	HSGP-01 through 03	-	-	-	-	3	34'	-	-	-	6***	-	3	-	-	-	HSGP-01 was moved east approximately 60', due to site conditions.
Waste Characterization	HSWC-01 through 04	4	4	4	1-2' bgs	-	-	-	-	-	-	-	-	-	8	-	-
		133	145	183	-	3	-	252	38	12	6	12	3	16	8	13	Totals

NOTES:
bgs: below ground surface.
bpb: below pit bottom.
bdb: below dry well bottom .
bmb: below manhole bottom.
Cont.: Continuous 2-foot soil sampling
-: Not Applicable
*: USEPA UIC Constituents include VOCs by Method 8260b, RCRA Metals including Mercury by Methods 6010b/7471a, SVOCs by Method 8270c, PCBs by Method 8082, and TPHs by Method 8015b.
**: Surface soil samples collected at 0-2" interval.
***: Filtered and Unfiltered Samples

polyethylene scoop and placed into laboratory-supplied glass bottles. Filled sample bottles were then placed into an ice-filled cooler for subsequent shipment to the analytical laboratory.

All samples were screened utilizing a mercury vapor analyzer (MVA) for the presence of mercury vapor and a photoionization detector (PID) for the presence of volatile organic compounds (VOCs). In areas of the substation property where the ground surface was covered with railroad ballast or crushed stone, this material was removed prior to collecting the surface soil sample, and returned when sampling was completed.

2.3 Subsurface Soil Sampling

A total of 176 subsurface soil samples were collected at the Hempstead Substation as part of the Delineation Phase II Site Assessment. All subsurface soil borings were hand-cleared to a depth of five feet below ground surface in order to avoid impacting any underground utilities. In general, subsurface soil samples collected from less than five feet below ground surface were collected using a decontaminated hand auger and/or post hole digger, and subsurface soil samples collected from more than five feet below ground surface were collected using direct push (Geoprobe®) sampling techniques with a decontaminated probe sampler. The samples were screened for mercury vapor utilizing a MVA, and for VOCs utilizing a PID; inspected for staining, discoloration; checked for odors; and logged by a geologist in a dedicated field logbook. Boring logs are provided in Appendix C.

Before commencement of soil probing, all "down-hole" probing equipment (i.e., macro-core samplers, probe rods, etc.) was decontaminated using a steam cleaner/pressure washer and/or Alconox and water prior to use. Soil probe samplers were also decontaminated between each use by thoroughly washing with Alconox and water, using a brush to remove particulate matter or surface film, followed by a thorough rinsing with tap water.

In addition to monitoring VOC and mercury vapor concentrations in the collected soil samples, an MVA and a PID were used to monitor mercury vapor and VOCs, respectively, in the breathing zone and at the probe holes and boreholes. The PID was calibrated on at least a daily basis, using isobutylene gas at a concentration of 100 parts per million (ppm) in air. The MVA was factory-calibrated as per the manufacture's specifications.

Upon completion of the soil probes, recovered sample material which was not retained for laboratory analysis was returned to the borehole from which it came. The remainder of the borehole was filled with clean sand, bentonite pellets and/or concrete, where appropriate. All probe holes were restored to grade with the same material that was originally in place.

2.4 Groundwater Probe Installations and Sampling

Three groundwater probes, consisting of one probe located upgradient of the substation building, and two probes located downgradient of the substation building were advanced and groundwater samples were collected from these locations. The groundwater samples were collected by driving decontaminated probe rods to the designated sample depth and inserting dedicated polyethylene tubing and a decontaminated stainless steel check valve into the rod assembly. The check valve and tubing were then manually oscillated to purge approximately two to three gallons of groundwater prior to sample collection. Each groundwater sample, upon retrieval, was analyzed in the field for pH, conductivity, dissolved oxygen, turbidity, and temperature. Groundwater samples were then collected from the tubing/check valve assembly into laboratory-supplied glass bottles. Any evidence of odors, sheens or the presence of free product was noted. All observations and results were logged in the project field books. Boring logs can be found in Appendix C.

Upon completion, each probe hole was backfilled with clean sand and/or bentonite pellets. All probe holes were restored at grade with the same material that was originally in place.

2.5 Underground Injection Control (UIC) and Below Grade Structures

Five below grade structures were investigated for Underground Injection Control (UIC) applicability as part of the Delineation Phase II Site Assessment. The structures investigated included a communications manhole located approximately seven feet north of the substation building, a conduit pit located approximately 42 feet south of the substation building, a dry well located approximately 4 feet south of the substation building, a dry well located approximately 20 feet south of the substation building and a water meter pit located adjacent to the southwest corner of the substation building. The investigations were conducted as follows:

Communications Manhole

The communications manhole located approximately seven feet north of the substation building was visually inspected for the presence of a solid bottom and discharge piping during the Delineation Phase II Site Assessment. A storm water drain hole was observed in the communications manhole bottom; however, discharge piping was not observed in this structure. One subsurface soil sample (HSSB-15 [0 to 2 feet]) was collected from the storm water drain hole in this structure.

Conduit Pit

The conduit pit located approximately 42 feet south of the substation building was visually inspected for the presence of a solid bottom and discharge piping during the Delineation Phase II Site Assessment. Note that the Initial Investigation indicated that a storm water drain hole was located in this structure; however, a storm water drain hole was not identified during the Delineation Phase II Site Investigation. One sediment sample (HSSS-09) was collected from the sediment accumulated on the bottom of this structure.

Dry Well Located Approximately 4 Feet South of the Substation Building

An exploratory excavation was conducted in order to locate a dry well, which based on LIRR construction drawings, was located approximately 4 feet south of the substation building. The dry well was located approximately 2 inches below ground surface and approximately 4 feet south of the substation building. The dry well was observed to be completely filled to grade with soil and debris. Subsurface soil boring HSTP-01 was advanced in the dry well and five subsurface soil samples were collected from approximately ground level to approximately 10 feet below ground surface, in 2-foot continuous intervals.

Dry Well Located Approximately 20 Feet South of the Substation Building

In order to further investigate the dry well located approximately 20 feet south of the substation building, one subsurface soil boring (HSSB-03A) was advanced in the dry well and four subsurface soil samples were collected from approximately 25 feet below ground surface to approximately 31 feet below ground surface, in 2-foot continuous intervals. The bottom of the dry well was observed at approximately 17 feet below ground surface.

Water Meter Pit

In order to further investigate the water meter pit located adjacent to the southwest corner of the substation building, one subsurface soil boring (HSSB-04A) was advanced in the water meter pit and three subsurface soil samples were collected from approximately 10 feet below ground surface to approximately 16 feet below ground surface, in 2-foot continuous intervals.

2.6 Air Sampling

As discussed above, a Jerome MVA was utilized to screen all surface and subsurface soil samples for the presence of mercury vapor, and a PID was utilized to screen all surface and subsurface soil samples for the presence of VOCs. The mercury vapor and VOC results for subsurface soil are summarized on the boring logs provided in Appendix C.

Section 3

3.0 FINDINGS

The findings from the Initial Investigation, conducted in 2000, were the basis for the sample locations chosen for the "Delineation Phase II Site Assessment," completed in September 2005, and further delineation activities completed in May 2010.

Surface and subsurface soil sample results are compared to the New York State Department of Environmental Conservation (NYSDEC) 6 NYCRR Subpart 375 Soil Cleanup Objectives (SCOs) for industrial (fenced areas) and residential (non-fenced areas) sites. Soil samples collected from Underground Injection Control (UIC) features are compared to the Technical and Administrative Guidance Memorandum (TAGM) 4046 SCOs. Groundwater sample results are compared to the Class GA Groundwater Standards/Guidance Values listed in NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1. Analytical results from the Delineation Phase II Site Assessment are summarized in Appendix B. Boring logs generated from the advancement of subsurface soil borings are provided in Appendix C. A concentration map, provided as Figure 3-1, depicts the site-wide mercury and lead concentration data generated from the Initial Investigation and the preliminary Delineation Phase II Site Assessment at the Hempstead Substation. Drawing 2, provided in a map pocket at the end of this section, depicts mercury and lead concentration data generated from the 2009 and 2010 additional delineation samples collected during the Delineation Phase II Site Assessment. The additional delineation soil samples were collected in areas where the greatest mercury and lead concentrations were detected, primarily to the south of the substation building and at the residential properties abutting the substation property to the northwest and southwest.

Below is a discussion of the evaluation of data generated as part of the Delineation Phase II Site Assessment at the Hempstead Substation.

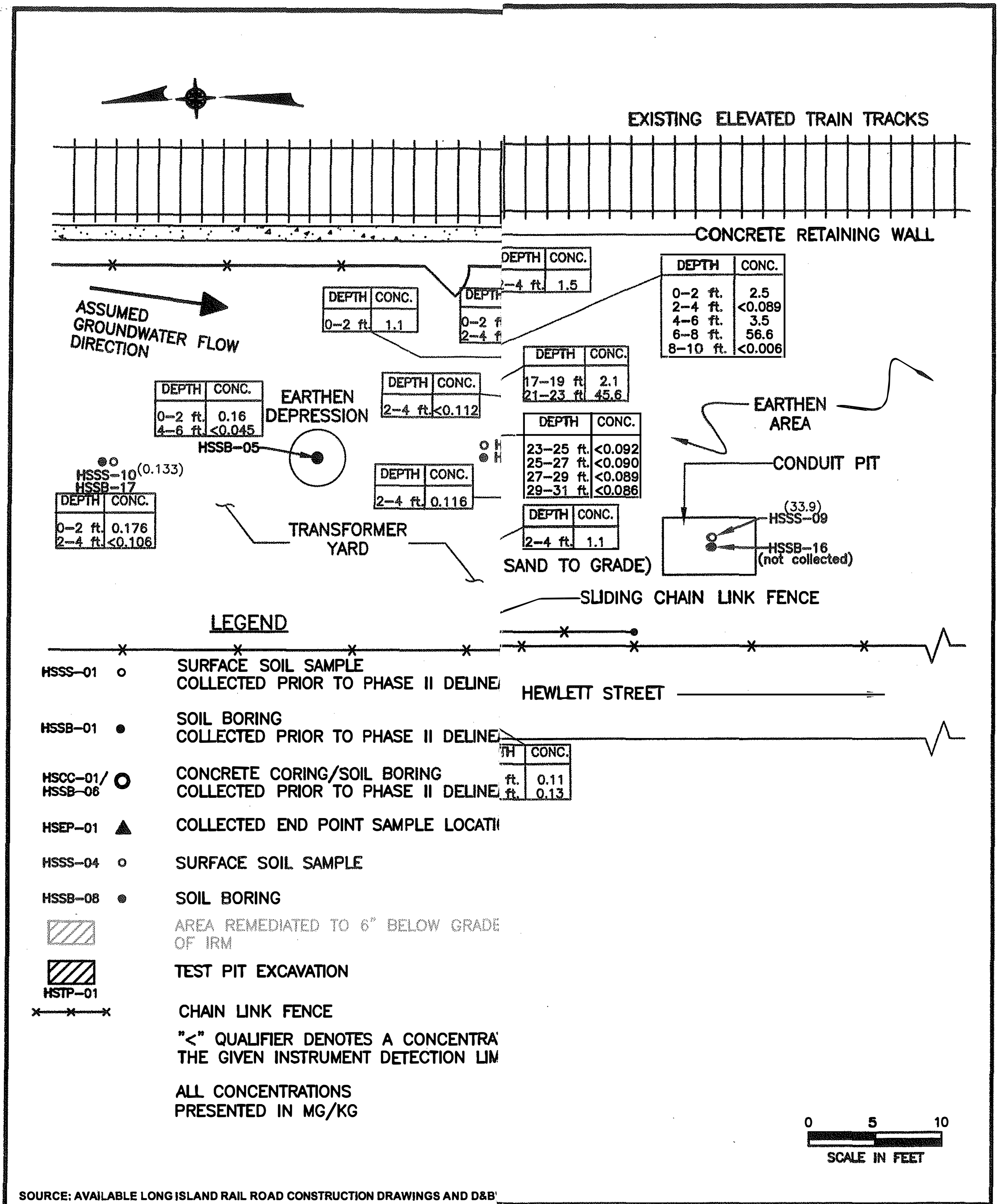

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FIGURE 3-1

3.1 Surface Soil

Metals

A total of 129 surface soil samples were collected for mercury analysis as part of the Delineation Phase II Site Investigation: 68 from outside the fenced substation area, and 61 from within the fenced substation area. Due to the need to compare the sample data to these two separate SCOs, the below discussion has accordingly been organized into two sections, as follows:

Non-Fenced Area

Of the 68 surface soil samples collected in non-fenced areas of the Hempstead Substation, 45 samples were analyzed for mercury. All mercury concentration data associated with the surface soil samples collected from non-fenced (Residential Use SCOs) areas are summarized on Table 1, provided in Appendix B. Of the 45 samples analyzed for mercury, 34 samples exhibited detectable concentrations of mercury in exceedance of the Residential SCO of 0.81 mg/kg, ranging in concentration from 0.961 mg/kg to 17.6 mg/kg. The greatest surface soil mercury concentration was detected in surface soil sample HSSS-127, located in the shrubbery garden area in the front of the residential property located southwest of the substation building.

In addition to mercury, 23 surface soil samples were collected for lead analysis from non-fenced areas of the Hempstead Substation. All lead concentration data associated with the surface soil samples collected from non-fenced (Residential Use SCOs) areas are summarized on Table 2, provided in Appendix B. Of the 23 surface soil samples analyzed for lead, 14 samples exhibited detectable concentrations of lead in exceedance of the Residential SCO of 400 mg/kg, ranging in concentration from 406 mg/kg to 3,320 mg/kg. The greatest surface soil lead concentration was detected in surface soil sample HSSS-71, located approximately 9 feet northwest of the substation building.

Fenced Area

Of the 61 surface soil samples collected in fenced areas of the Hempstead Substation, 57 samples were analyzed for mercury. All mercury concentration data associated with the surface soil samples collected from fenced (Industrial Use SCOs) areas are summarized on Table 3, provided in Appendix B. Of the 57 surface soil samples collected in fenced areas of the Hempstead Substation, 29 samples exhibited detectable concentrations of mercury in exceedance of the Industrial SCO of 5.7 mg/kg, ranging in concentration from 6.6 mg/kg to 1,490 mg/kg. The greatest surface soil mercury concentration was detected in surface soil sample HSSS-37, located approximately 32 feet south of the substation building.

In addition to mercury, four surface soil samples were collected for lead analysis from the fenced area of the Hempstead Substation. All lead concentration data associated with the surface soil samples collected from fenced (Industrial Use SCOs) areas are summarized on Table 4, provided in Appendix B. Two of the four surface soil samples exhibited detectable concentrations of lead in exceedance of the Industrial SCO of 3,900 mg/kg, ranging in concentration from 4,150 mg/kg to 7,080 mg/kg. The greatest surface soil lead concentration was detected in surface soil sample HSSS-53, located approximately 27 feet north of the substation building.

In addition to mercury and lead, four surface soil samples were analyzed for full Resource Conservation and Recovery Act (RCRA) metals. All RCRA metals data associated with the surface soil samples collected from fenced (Industrial Use SCOs) are summarized on Table 5, provided in Appendix B. All RCRA metals, with the exception of silver, were detected in one or more of the four collected surface soil samples; however, no RCRA metal was detected at a concentration exceeding its respective Industrial SCO in any sample.

Semivolatile Organic Compounds

Six surface soil samples were analyzed for semivolatile organic compounds (SVOCs) from fenced areas of the Hempstead Substation. All SVOC data associated with the fenced

(Industrial Use SCOs) surface soil samples are summarized in Table 6, provided in Appendix B. SVOCs were not detected in exceedance of their respective Industrial SCOs, with the exception of benzo(a)pyrene. Two of the six surface soil samples exhibited detectable concentrations of benzo(a)pyrene in exceedance of its Industrial SCO of 1,100 ug/kg, ranging in concentration from 1,200 mg/kg to 3,200 mg/kg. The greatest surface soil benzo(a)pyrene concentration was detected in surface soil sample HSSS-12, located approximately 18 feet north of the substation building.

In addition, and as per the request of the NYSDEC, surface soil samples HSSS-53 and HSSS-54, located along the west fence line in the transformer yard, were also compared to the Residential SCOs. These SVOC data are summarized on Table 7, provided in Appendix B. SVOCs were not detected in exceedance of their respective Residential SCOs in either surface soil sample, with the exception of five polycyclic aromatic hydrocarbons (PAHs) detected in surface soil sample HSSS-54, as follows: benzo(a)anthracene, at a concentration of 1,400 ug/kg, was detected in exceedance of its SCO of 1,000 ug/kg; benzo(a)pyrene, at a concentration of 1,200 ug/kg, was detected in exceedance of its SCO of 1,000 ug/kg; benzo(b)fluoranthene, at a concentration of 2,300 ug/kg, was detected in exceedance of its SCO of 1,000 ug/kg; chrysene, at a concentration of 1,600 ug/kg, was detected in exceedance of its SCO of 1,000 ug/kg; and indeno(1,2,3-cd)pyrene, at a concentration of 690 ug/kg, was detected in exceedance of its SCO of 500 ug/kg. Surface soil sample HSSS-54 is located in the transformer yard, approximately seven feet north of the substation building and along the western transformer yard fence.

Polychlorinated Biphenyls

Four surface soil samples were selected for polychlorinated biphenyls (PCBs) analysis from fenced areas of the Hempstead Substation. All PCB concentration data associated with the surface soil samples are summarized in Table 8, provided in Appendix B. PCBs were not detected in any surface soil sample.

3.2 Subsurface Soil

Metals

A total of 176 subsurface soil samples were collected for mercury analysis as part of the Delineation Phase II Site Investigation: 75 from outside the fenced substation areas, and 101 from within the fenced substation area. Due to the need to compare the sample data to these two separate SCOs, the below discussion has accordingly been organized into two sections, as follows:

Non-Fenced Area

Of the 75 subsurface soil samples collected in non-fenced areas of the Hempstead Substation, 50 samples were analyzed for mercury. All mercury concentration data associated with the subsurface soil samples collected from non-fenced (Residential Use SCOs) areas are summarized on Table 9, provided in Appendix B. Of the 50 subsurface soil samples analyzed for mercury, five samples exhibited detectable concentrations of mercury in exceedance of the Residential SCO of 0.81 mg/kg, ranging in concentration from 1.1 mg/kg to 4.2 mg/kg. The greatest subsurface mercury concentration was detected in subsurface soil sample HSSB-78 (1 to 2 feet), located approximately seven feet southwest of the substation building.

In addition to mercury, 25 subsurface soil samples were collected for lead analysis from non-fenced areas of the Hempstead Substation. All lead concentration data associated with the subsurface soil samples collected from non-fenced (Residential Use SCOs) areas are summarized on Table 10, provided in Appendix B. Lead was not detected at concentrations in exceedance of the Residential SCO for lead of 400 mg/kg in any collected subsurface soil sample.

Fenced Area

Of the 101 subsurface soil samples collected in fenced areas of the Hempstead Substation, 91 samples were analyzed for mercury. All mercury concentration data associated with the subsurface soil samples collected from fenced (Industrial Use SCOs) areas are summarized on Table 11, provided in Appendix B. Of the 91 subsurface soil samples analyzed for mercury, 20 samples exhibited detectable concentrations of mercury in exceedance of the Industrial SCO of 5.7 mg/kg, ranging in concentration from 6.1 mg/kg to 920 mg/kg. The greatest subsurface mercury concentration was detected in subsurface soil sample HSSB-69 (1 to 2 feet), located approximately 31 feet south of the substation building.

In addition to mercury, ten subsurface soil samples were collected for lead analysis from fenced areas of the Hempstead Substation. All lead concentration data associated with the subsurface soil samples collected from fenced (Industrial Use SCOs) areas are summarized on Table 12, provided in Appendix B. Lead was not detected in exceedance of its Industrial SCO of 3,900 mg/kg in any collected subsurface soil sample.

In addition to mercury and lead, eight subsurface soil samples were analyzed for full Resource Conservation and Recovery Act (RCRA) metals. All RCRA metals data associated with the subsurface soil samples collected from fenced (Industrial Use SCOs) are summarized on Table 13, provided in Appendix B. All RCRA metals, with the exception of silver, were detected in one or more of the eight collected subsurface soil samples; however, no RCRA metal was detected at a concentration exceeding its respective Industrial SCO in any sample.

Semivolatile Organic Compounds

Ten subsurface soil samples were analyzed for SVOCs from fenced areas of the Hempstead Substation. All SVOC data associated with the fenced (Industrial Use SCOs) subsurface soil samples are summarized in Table 14, provided in Appendix B. SVOCs were not detected in exceedance of their respective Industrial SCOs, with the exception of benzo(a)pyrene. Benzo(a)pyrene, at a concentration of 2,000 ug/kg, was detected in exceedance of its SCO of 1,100 ug/kg in subsurface soil sample HSSB-20 (0 to 2 feet), located approximately 15 feet north of the substation building.

In addition, and as per the request of the NYSDEC, samples collected from subsurface soil borings HSSB-62 and HSSB-63, located along the west fence line in the transformer yard, were also compared to the Residential SCOs. These SVOC data are summarized in Table 15, provided in Appendix B. SVOCs were not detected in exceedance of their respective Residential SCOs in either collected subsurface soil sample.

Polychlorinated Biphenyls

Eight subsurface soil samples were analyzed for PCBs from fenced areas of the Hempstead Substation. All PCB concentration data associated with the subsurface soil samples are summarized in Table 16, included in Appendix B. PCBs were not detected at concentrations exceeding their respective SCOs in any subsurface soil sample.

3.3 Groundwater

A total of three groundwater samples were collected for chemical analysis from the Hempstead Substation using a Geoprobe groundwater point sampler. These groundwater samples were analyzed for Target Analyte List (TAL) metals (including mercury) and VOCs. All metals and VOC data associated with the groundwater samples collected at the Hempstead Substation are summarized in Tables 17 and 18, respectively, included in Appendix B. Due to the highly turbid nature of the groundwater samples, all samples collected for metals analysis included filtered and unfiltered samples. Below is a discussion of the analytical results:

Metals

Groundwater probes HSGP-02 and HSGP-03 exhibited exceedances of the NYSDEC Class GA standard for mercury of 0.7 ug/l, at 3.78 ug/l and 6.15 ug/l, respectively, in the unfiltered groundwater samples. However, due to the high turbidity of the groundwater samples collected using Geoprobe equipment, the metals data associated with the unfiltered samples will be biased high. Therefore, the filtered samples will more closely represent true metals concentrations in groundwater.

Several other metals including antimony, beryllium, chromium, iron, lead, manganese, nickel and sodium were detected above their respective Class GA Standards in one or more unfiltered groundwater sample. However, these same metals were either not detected or detected at lower concentrations in the filtered groundwater samples. As described above, the metals data associated with the unfiltered samples will be biased high. Therefore, the filtered samples will more closely represent true metals concentrations in groundwater.

In all three filtered groundwater samples, manganese and sodium exceeded their respective Class GA Standards, as well as iron in HSGP-01 and HSGP-03. It should be noted that these metals are not considered contaminants of concern associated with LIRR substation operations. In addition, note that mercury was not detected in any filtered groundwater sample.

Volatile Organics

VOCs were not detected in any groundwater sample collected at the Hempstead Substation.

3.4 Underground Injection Control (UIC) and Below Grade Structures

As described in Section 2.5, five below grade structures were investigated for Underground Injection Control (UIC) applicability as part of the Delineation Phase II Site Assessment. The structures investigated included a communications manhole located approximately seven feet north of the substation building, a conduit pit located approximately 42 feet south of the substation building, a dry well located approximately 4 feet south of the substation building, a dry well located approximately 20 feet south of the substation building and a water meter pit located adjacent to the southwest corner of the substation building. The investigations and analytical sample results are described below:

Communications Manhole

The communications manhole located approximately seven feet north of the substation building was visually inspected for the presence of a solid bottom and discharge piping during the Delineation Phase II Site Assessment. A storm water drain hole was observed in the communications manhole bottom; however discharge piping was not observed in this structure. Therefore, the communications manhole was not designed as a drainage structure, and as such, its primary function is not to accept fluids and is not classified as a UIC structure.

However, one subsurface soil sample (HSSB-15 [0 to 2 feet]) was collected for UIC parameter analysis from the storm water drain hole in this structure. As the communications manhole is not a UIC structure, the sample results were compared to the Industrial SCOs. All data associated with this subsurface soil sample are summarized in Tables 19 through 23, included in Appendix B. No analyte was detected at concentrations exceeding their respective Industrial SCOs, with the exception of benzo(a)pyrene. Benzo(a)pyrene was detected at a concentration of 2,900 ug/kg, exceeding its Industrial SCO of 1,100 ug/kg.

Conduit Pit

The conduit pit located approximately 42 feet south of the substation building was visually inspected for the presence of a solid bottom and discharge piping during the Delineation Phase II Site Assessment. Note that the Initial Investigation indicated that a storm water drain hole was located in this structure; however, a storm water drain hole was not identified during the Delineation Phase II Site Investigation. In addition, discharge piping was not present in this structure. Therefore, the conduit pit is not classified as a UIC structure. One sediment sample (HSSS-09) was collected from the sediment accumulated on the bottom of this structure for mercury analysis and compared to the Industrial SCO for mercury of 5.7 mg/kg. All data associated with this sediment sample is summarized on Table 24, included in Appendix B. Mercury was detected at a concentration of 33.9 mg/kg, exceeding its Industrial SCO of 5.7 mg/kg.

Dry Well Located Approximately 4 Feet South of the Substation Building

An excavation was performed in order to locate a suspected dry well in this area. As no drainage structure is located to the north of the substation building, it is possible that this dry well accepted discharge water from the rectifier pit and/or the water trough pit located in the substation building. The excavation identified a dry well located approximately four feet south of the substation building. Note that, as the dry well accepted discharge water and was constructed with a soil bottom, the dry well is classified as a UIC structure. The dry well was observed to be completely filled with soil and debris. Subsurface soil boring HSTP-01 was advanced in the dry well and five subsurface soil samples were collected from approximately ground level to approximately 10 feet below ground level, in 2-foot continuous intervals for UIC parameter analysis, and compared to the TAGM SCOs. All data associated with these subsurface soil samples are summarized in Tables 25 through 30, included in Appendix B. No analyte was detected at concentrations exceeding their respective TAGM SCOs in any sample, with the exception of mercury and three PAHs: benzo(a)anthracene, benzo(a)pyrene and chrysene. In addition, this structure could have accepted water from the lavatory; however, this is unclear, based on the available LIRR drawings.

Of the five subsurface soil samples collected in the dry well located approximately 4 feet south of the substation building, three samples exhibited detectable concentrations of mercury in exceedance of the TAGM SCO of 0.1 mg/kg, ranging in concentration from 2.5 mg/kg to 56.6 mg/kg. The greatest mercury concentration was detected in subsurface soil sample HSTP-01 (6 to 8 feet). All PAH exceedances were also detected in the 6 to 8-foot sample interval, as follows: benzo(a)anthracene, at a concentration of 930 ug/kg, was detected in exceedance of its TAGM SCO of 224 ug/kg; benzo(a)pyrene, at a concentration of 750 ug/kg, was detected in exceedance of its TAGM SCO of 61.0 ug/kg; and chrysene, at a concentration of 800 ug/kg, was detected in exceedance of its TAGM SCO of 400 ug/kg.

Dry Well Located Approximately 20 Feet South of the Substation Building

In order to further investigate the dry well located approximately 20 feet south of the substation building, one subsurface soil boring (HSSB-03A) was advanced in the dry well and four subsurface soil samples were collected from approximately 25 feet below ground surface to approximately 31 feet below ground surface, in 2-foot continuous intervals for UIC parameter analysis, and compared to the TAGM SCOs. All data associated with these subsurface soil samples are summarized in Tables 25 through 30, included in Appendix B. No analyte was detected at concentrations exceeding its respective TAGM SCO in any collected subsurface soil sample.

Water Meter Pit

In order to further investigate the water meter pit located adjacent to the southwest corner of the substation building, one subsurface soil boring (HSSB-04A) was advanced in the water meter pit and three subsurface soil samples were collected from approximately 10 feet below ground surface to approximately 16 feet below ground surface, in 2-foot continuous intervals for UIC parameter analysis. Note that, although the water meter pit was filled with soil at the time of the investigation, discharge piping is not typically associated with such structures. As such, the water meter pit was not designed as a drainage structure, and is not classified as a UIC structure. Therefore, the soil samples collected from subsurface soil boring HSSB-04A were compared to the Industrial SCOs. All data associated with this subsurface soil sample are summarized in Tables 31 through 36, included in Appendix B. No analyte was detected at concentrations exceeding its respective Industrial SCO in any collected water meter pit subsurface soil sample.

3.5 Waste Characterization

A total of four soil samples were collected for waste characterization analysis in March 2009, in order to "pre-characterize" site soil surrounding the substation building. Sample locations were selected in the field and are depicted on Drawing 2. All waste characterization data are presented in Tables 37 and 38, provided in Appendix B. All waste characterization samples were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals (including mercury), TCLP SVOCs, TCLP VOCs and RCRA waste characteristics (ignitability, reactivity, etc.). Analytical data have been compared to RCRA hazardous waste criteria. Barium, lead, tetrachloroethylene and methoxychlor were detected in one or more of the four collected waste characterization samples. However, no exceedances of the RCRA waste criteria were detected in any collected sample.

3.6 Data Usability Summary Report (DUSR)

Surface soil, subsurface soil, groundwater and waste characterization samples were collected as part of the Delineation Phase II Site Assessment at the LIRR Hempstead Substation, completed in May 2010. The soil samples were primarily analyzed for mercury. Several of the soil samples were analyzed for lead, PCBs, RCRA metals, VOCs and SVOCs. The groundwater samples were analyzed for TAL metals and VOCs. Four waste characterization samples were analyzed for TCLP metals (including mercury), TCLP SVOCs, TCLP VOCs and RCRA waste characteristics (corrosivity, ignitability, reactivity).

Chemtech Laboratories, a subcontractor to D&B, analyzed all samples in accordance with the USEPA SW-846 methods as stipulated in the work plan. The data packages submitted by Chemtech have been reviewed by Ms. Donna Brown, D&B's Quality Assurance/Quality Control (QA/QC) Officer. Ms. Brown meets the NYSDEC requirements of a data validator as listed in the Draft DER-10 Technical Guidance for Site Investigation and Remediation, and her resume is included in Appendix D.

The data packages have been reviewed for completeness and compliance with NYSDEC QA/QC requirements, as well as the requirements for development of Data Usability Summary Reports as listed in Appendix 2B of the Draft DER-10 Technical Guidance for Site Investigations and Remediation dated November 2009. Each data package was reviewed for the following:

- Was a NYSDEC Category B deliverable data package submitted?

- Have all holding times been met?
- Does all QA/QC data fall within QA/QC limits and specifications?
- Were appropriate methods followed?
- Does the raw data conform to that reported on the data summary sheets?
- Have the correct data qualifiers been utilized?

NYSDEC ASP Category B deliverable data packages have been submitted for all sample delivery groups (SDG). The findings of the data review process are summarized below.

All samples were analyzed within the method-specified holding times. All surrogate recoveries, internal standard area counts and spike recoveries were within QC limits. Initial and continuing calibrations were analyzed at the method specified frequency.

The samples were generally analyzed within the method-specified holding times and the calibrations, surrogate recoveries, internal standard areas, laboratory duplicate and spike recoveries were within QC limits, except for the following:

- In SDG T4646: The serial dilution check sample %D was above QC limits for mercury and was qualified as estimated (J/JU) in all samples.
- In SDG T4647: Methylene chloride was qualified as non-detect (U) based on blank results. Numerous SVOCs were above QC limits in continuing calibrations and qualified as estimated (J/UJ). TPHs exhibited a surrogate above QC limits and were qualified as estimated (J). Several metals were detected in preparation blank and qualified as non-detect (U). Several metals had serial dilution check sample %D and duplicate RPD above QC limits and were qualified as estimated (J).
- In SDG T4648: Numerous SVOC were above QC limits in continuing calibrations or exhibited surrogates outside QC limits and were qualified as estimated (J/UJ). Metals were detected in preparation blank and qualified as non-detect (U). Several metals had serial dilution check sample %D, spike %R and duplicate RPD outside QC limits and were qualified as estimated (J).
- In SDG T4649: Several SVOCs were detected above QC limits in continuing calibrations and/or had spike %R outside QC limits and were qualified as estimated (J/UJ). Aroclor spike %R was detected outside QC limits and was qualified as

estimated (J). Several metals were detected in preparation blank and qualified as non-detect (U). Several metals exhibited serial dilution check sample %D and spike %R outside QC limits and were qualified as estimated (J).

- In SDGs X1803 and X2366: Holding times for VOCs, SVOCs and PCBs were exceeded and all results were qualified as estimated (J/UJ). Mercury and barium spike %R were detected outside QC limits and qualified as estimated (J).

- In SDGs A1965, A4113, A4114 and A5678: Mercury was qualified as estimated (J/UJ) due to the %Rs being detected outside QC limits in the spike sample.

- In SDG A1966: TCLP selenium was qualified as non-detect based on blank results. Mercury was qualified as estimated (J/UJ) due to the %Rs being detected outside QC limits in the spike sample.

- In SDG A1967: TCLP selenium was qualified as non-detect based on blank results. Mercury and lead were qualified as estimated (J/UJ) due to matrix spike being below QC limits and field duplicate being detected above limits.

- In SDGs A1968 and A3129: Mercury was qualified as estimated (J/UJ) due to the %Ds being detected outside QC limits in the serial dilution and RPD being detected outside QC limits.

- In SDG A1971: Mercury and lead were qualified as estimated (J/UJ) due to field duplicate results.

- In SDG A2868: Mercury was qualified as non-detect (U) in subsurface soil sample HSSB-71(1-2) based on blank results.

- In SDG A5019: Mercury was qualified as estimated (J/UJ) in all samples due to the %Ds being detected above QC limits in the serial dilution.

- In SDG A5022: Lead was qualified as estimated (J/UJ) in all samples due to the %Ds being detected above QC limits in the serial dilution. Mercury was qualified as estimated (J/UJ) in all samples due to the %Rs being detected above QC limits in the spike sample.

- In SDG A5677: Lead and mercury were qualified as estimated (J/UJ) in all samples due to the %Ds being detected above QC limits in the serial dilution. Mercury was qualified as estimated (J/UJ) in all samples due to the %Rs being detected below QC limits in the spike sample.

- In SDG B1279: Mercury was qualified as estimated (J/UJ) in all samples due to the %Ds being detected above QC limits in the serial dilution and the %Rs being detected below QC limits in the spike sample.

No other problems were found with the sample results. All results have been deemed valid and usable, as qualified above, for environmental assessment purposes.

Section 4

4.0 QUALITATIVE EXPOSURE ASSESSMENT

4.1 Introduction

The purpose of this exposure assessment is to determine how and when an individual may be exposed to contaminants of potential concern (COPCs) associated with the LIRR Hempstead Substation. A COPC is any chemical detected above the NYSDEC cleanup guidelines in a medium, which could produce adverse health effects under the right conditions of dose and exposure. For exposure to occur, there must be a complete "pathway of exposure" where a person can come into contact with contaminants of potential concern. For a pathway to be complete, there must be: 1) a source or medium containing the COPC; 2) a location where human contact could take place (i.e., an exposure point); and 3) a feasible means for the COPC to enter into the person's body. In the case of the LIRR substations, there would be two types of potential receptors, with personnel who work at the facilities considered on-site receptors and individuals who may live or be in close proximity to the substation properties considered off-site receptors. The person who could come into contact with the COPC at an exposure point is called a "receptor." The ways in which the COPC can enter the body are called "routes of exposure." Ingestion (by mouth), dermal (contact with skin) and inhalation (breathing into the lungs) are the routes of exposure considered in this and other human health risk assessments. Consistent with the New York State Department of Health (NYSDOH) and other regulatory agencies, this assessment considers both current and potential future exposures.

As with any exposure assessment, this assessment is not intended to predict disease outcome, but rather, is meant to be used as a tool to make decisions regarding the need for remediation or the institution of precautionary measures, such as limiting the affected area to nonresidential land uses. Given the available information and keeping the purpose of the assessment in mind, the following evaluation for the Hempstead Substation is qualitative in nature.

4.2 Properties, Fate and Transport of COPCs at the Hempstead Substation

Based on the results of the completed investigations of the Hempstead Substation, the COPCs are mercury (Hg) and lead (Pb). The following is a summary of the fate and transport properties of mercury and lead in surface and subsurface soil:

4.2.1 Mercury

The mercury (Hg) found at the Hempstead Substation is assumed to have entered the soil in the form of liquid elemental mercury that was utilized in mercury-containing rectifiers. Elemental mercury (Hg^0) is a heavy, silver-white metal with a specific gravity approximately 13.5 times that of water and is the only metal to exist in the liquid phase at room temperature. Hg^0 has a relatively high vapor pressure and is the most volatile of all metals. Overall, however, it is considered only slightly volatile when compared to most liquids. Hg^0 volatilizes into a colorless, odorless and tasteless gas.

Mercury is a naturally occurring element that has been distributed throughout the environment by natural processes. Mercury exists in three possible oxidation states: elemental (Hg^0), mercurous (Hg^{1+}), and mercuric (Hg^{2+} or Hg[II]). Atmospheric deposition to the surface from anthropogenic and natural air emissions is considered a major source of mercury in the environment and is primarily in the form of Hg(II), either during precipitation events or adsorbed onto airborne particulates. The mercurous and mercuric forms of mercury will complex and form numerous organic and inorganic compounds. Hg(II) is commonly found as mercuric sulfide (HgS), a stable inorganic species that is essentially insoluble in water and is therefore considered a major long-term sink for mercury in soil. Moderately soluble forms of Hg(II), such as mercuric chloride ($HgCl_2$), can potentially contaminate surface soil and groundwater. Both the mercurous and mercuric forms of mercury will adsorb to clay minerals, oxides and organic matter and tend not to leach. Methylmercury (MeHg) is the most widespread organic form of mercury in the environment and is formed from the methylation of inorganic mercury by bacteria in aquatic environments. Methylation is generally negligible in terrestrial soil.

Liquid elemental mercury has a tendency to form globules or beads and therefore is generally not uniformly distributed among soil particles. It will sink under the force of gravity and split up into available pore spaces. Despite this fact, Hg^0 is only slightly soluble in water and, therefore, is unlikely to leach into groundwater via infiltrating precipitation. In fact, spills of liquid mercury to shallow subsurface soil have been found to be persistent in this environment. Elemental mercury is assumed to be removed from unsaturated soil primarily through its potential to volatilize to the soil vapor and the outside air. Although liquid mercury is volatile, the volatilization process is not rapid and globules of Hg^0 may persist for a long time before completely volatilizing. In addition, mercury globules can become coated with a stable layer of insoluble HgS, especially in anaerobic conditions, and can remain inert for long periods of time. Mercury vapor released to the outdoor air will dissipate rapidly into the atmosphere.

4.2.2 Lead

Lead is a naturally occurring tasteless and odorless element that has been distributed throughout the environment by anthropogenic and natural processes. Atmospheric deposition to the ground surface is considered a major source of anthropogenic lead in the environment. Pure lead is a soft bluish-white malleable and corrosive resistant material. Lead is a component of the earth's crust, however it is rarely found free in nature. Lead is generally mined from several ores: most commonly galena or lead sulfide (PbS). Lead is typically refined by roasting or smelting galena or PbS.

Historically, lead has been used for water and sewer pipes, as an additive in gasoline, and as a liner in tanks used to store corrosive liquids. However, the majority of the lead used today is used in the production of lead-acid storage batteries. Lead has been and is still commonly used in industrial construction, especially for roofing cornices, electrical conduits and as an additive in paint for a variety of surfaces, and can be found on bridges, industrial structures, and the interior and exterior of steel structures. Note that there are no federal restrictions on the use of lead-based paint for industrial purposes. Over time, the deterioration of lead-based paint on industrial structures may cause paint to chip or peel. In addition, blasting or grinding lead-based paint off of steel structures may cause lead dust to become airborne. In both cases, lead may be released into the environment and has the potential to cause environmental and/or health hazards.

Lead dissolves slowly in water and in most cold acids; however it will react more rapidly with hot acids. Water with a pH below 6.6, or above 8.5 will increase the rate at which lead may dissolve. In addition, the period of time that lead is in contact with water may also affect the rate at which lead is dissolved. Lead can leach from soil or rock into filtrating groundwater; however, at a pH value above 6, lead is either adsorbed on clay surfaces or forms lead carbonate. Transportation of lead in water is dependent upon its chemical species, and its ability to form complexes with chloride, hydroxyl and organics. Lead attaches more readily to this matter, which may prevent lead from being transported throughout the soil profile.

4.3 General Substation Conditions

This section briefly describes the current and future conditions of the Hempstead Substation. The Hempstead Substation has been used by the LIRR to convert alternating current (AC) to direct current DC for use in powering the LIRR's electric train fleet. As discussed in Section 1.1, the substation had been used for this purpose since 1948. The substation is not currently active, as a replacement substation has been constructed to the east of the rail tracks.

The Hempstead Substation is located in a residential area; however, the substation property is only accessible by authorized LIRR personnel and their contractors. In addition, the substation is not occupied by LIRR personnel on a continuous or full-time basis. Under normal operating conditions, access to the substation property only occurs when equipment requires monitoring, maintenance or repair. The substation building is locked at all times and all associated outside electrical equipment (i.e., transformers) are secured by a locked fence. In addition, the property surrounding the substation is bounded by track to the east, residential property to the west, a LIRR right-of-way to the south and a Long Island Power Authority (LIPA) right-of way to the north. The substation property is fenced on all sides, limiting public access to the property. The areas immediately surrounding the substation building are partially covered by crushed stone. The transformer yard, located to the north of the substation building is covered with approximately two inches of crushed stone/clinker, surrounding the electrical equipment.

The Hempstead substation is serviced by public water and on-site groundwater is not used for any purpose.

As part of the LIRR's overall system upgrade in response to increased ridership, the Hempstead Substation will be decommissioned and demolished as part of future LIRR Capital Programs. As part of the decommissioning, all electrical transformers and equipment will be removed from the site. Upon completion of the substation remediation, the LIRR will demolish the substation building and will not be disturbing or excavating in the Hempstead Substation property for the foreseeable future. Note, a new substation building has already been constructed to the east of the rail tracks.

While elevated mercury concentrations have been detected in surface and subsurface soil surrounding the substation building, to the west of the substation property and in several below grade structures, and elevated lead concentrations have been detected in surface soil to the north and west of the substation building, the LIRR maintains strict control over conducting soil excavation activities within LIRR properties known to contain contaminants in order to avoid the excavation and handling of contaminated soil without undertaking appropriate health and safety measures. The LIRR Procedure/Instruction EE03-001, which defines the procedures that must be undertaken prior to conducting excavation activities at LIRR properties, is provided as Appendix E.

4.4 Surface and Subsurface Soil

Elevated concentrations of mercury have been detected in surface and subsurface soil surrounding the substation building, to the west of the substation property and in several below grade structures. The highest mercury concentrations were detected in surface soil located to the south of the substation building, with a maximum mercury concentration of 1,490 mg/kg. In addition, note that elevated concentrations of mercury were detected in surface and subsurface soil at the residential properties located to the northwest and southwest of the substation property. The highest residential mercury concentrations were detected in surface soil at the residential property located to the southwest of the substation building, with a maximum mercury concentration of 17.6 mg/kg.

Elevated concentrations of lead were detected in surface soil to the north and east of the substation building. The highest lead concentrations were detected in surface soil located to the northwest of the substation building, with a maximum lead concentration of 7,080 mg/kg. In addition, note that elevated concentrations of lead were detected in surface soil at the residential property located to the northwest of the substation property, with a maximum lead concentration of 3,320 mg/kg.

Note that portions of the areas surrounding the substation are not completely covered with crushed stone; therefore, direct exposure to site contamination of LIRR workers and subcontractors (on-site receptors) who are required to periodically enter the site for equipment maintenance and repair is possible in uncovered areas. In addition, LIRR workers, subcontractors and the public (off-site receptors) could be potentially exposed to this contaminant source during excavation activities as the result of dermal contact and inhalation of windblown dust. However, as discussed above, the LIRR has in place procedures to avoid the excavation and handling of contaminated soil without undertaking appropriate health and safety measures. In addition, concentrations of mercury and lead have been detected in exceedance of the Residential SCOs in the two residential properties located to the northwest and the southwest of the substation property; however, the majority of the areas where these contaminants were identified in exceedance of the Residential SCOs are covered by a maintained lawn, limiting public exposure and contaminant mobility. Due to the exposed soil located in some on-site and off-site areas, as detailed above, it is possible for the public to be exposed to off-site site contaminants via the inhalation of windblown dust particulates and via dermal contact during periods of high wind.

As discussed above, the Hempstead Substation property is secured on all sides, limiting the potential of trespassers entering the site. However, due to the exposed nature of limited areas of soil as described above, it is possible for the public to be exposed to on-site and off-site contamination via the inhalation of windblown dust particulates during periods of high wind and via dermal contact. However, as stated above, the substation property is generally covered by crushed stone and the residential properties to the west of the substation building are generally covered in a maintained lawn, limiting the potential for on-site and off-site soil to become airborne.

4.5 Groundwater

As discussed in Section 3.3, groundwater has not been adversely impacted by the presence of mercury in on-site soil. In addition, on-site groundwater is not used as a potable water source or for any other uses. Therefore, groundwater is not considered a potential exposure pathway.

4.6 Air

VOCs were not detected in site soil. As a result, inhalation of contaminants released to the air through volatilization of contaminants from surface soil and subsurface soil does not represent a potential exposure pathway for on-site or off-site receptors. While the volatilization of mercury present in the surface and subsurface soil can occur, the volatilization process occurs at a very slow rate and inhalation of mercury vapor from on-site sources is not expected to be a significant exposure pathway. Inhalation of windblown dust of surface soil does represent a potential for exposure to on-site and off-site receptors. However, as discussed above, the majority of the areas exhibiting exceedances of their respective Residential and Industrial SCOs are generally covered in approximately 2 inches of crushed stone and/or a maintained lawn, limiting the potential for soil in these areas to be disturbed or become airborne. In addition, as stated above, the LIRR has in place procedures to avoid the excavation and handling of contaminated soil without undertaking appropriate healthy and safety measures.

4.7 Future Use of the Hempstead Substation

As part of the LIRR's overall system upgrade in response to increased ridership, the Hempstead Substation will be decommissioned and demolished as part of future LIRR Capital Programs. Subsequent to the substation building demolition and remedial excavation activities, endpoint samples will be collected from the former building footprint, biased toward areas where former drainage features were present, to determine the characteristics of the remaining soil prior to site restoration and to ensure the removal of mercury and lead contaminated soil. Remediation of site soil and below grade structures will be completed in two separate phases in order to facilitate the building demolition activities and the removal of on-site equipment, as will be further detailed in the upcoming Remedial Action Work Plan (RAWP) for the site. As described above, a new substation building has been constructed to the east of the rail tracks. After remediation, the LIRR will not be disturbing or excavating in the Hempstead Substation property for the foreseeable future. Note that a mercury vapor survey, consistent with the NYSDOH's Soil Vapor Intrusion Guidance (SVIG), was completed in the existing substation building in November 1999. Results of the survey are provided in Appendix F.

The mercury vapor evaluation consisted of a 27-pont mercury vapor survey, with 17 mercury vapor sample locations collected surrounding the exterior of the substation building and 10 mercury vapor sample locations collected from the interior of the substation building. All vapor samples were collected with a Jerome 431X mercury vapor analyzer (MVA) and have been re-evaluated and compared to the Public Employee Safety and Health (PESH) 8-hour time weighted average (TWA) concentration of 0.050 mg/m^3. Mercury vapor was detected in one mercury vapor sample, which was collected in the dry well located approximately 20 feet south of the substation building. This mercury vapor sample exhibited a mercury vapor concentration of 0.040 mg/ m^3, below the PESH TWA of 0.050 mg/m^3. Therefore, further investigation of mercury vapor at the Hempstead Substation property is not warranted.

The LIRR intends to remediate the most significant mercury and lead contamination identified at and in the vicinity of the site by excavation and off-site disposal. Therefore the planned decommissioning of the Hempstead Substation and remediation of the substation and surrounding properties will remove the most significant soil contamination, and as a result future exposure to mercury and lead contamination at and in the vicinity of the Hempstead Substation site is not expected.

Section 5

5.0 CONCLUSIONS AND RECOMMENDATIONS

This section presents a discussion of the conclusions and recommendations associated with the investigation of the Hempstead Substation. Note that the conclusions and recommendations presented take into consideration the findings of the Qualitative Human Health Exposure Assessment presented in Section 4.0, as well as the intended future use of the Hempstead Substation site.

Upon receiving NYSDEC approval of the recommendations for site remediation presented in this investigation report, the LIRR intends to quickly proceed with development of a Remedial Action Work Plan (RAWP) which will detail the selected remedial technologies that will be used to remediate the Hempstead Substation.

5.1 Nature and Extent of Contamination

Mercury was detected in surface and shallow subsurface soil at the Hempstead Substation. Elevated concentrations of mercury were detected in surface and subsurface soil to the north and south of the substation building, in the conduit pit and the two dry wells located south of the substation building, and in the residential properties located to the northwest and southwest of the substation building. The highest mercury concentrations were detected in surface soil located to the south of the substation building, with a maximum mercury concentration of 1,490 mg/kg. In addition, note that elevated concentrations of mercury were detected in surface soil at the residential properties located to the northwest and southwest of the substation property, with a maximum mercury concentration of 17.6 mg/kg detected in surface soil at the residential property located to the southwest of the substation building.

Lead was detected in several surface soil samples collected from the transformer yard, with the highest lead concentrations detected in surface soil located to the north of the substation building, with a maximum lead concentration of 7,080 mg/kg. In addition, note that elevated concentrations of lead were detected in surface soil at the residential property located to the northwest of the substation property, with a maximum lead concentration of 3,320 mg/kg detected in surface soil in this area.

Groundwater has not been impacted by the presence of mercury in on-site soil.

The substation property is bounded by track to the east, a LIRR right-of-way to the south and a LIPA right-of way to the north. The substation property is fenced on all sides, limiting public access to the property. Note that a residential area bounds the substation to the west. The areas immediately surrounding the substation building are partially covered by crushed stone and the transformer yard, located to the north of the substation building is covered with approximately 2 inches of crushed stone/clinker, surrounding the electrical equipment. Therefore, direct exposure to mercury contamination of LIRR workers (on-site receptors) who are required to periodically enter the site for equipment maintenance and repair is possible. LIRR workers, contractors and the public could be potentially exposed to this contaminant source during excavation activities as the result of dermal contact and inhalation of windblown dust. However, as discussed in Section 4.3, the LIRR has in place procedures to avoid the excavation and handling of contaminated soil without undertaking appropriate health and safety measures.

In addition, the majority of the residential areas to the west of the substation building where mercury and lead were detected in exceedance of the Residential SCOs are covered in a maintained lawn; however, limited areas of soil are exposed in each residential property. Therefore, it is possible for the public to be exposed to these contaminants in limited off-site areas as the result of dermal contact and inhalation of windblown dust.

5.2 Recommendations

As part of the LIRR's overall system upgrade in response to increased ridership, the Hempstead Substation will be decommissioned and demolished as part of future LIRR Capital Programs. Subsequent to the substation building demolition and remedial excavation activities, endpoint samples will be collected from the former building footprint to determine the characteristics of the remaining soil prior to site restoration and to ensure the removal of mercury and lead contaminated soil. Remediation of site soil and below grade structures will be completed in two separate phases in order to facilitate the building demolition activities and the removal of on-site equipment, as will be further detailed in the upcoming Remedial Action Work Plan (RAWP) for the site. As described above, a new substation building has been constructed to the east of the rail tracks. After remediation, the LIRR will not be disturbing or excavating in the Hempstead Substation property for the foreseeable future. Therefore, the planned decommissioning and demolition of the Hempstead Substation and remediation of on-site and off-site soil will remove the most significant soil contamination, and as a result, future exposure to mercury and lead contamination at and in the vicinity of the Hempstead Substation site is not expected.

Note that a mercury vapor survey, consistent with the NYSDOH's SVIG, was completed in the existing substation building in November 1999. Results of the survey are provided in Appendix F. As detailed in Section 4.7, further investigation of mercury vapor at the Hempstead Substation property is not warranted.

As discussed previously, upon approval of the recommendations described below, the LIRR intends to proceed with the development of a RAWP that will fully detail the methods and procedures that will be employed by the LIRR in order to execute the recommendations presented below. In addition, the RAWP will include provisions for a Community Air Monitoring Plan (CAMP) to be included in the Contractor Health and Safety Plan (CHASP) to be submitted by the remedial contractor to the LIRR and the NYSDEC for review and approval. Note that, as will be stated in the RAWP, the CAMP will comply with the requirements of the New York State Department of Health (NYSDOH) Generic CAMP, which will also be included in the RAWP.

<u>On-Site and Off-Site Soil</u>

In order to remediate the highest mercury and lead concentrations detected in on-site and off-site soil at the Hempstead Substation, excavations will occur in general around the substation, both on-site and off-site. Soil will be excavated to depths ranging from 1 to 8 feet below ground surface, as depicted on Drawing 3.

Due to the irregular distribution of mercury and lead in on-site and off-site soil, the remedial excavations of soil exhibiting elevated mercury concentrations have been divided into three 1-foot excavation areas, three 2-foot excavation areas, two 4-foot excavation areas and one 8-foot excavation area. The proposed 1-foot excavations are approximately 3,041 square feet in total area, and will require the excavation of approximately 113 cubic yards of soil. The proposed 2-foot excavations are approximately 727 square feet in total area, and will require the excavation of approximately 54 cubic yards of soil. The proposed 4-foot excavations are approximately 256 square feet in total area, and will require the excavation of approximately 38 cubic yards of soil. The proposed 8-foot excavation is approximately 172 square feet in total area, and will require the excavation of approximately 51 cubic yards of soil.

These areas are approximately 4,196 square feet in total area, and will require the excavation of a combined total of approximately 256 cubic yards of soil. Note that the 1-foot excavation areas located at the southwest residential property and at the south side of the substation building will remove all soil to 1-foot below grade up to the sidewalk and Hewlett Street, respectively, effectively removing all potentially contaminated soil in these areas. In addition, note that, due to the likely presence of underground utilities to the east of the substation building, the remediation of soil in this area will be accomplished with hand tools and vacuum excavation. After removal of the soil, post excavation samples will be collected for mercury and lead analysis, as appropriate, in order to document the effectiveness of the remediation and any residual mercury and/or lead remaining. In addition, side wall samples for mercury analysis will be collected to the south of surface soil sample location HSSS-139 (located in the southeast portion of the southwestern residential property), to the north of surface soil samples HSSS-97 and HSSS-105 (located in the northeast portion of the southwestern residential property) and HSSS-91 (located adjacent to the east side of the substation building). After excavation, the remediated areas will be backfilled with clean fill meeting the requirements of the Industrial and Residential SCOs, at a minimum and as appropriate.

Note that, in addition to on-site and off-site soil remediation, the LIRR intends to close and/or remediate soil associated with the conduit pit, the two dry wells, the rectifier pit, the water trough pit and the water meter pit, as described below:

Conduit Pit

Due to a mercury concentration of 33.9 mg/kg detected in the sediment in the conduit pit located approximately 42 feet south of the substation building, the LIRR recommends that the sediment be removed from this structure and the structure be removed and disposed of. It is anticipated that a negligible amount of sediment will require removal from this structure. As the conduit pit is a solid-bottom structure, the collection of a post excavation soil sample following its removal is not warranted. The former conduit pit area will then be backfilled with clean fill to grade.

Dry Well Located Approximately 4 Feet South of the Substation Building

Due to a mercury concentration ranging from 2.5 mg/kg to 56.6 mg/kg detected from 0 to 8 feet below grade within the dry well, the LIRR recommends that soil be removed from this structure to a depth of 8 feet below grade. Note that this dry well was completely filled with sediment to grade, and mercury was not detected in the subsurface soil sample interval collected from 8 to 10 feet below grade within the dry well. In addition, the support rings and cover will be removed and disposed of and the discharge piping extending from the substation building will be plugged with a concrete cap. It is anticipated that approximately 19 cubic yards of soil will be removed from this structure. As the 8 to 10-foot sample interval did not exhibit exceedances of any TAGM SCOs, post excavation soil samples are not warranted to be collected following the dry well well excavation and removal. The dry well will then be backfilled with clean fill to grade.

Dry Well Located Approximately 20 Feet South of the Substation Building

Due to a mercury concentration ranging from 2.1 mg/kg to 45.6 mg/kg detected from 17 to 23 feet below grade in the dry well located approximately 20 feet south of the substation building, the LIRR recommends that soil be removed from this structure to a depth of 23 feet below the grade, or as much as is safely possible. Note that mercury was not detected in the subsurface soil sample interval collected from 23 to 25 feet below grade. In addition, the support rings and cover will be removed and disposed of and the discharge piping extending from the substation building will be plugged with a concrete cap. It is anticipated that approximately 30 cubic yards of soil will be removed from this structure. As the 23 to 25-foot sample interval did not exhibit exceedances of the TAGM SCOs, post excavation soil samples are not warranted to be collected following the dry well well excavation and removal. The dry well will then be backfilled with clean fill to grade.

Rectifier Pit

Due to a mercury concentration of 13.8 mg/kg detected from 0 to 2 feet below grade in the rectifier pit located in the substation building, the LIRR recommends that soil be removed from this structure to a depth of 4 feet below the pit bottom, as described below. Note, in order to facilitate sample collection, the rectifier has already been removed from the rectifier pit. The closure procedures utilized to remediate the rectifier pit will be conducted in accordance with all USEPA and NCDOH UIC regulations.

The northern 2-foot section of the rectifier pit will be saw cut. The drain and associated concrete within the saw cut will be demolished and removed. Vacuum extraction will be used to remove soil to a depth of 4 feet below the saw cut bottom, or as much as is safely possible, without undermining the substation foundation.

One post excavation sample will be collected from the bottom of the saw cut and will be analyzed for PCBs, RCRA metals, total petroleum hydrocarbons (TPHs), total VOCs and total

SVOCs. Following sample collection, the excavation will be backfilled with clean fill to the rectifier pit bottom.

Water Meter Pit

Due to a mercury concentration of 8.3 mg/kg detected from 4 to 6 feet below grade in the water meter pit located on southwest corner of the substation building, the LIRR recommends that soil be removed from this structure to a depth of 8 feet below grade. Note that mercury was detected below the Industrial SCO of 5.7 mg/kg in the sample interval collected from 8 to 10 feet below grade. As such, post excavation soil samples are not warranted to be collected following the water meter pit remediation. The water meter pit will then be backfilled with clean fill to grade.

Water Trough Pit

Due to a mercury concentration of 1.7 mg/kg detected from 0 to 2 feet below grade and 0.39 mg/kg detected from 4 to 6 feet below grade in the water trough pit located in the substation building, the LIRR recommends that soil be removed from this structure to a depth of 4 feet below the pit bottom, as described below. The closure procedures utilized to remediate the rectifier pit will be conducted in accordance with all USEPA and NCDOH UIC regulations.

The northern 2-foot section of the water trough pit will be saw cut. The drain and associated concrete within the saw cut will be demolished and removed. Vacuum extraction will be used to remove soil to a depth of 4 feet below the saw cut bottom, or as much as is safely possible, without undermining the substation foundation.

As mercury concentrations were detected below the Industrial SCO for mercury of 5.7 mg/kg in the soil samples collected from 0 to 2 feet and 4 to 6 feet below the pit bottom, post excavation sampling is not warranted following remediation of this structure.

As stated above, upon approval of the recommendations described above, the LIRR intends to quickly proceed with the development of a RAWP that will fully detail the methods and procedures that will be employed by the LIRR in order to execute the above recommendations. In addition, the RAWP will include provisions for a Community Air Monitoring Plan (CAMP) to be included in the Contractor Health and Safety Plan (CHASP) to be submitted by the remedial contractor to the LIRR and the NYSDEC for review and approval. Note that, as will be stated in the RAWP, the CAMP will comply with the requirements of the NYSDOH Generic CAMP, which will also be included in the RAWP.

In addition, to the above-described site remediation, and in order to further protect the community and LIRR employees, the LIRR has elected to file a Declaration of Covenant and Restrictions for the Hempstead Substation property, which will be provided in an upcoming Site Management Plan.

Appendix A

APPENDIX A

EXISTING INITIAL SITE ASSESSMENT AND IRM ENDPOINT ANALYTICAL DATA

TABLE D-10A

LONG ISLAND RAIL ROAD SUBSTATION INVESTIGATION
SOIL BORING SAMPLING RESULTS - HEMPSTEAD-H03
MERCURY

LOCATION	Southwest, Between Sliding Chain-Link Fence Entrance		South of South Front Entrance Substation Doors		South Dry Well			
SAMPLE ID	**HSSB-01**	**HSSB-01**	**HSSB-02**	**HSSB-02**	**HSSB-03**	**HSSB-03**	**Instrument Detection Limits**	**Eastern USA Background Levels[1]**
SAMPLE DEPTH (ft.)	**0-2**	**4-6**	**0-2**	**4-6**	**17-19**	**21-23**		
DATE OF COLLECTION	1/20/00	1/20/00	1/20/00	1/20/00	1/20/00	1/20/00		
PERCENT SOLIDS	84	91	83	84	97	96		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Mercury	0.11	0.13	0.11 B	0.11	2.1	45.6	0.1	0.001-0.2

<u>NOTES:</u>

(1) Background level for mercury provided in NYSDEC TAGM 4046 Appendix A.

<u>QUALIFIERS:</u>

B: Constituent concentration is less than the CRDL, but greater than the IDL.

TABLE D-10A (continued)

LONG ISLAND RAIL ROAD SUBSTATION INVESTIGATION
SOIL BORING SAMPLING RESULTS - HEMPSTEAD-H03
MERCURY

LOCATION	Southwest Exterior Water Meter Pit		Depression, North of Substation Inside Transformer Yard		Water Trough Pit			
SAMPLE ID	HSSB-04	HSSB-04	HSSB-05	HSSB-05	HSSB-06	HSSB-06	Instrument	Eastern USA
SAMPLE DEPTH (ft.)	4-6	8-10	0-2	4-6	0-2	4-6	Detection	Background
DATE OF COLLECTION	1/20/00	1/20/00	1/20/00	1/20/00	1/21/00	1/21/00	Limits	Levels[1]
PERCENT SOLIDS	96	97	78	96	85	98		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Mercury	8.3	1.2	0.16	0.045 U	1.7	0.39	0.1	0.001-0.2

NOTES:

[1] Background level for mercury provided in NYSDEC TAGM 4046 Appendix A.

QUALIFIERS:

U: Constituent analyzed for but not detected.

TABLE D-10A

LONG ISLAND RAIL ROAD SUBSTATION INVESTIGATION
SOIL BORING SAMPLING RESULTS - HEMPSTEAD-H03
MERCURY

LOCATION	Rectifier Pit							
SAMPLE ID SAMPLE DEPTH (ft.) DATE OF COLLECTION PERCENT SOLIDS UNITS	**HSSB-07** **0-2** 1/21/00 91 (mg/kg)	**HSSB-07** **2-4** 1/21/00 92 (mg/kg)	**HSFB-01** **----** 1/21/00 ---- (ug/L)				**Instrument Detection Limits** (ug/L)	**Eastern USA Background Levels[1]** (mg/kg)
Mercury	13.8	1.7	0.29				0.1	0.001-0.2

NOTES:

[1] Background level for mercury provided in NYSDEC TAGM 4046 Appendix A.

----: Not applicable.

TABLE D-10B

LONG ISLAND RAIL ROAD SUBSTATION INVESTIGATION
SURFACE SOIL SAMPLING RESULTS - HEMPSTEAD-H03
MERCURY

LOCATION	East of South Front Entrance Substation Doors	West of South Front Entrance Substation Doors	Northeast Communi-cations Cable Pit					
SAMPLE ID SAMPLE DEPTH (in.) DATE OF COLLECTION PERCENT SOLIDS UNITS	**HSSS-01** **0-6** 1/20/00 84 (mg/kg)	**HSSS-02** **0-6** 1/20/00 92 (mg/kg)	**HSSS-03** **See Notes[2]** 1/20/00 87 (mg/kg)				**Instrument Detection Limits** (ug/L)	**Eastern USA Background Levels[1]** (mg/kg)
Mercury	236	198	3.1				0.1	0.001 - 0.2

NOTES:

[1] Background level for mercury provided in NYSDEC TAGM 4046 Appendix A.

[2] Sample collected between 5-6 feet below grade surface.

TABLE D-10C

LONG ISLAND RAIL ROAD SUBSTATION INVESTIGATION
CONCRETE CORE SAMPLING RESULTS - HEMPSTEAD-H03
MERCURY

LOCATION	Water Trough Pit	Rectifier Pit					
SAMPLE ID	**HSCC-01**	**HSCC-02**	**HSFB-02**				**Instrument**
DATE OF COLLECTION	1/21/00	1/21/00	1/21/00				**Detection**
PERCENT SOLIDS	89	100	----				**Limits**
UNITS	(mg/kg)	(mg/kg)	(ug/L)				(ug/L)
Mercury	4.8	52.8	0.16 B				0.1

NOTES:
----: Not applicable.

QUALIFIERS:
B: Constituent concentration is less than the CRDL, but greater than the IDL.

TABLE 4-9

LONG ISLAND RAIL ROAD SUBSTATION IRM
ENDPOINT SAMPLING RESULTS - HEMPSTEAD-H03
MERCURY

SAMPLE ID	HSEP-01	HSEP-02	Instrument Detection Limits	Eastern USA Background Levels[1]
SAMPLE DEPTH (IN.)	6	6		
DATE OF COLLECTION	5/4/00	5/4/00		
PERCENT SOLIDS	90	89		
UNITS	(mg/kg)	(mg/kg)	(ug/L)	(mg/kg)
Mercury	226	238	0.1	0.001 - 0.2

NOTES:

[1] Background level for mercury provided in NYSDEC TAGM 4046 Appendix A.

Appendix B

APPENDIX B

DATA QUALIFIERS/
DELINEATION PHASE II ANALYTICAL DATA

TABLE 1
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-51 HSSS-51 3/19/2009	HSSS-52 HSSS-52 3/19/2009	HSSS-61 HSSS-61 5/21/2009	HSSS-69 HSSS-69 5/21/2009	HSSS-72 HSSS-72 6/11/2009	HSSS-73 HSSS-73 6/11/2009	HSSS-79 HSSS-79 8/26/2009
Mercury	(mg/kg)	0.81	2.3D	8.4D	5.3D	4.2	2.3DJ	3.3	4.2

mg/kg: Milligrams per kilogram.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 1
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-80 HSSS-80 8/26/2009	HSSS-81 HSSS-81 8/26/2009	HSSS-82 HSSS-82 8/26/2009	HSSS-88 HSSS-88 8/26/2009	HSSS-89 HSSS-89 8/26/2009	HSSS-90 HSSS-90 8/26/2009	HSSS-94 HSSS-94 11/5/2009
Mercury	(mg/kg)	0.81	2.5	0.721	8.8	3.2	1.8	15.900	4.7

mg/kg: Milligrams per kilogram.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 1
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-95 HSSS-95 11/5/2009	HSSS-96 HSSS-96 11/5/2009	HSSS-97 HSSS-97 11/5/2009	HSSS-98 HSSS-98 11/5/2009	HSSS-102 HSSS-102 11/5/2009	HSSS-103 HSSS-103 11/5/2009	HSSS-104 HSSS-104 11/5/2009
Mercury	(mg/kg)	0.81	0.973	2.1	0.963	1.7	3.5	3.1	0.576

mg/kg: Milligrams per kilogram.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 1
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-105 HSSS-105 11/5/2009	HSSS-106 HSSS-106 11/5/2009	HSSS-110 HSSS-110 12/30/2009	HSSS-111 HSSS-111 12/30/2009	HSSS-112 HSSS-112 12/30/2009	HSSS-113 HSSS-113 12/30/2009	HSSS-119 HSSS-119 12/30/2009
Mercury	(mg/kg)	0.81	1.0	4.1	0.576	0.689	1.4	1.0	3.2

mg/kg: Milligrams per kilogram.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 1
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-120 HSSS-120 12/30/2009	HSSS-121 HSSS-121 12/30/2009	HSSS-122 HSSS-122 12/30/2009	HSSS-123 HSSS-123 12/30/2009	HSSS-124 HSSS-124 12/30/2009	HSSS-125 HSSS-125 12/30/2009	HSSS-127 HSSS-127 12/30/2009
Mercury	(mg/kg)	0.81	1.3	1.4	1.4	0.691	1.1	0.518	17.600

mg/kg: Milligrams per kilogram.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 2
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
LEAD

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-63 HSSS-63 6/11/2009	HSSS-64 HSSS-64 6/11/2009	HSSS-70 HSSS-70 6/11/2009	HSSS-71 HSSS-71 6/11/2009	HSSS-75 HSSS-75 8/26/2009	HSSS-76 HSSS-76 8/26/2009	HSSS-77 HSSS-77 8/26/2009
Lead	(mg/kg)	400	1840	730	617	3320	1210	365	476

mg/kg: Milligrams per kilogram.
Boxed and shaded exceed standard

TABLE 2
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
LEAD

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-84 HSSS-84 8/26/2009	HSSS-85 HSSS-85 8/26/2009	HSSS-86 HSSS-86 8/26/2009	HSSS-87 HSSS-87 8/26/2009	HSSS-92 HSSS-92 11/5/2009	HSSS-93 HSSS-93 11/5/2009	HSSS-99 HSSS-99 11/5/2009
Lead	(mg/kg)	400	736	264	271	386	1400	406	658

mg/kg: Milligrams per kilogram.
Boxed and shaded exceed standard

TABLE 2
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
LEAD

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-100 HSSS-100 11/5/2009	HSSS-101 HSSS-101 11/5/2009	HSSS-107 HSSS-107 12/30/2009	HSSS-108 HSSS-108 12/30/2009	HSSS-109 HSSS-109 12/30/2009	HSSS-114 HSSS-114 12/30/2009	HSSS-115 HSSS-115 12/30/2009
Lead	(mg/kg)	400	599	208	640	415	278	740	297

mg/kg: Milligrams per kilogram.
Boxed and shaded exceed standard

TABLE 2
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
LEAD

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-116 HSSS-116 12/30/2009	HSSS-130 HSSS-130 2/3/2010
Lead	(mg/kg)	400	196	42.8

mg/kg: Milligrams per kilogram.
Boxed and shaded exceed standard

TABLE 3
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-04 HSSS-04 9/8/2005	HSSS-05 HSSS-05 9/9/2005	HSSS-06 HSSS-06 9/9/2005	HSSS-07 HSSS-07 9/9/2005	HSSS-08 HSSS-08 9/9/2005	HSSS-09 HSSS-09 9/8/2005	HSSS-10 HSSS-10 9/9/2005
Mercury	(mg/kg)	5.7	11.500JD	5.7JD	0.808JD	5.7JD	1.4JD	33.900JD	0.133JDB

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
Boxed and shaded exceed standard

TABLE 3
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-11 HSSS-11 9/9/2005	HSSS-12 HSSS-12 9/9/2005	HSSS-13 HSSS-13 9/9/2005	HSSS-14 HSSS-14 9/9/2005	HSSS-15 HSSS-15 9/9/2005	HSSS-16 HSSS-16 9/8/2005	HSSS-17 HSSS-17 9/8/2005
Mercury	(mg/kg)	5.7	0.113JDB	0.217JD	1.2JD	0.457JD	0.099UJ	17.000JD	5.2JD

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
Boxed and shaded exceed standard

TABLE 3
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-18 HSSS-18 9/8/2005	HSSS-19 HSSS-19 9/8/2005	HSSS-20 HSSS-20 9/9/2005	HSSS-21 HSSS-21 3/19/2009	HSSS-22 HSSS-22 3/19/2009	HSSS-23 HSSS-23 3/19/2009	HSSS-24 HSSS-24 3/19/2009
Mercury	(mg/kg)	5.7	2.9JD	161JD	4.6D	35.700D	0.023U	13.200D	2.9D

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
Boxed and shaded exceed standard

TABLE 3
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-25 HSSS-25 3/19/2009	HSSS-26 HSSS-26 3/19/2009	HSSS-27 HSSS-27 3/19/2009	HSSS-28 HSSS-28 3/19/2009	HSSS-29 HSSS-29 3/19/2009	HSSS-30 HSSS-30 3/19/2009	HSSS-31 HSSS-31 3/19/2009
Mercury	(mg/kg)	5.7	0.228DJ	8.8D	2.1J	21.800	24.400	2.5J	10.800J

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
Boxed and shaded exceed standard

TABLE 3
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-32 HSSS-32 3/19/2009	HSSS-33 HSSS-33 3/19/2009	HSSS-34 HSSS-34 3/19/2009	HSSS-35 HSSS-35 3/19/2009	HSSS-36 HSSS-36 3/19/2009	HSSS-37 HSSS-37 3/19/2009	HSSS-38 HSSS-38 3/19/2009
Mercury	(mg/kg)	5.7	23.800J	97.000J	34.800J	27.400J	231J	1490J	51.800J

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
Boxed and shaded exceed standard

TABLE 3
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-39 HSSS-39 3/19/2009	HSSS-40 HSSS-40 3/19/2009	HSSS-41 HSSS-41 3/19/2009	HSSS-42 HSSS-42 3/19/2009	HSSS-43 HSSS-43 3/19/2009	HSSS-44 HSSS-44 3/19/2009	HSSS-45 HSSS-45 3/19/2009
Mercury	(mg/kg)	5.7	52.500J	4.2	1.2J	76.200J	56.500D	19.000J	3.9D

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
Boxed and shaded exceed standard

TABLE 3
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-46 HSSS-46 3/19/2009	HSSS-47 HSSS-47 3/19/2009	HSSS-48 HSSS-48 3/19/2009	HSSS-49 HSSS-49 3/19/2009	HSSS-50 HSSS-50 3/19/2009	HSSS-55 HSSS-55 6/11/2009	HSSS-56 HSSS-56 6/11/2009
Mercury	(mg/kg)	5.7	11.800D	6.7D	6.6D	17.800JD	2.2J	0.785	0.929

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
Boxed and shaded exceed standard

TABLE 3
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-57 HSSS-57 6/11/2009	HSSS-58 HSSS-58 6/11/2009	HSSS-59 HSSS-59 6/11/2009	HSSS-60 HSSS-60 6/11/2009	HSSS-62 HSSS-62 6/11/2009	HSSS-68 HSSS-68 6/11/2009	HSSS-83 HSSS-83 8/26/2009
Mercury	(mg/kg)	5.7	0.402	1.1	0.572	571	7.3	629DJ	26.300

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
Boxed and shaded exceed standard

TABLE 3
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-91 HSSS-91 8/26/2009
Mercury	(mg/kg)	5.7	0.906

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
Boxed and shaded exceed standard

TABLE 4
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
LEAD

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-49 HSSS-49 3/19/2009	HSSS-53 HSSS-53 3/19/2009	HSSS-54 HSSS-54 3/19/2009	HSSS-74 HSSS-74 8/26/2009
Lead	(mg/kg)	3900	277	7080	4150	2470

mg/kg: Milligrams per kilogram.
Boxed and shaded exceed standard

TABLE 5
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
RCRA METALS NOT INCLUDING MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-10 HSSS-10 9/9/2005	HSSS-11 HSSS-11 9/9/2005	HSSS-12 HSSS-12 9/9/2005	HSSS-13 HSSS-13 9/9/2005
Arsenic	(mg/kg)	16	5.9	7.7	4.2	6.7
Barium	(mg/kg)	10000	78.3	84.1	103	172
Cadmium	(mg/kg)	60	0.04U	1.2U	2.6	0.04U
Chromium	(mg/kg)	6800	15.3J	15.3J	13.5J	28.4J
Lead	(mg/kg)	3900	103	2230	1510	3690
Selenium	(mg/kg)	6800	0.91B	1.4	0.71B	1.6
Silver	(mg/kg)	6800	0.10U	2.0U	0.82U	2.0U

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.

TABLE 6
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-10 HSSS-10 9/9/2005	HSSS-11 HSSS-11 9/9/2005	HSSS-12 HSSS-12 9/9/2005	HSSS-13 HSSS-13 9/9/2005	HSSS-53 HSSS-53 3/19/2009	HSSS-54 HSSS-54 3/19/2009
2,2-oxyblis (1-chloropropane)	(ug/kg)	--	64U	570U	640U	120U	400U	2000U
2,4,5-Trichlorophenol	(ug/kg)	--	61U	540U	600U	110U	400U	2000U
2,4,6-Trichlorophenol	(ug/kg)	--	59U	520U	580U	110U	400U	2000U
2,4-Dichlorophenol	(ug/kg)	--	74U	650U	730U	140U	400U	2000U
2,4-Dimethylphenol	(ug/kg)	--	63U	560U	630U	120U	400U	2000U
2,4-Dinitrophenol	(ug/kg)	--	340UJ	3000UJ	3400UJ	630UJ	400U	2000U
2,4-Dinitrotoluene	(ug/kg)	--	59U	520U	580U	110U	400U	2000U
2,6-Dinitrotoluene	(ug/kg)	--	57U	500U	560U	100U	400U	2000U
2-Chloronaphthalene	(ug/kg)	--	66U	580U	660U	120U	400U	2000U
2-Chlorophenol	(ug/kg)	--	64U	560U	630U	120U	400U	2000U
2-Methylnaphthalene	(ug/kg)	--	67U	590U	990J	120U	400U	2000U
3,3-Dichlorobenzidine	(ug/kg)	--	68U	600U	680U	130U	400U	2000U
4,6-Dinitro-o-cresol	(ug/kg)	--	78UJ	680UJ	770UJ	140UJ	400U	2000U
4-Bromofluorobenzene	(ug/kg)	--	60U	530U	590U	110U	--	--
4-Bromophenyl-phenylether	(ug/kg)	--	--	--	--	--	400U	2000U
4-Chlorophenylphenyl ether	(ug/kg)	--	63U	560U	620U	120U	400U	2000U
Acenaphthene	(ug/kg)	1000000	71U	630U	2200J	130U	400U	2000U
Acenaphthylene	(ug/kg)	1000000	65U	570U	640U	180J	400U	2000U
Acetophenone	(ug/kg)	--	59U	510U	580U	110U	400U	2000U
Anthracene	(ug/kg)	1000000	60U	530U	5000	390J	400U	270J
Atrazine	(ug/kg)	--	61U	540U	610U	120J	140J	2000U
Benzaldehyde	(ug/kg)	--	82UJ	720UJ	810UJ	150UJ	400U	2000U
Benzo(a)anthracene	(ug/kg)	11000	89J	490U	4200	870	96J	1400J
Benzo(a)pyrene	(ug/kg)	1100	93J	560U	3200J	930	100J	1200J
Benzo(b)fluoranthene	(ug/kg)	11000	150J	390U	5700	2500	180J	2300
Benzo(ghi)perylene	(ug/kg)	1000000	66U	580U	690J	440J	110J	900J
Benzo(k)fluoranthene	(ug/kg)	110000	88U	770U	1900J	850	70J	840J

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
Boxed and shaded exceed standard
--: No Standard or not analyzed.

TABLE 6
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-10 HSSS-10 9/9/2005	HSSS-11 HSSS-11 9/9/2005	HSSS-12 HSSS-12 9/9/2005	HSSS-13 HSSS-13 9/9/2005	HSSS-53 HSSS-53 3/19/2009	HSSS-54 HSSS-54 3/19/2009
Biphenyl	(ug/kg)	--	66U	580U	650U	120U	400U	2000U
Bis(2-chloroethoxy)methane	(ug/kg)	--	66U	580U	650U	120U	400U	2000U
Bis(2-chloroethyl)ether	(ug/kg)	--	63U	560U	620U	120U	400U	2000U
Bis(2-ethylhexyl)phthalate (BEHP)	(ug/kg)	--	77U	680U	760U	140U	130J	2000U
Butyl benzyl phthalate	(ug/kg)	--	65U	570U	640U	120U	71J	2000U
Caprolactam	(ug/kg)	--	64UJ	570UJ	640UJ	120UJ	400U	2000U
Carbazole	(ug/kg)	--	61UJ	540UJ	600UJ	310J	400U	250J
Chrysene	(ug/kg)	110000	130J	630U	3500J	1400	130J	1600J
Dibenzo(a,h)anthracene	(ug/kg)	1100	50U	440U	500U	93U	400U	2000U
Dibenzofuran	(ug/kg)	1000000	66U	580U	650U	120U	400U	2000U
Diethyl phthalate	(ug/kg)	--	69U	610U	680U	130U	400U	2000U
Dimethyl phthalate	(ug/kg)	--	64U	570U	640U	120U	400U	2000U
Di-n-butyl phthalate	(ug/kg)	--	61U	540U	600U	110U	400U	2000U
Di-n-octyl phthalate	(ug/kg)	--	68U	600U	670U	130U	400U	2000U
Fluoranthene	(ug/kg)	1000000	410	520U	10000	2800	210J	2700
Fluorene	(ug/kg)	1000000	67U	590U	1700J	130U	400U	2000U
Hexachlorobenzene	(ug/kg)	12000	64U	560U	630U	120U	400U	2000U
Hexachlorobutadiene	(ug/kg)	--	62U	540U	610U	110U	400U	2000U
Hexachlorocyclopentadiene	(ug/kg)	--	64U	560U	630U	120U	400U	2000U
Hexachloroethane	(ug/kg)	--	68U	600U	670U	130U	400U	2000U
Indeno(1,2,3-cd)pyrene	(ug/kg)	11000	51UJ	450UJ	500UJ	270J	58J	690J
Isophorone	(ug/kg)	--	60U	530U	590U	110U	400U	2000U
m-Nitroaniline	(ug/kg)	--	52U	460U	510U	97U	400U	2000U
Naphthalene	(ug/kg)	1000000	68U	600U	2500J	130U	400U	2000U
Nitrobenzene	(ug/kg)	--	87U	770U	860U	160U	400U	2000U
N-Nitrosodiphenylamine	(ug/kg)	--	66U	580U	650U	120U	400U	2000U
N-Nitrosodipropylamine	(ug/kg)	--	66U	580U	650U	120U	400U	2000U

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
Boxed and shaded exceed standard

--: No Standard or not analyzed.

TABLE 6
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-10 HSSS-10 9/9/2005	HSSS-11 HSSS-11 9/9/2005	HSSS-12 HSSS-12 9/9/2005	HSSS-13 HSSS-13 9/9/2005	HSSS-53 HSSS-53 3/19/2009	HSSS-54 HSSS-54 3/19/2009
o-Cresol	(ug/kg)	1000000	66U	580U	660U	120U	400U	2000U
o-Nitroaniline	(ug/kg)	--	51U	450U	500U	94U	400U	2000U
o-Nitrophenol	(ug/kg)	--	62UJ	540UJ	610UJ	110UJ	400U	2000U
p-Chloroaniline	(ug/kg)	--	48UJ	420UJ	470UJ	88UJ	400U	2000U
p-Chloro-m-cresol	(ug/kg)	--	55U	490U	550U	100U	400U	2000U
PCP	(ug/kg)	55000	93U	810U	910U	170U	400U	2000U
p-Cresol	(ug/kg)	1000000	63U	560U	620U	120U	400U	2000U
Phenanthrene	(ug/kg)	1000000	210J	560U	9700	1300	120J	960J
Phenol	(ug/kg)	1000000	61U	530U	600U	110U	400U	2000U
p-Nitroaniline	(ug/kg)	--	68U	2400J	670U	130U	400U	2000U
p-Nitrophenol	(ug/kg)	--	50U	440U	490U	92U	400U	2000U
Pyrene	(ug/kg)	1000000	71U	620U	5400	1800	200J	2200
Total Semivolatile Organics	(ug/kg)	--	1082	0	50690	14160	1615	15310

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
--: No Standard or not analyzed.
Boxed and shaded exceed standard

TABLE 7
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-53 HSSS-53 3/19/2009	HSSS-54 HSSS-54 3/19/2009
2,2-oxyblis (1-chloropropane)	(ug/kg)	--	400U	2000U
2,4,5-Trichlorophenol	(ug/kg)	--	400U	2000U
2,4,6-Trichlorophenol	(ug/kg)	--	400U	2000U
2,4-Dichlorophenol	(ug/kg)	--	400U	2000U
2,4-Dimethylphenol	(ug/kg)	--	400U	2000U
2,4-Dinitrophenol	(ug/kg)	--	400U	2000U
2,4-Dinitrotoluene	(ug/kg)	--	400U	2000U
2,6-Dinitrotoluene	(ug/kg)	--	400U	2000U
2-Chloronaphthalene	(ug/kg)	--	400U	2000U
2-Chlorophenol	(ug/kg)	--	400U	2000U
2-Methylnaphthalene	(ug/kg)	--	400U	2000U
3,3-Dichlorobenzidine	(ug/kg)	--	400U	2000U
4,6-Dinitro-o-cresol	(ug/kg)	--	400U	2000U
4-Bromophenyl-phenylether	(ug/kg)	--	400U	2000U
4-Chlorophenylphenyl ether	(ug/kg)	--	400U	2000U
Acenaphthene	(ug/kg)	100000	400U	2000U
Acenaphthylene	(ug/kg)	100000	400U	2000U
Acetophenone	(ug/kg)	--	400U	2000U
Anthracene	(ug/kg)	100000	400U	270J
Atrazine	(ug/kg)	--	140J	2000U
Benzaldehyde	(ug/kg)	--	400U	2000U
Benzo(a)anthracene	(ug/kg)	1000	96J	1400J
Benzo(a)pyrene	(ug/kg)	1000	100J	1200J
Benzo(b)fluoranthene	(ug/kg)	1000	180J	2300
Benzo(ghi)perylene	(ug/kg)	100000	110J	900J
Benzo(k)fluoranthene	(ug/kg)	1000	70J	840J

ug/kg: Micrograms per kilogram.
--: No Standard or not analyzed.
U: Not detected.
J: Estimated value.
Boxed and shaded exceed standard

TABLE 7
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-53 HSSS-53 3/19/2009	HSSS-54 HSSS-54 3/19/2009
Biphenyl	(ug/kg)	--	400U	2000U
Bis(2-chloroethoxy)methane	(ug/kg)	--	400U	2000U
Bis(2-chloroethyl)ether	(ug/kg)	--	400U	2000U
Bis(2-ethylhexyl)phthalate (BEHP)	(ug/kg)	--	130J	2000U
Butyl benzyl phthalate	(ug/kg)	--	71J	2000U
Caprolactam	(ug/kg)	--	400U	2000U
Carbazole	(ug/kg)	--	400U	250J
Chrysene	(ug/kg)	1000	130J	1600J
Dibenzo(a,h)anthracene	(ug/kg)	330	400U	2000U
Dibenzofuran	(ug/kg)	14000	400U	2000U
Diethyl phthalate	(ug/kg)	--	400U	2000U
Dimethyl phthalate	(ug/kg)	--	400U	2000U
Di-n-butyl phthalate	(ug/kg)	--	400U	2000U
Di-n-octyl phthalate	(ug/kg)	--	400U	2000U
Fluoranthene	(ug/kg)	100000	210J	2700
Fluorene	(ug/kg)	100000	400U	2000U
Hexachlorobenzene	(ug/kg)	330	400U	2000U
Hexachlorobutadiene	(ug/kg)	--	400U	2000U
Hexachlorocyclopentadiene	(ug/kg)	--	400U	2000U
Hexachloroethane	(ug/kg)	--	400U	2000U
Indeno(1,2,3-cd)pyrene	(ug/kg)	500	58J	690J
Isophorone	(ug/kg)	--	400U	2000U
m-Nitroaniline	(ug/kg)	--	400U	2000U
Naphthalene	(ug/kg)	100000	400U	2000U
Nitrobenzene	(ug/kg)	--	400U	2000U
N-Nitrosodiphenylamine	(ug/kg)	--	400U	2000U
N-Nitrosodipropylamine	(ug/kg)	--	400U	2000U

ug/kg: Micrograms per kilogram.
--: No Standard or not analyzed.
U: Not detected.
J: Estimated value.
Boxed and shaded exceed standard

TABLE 7
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSS-53 HSSS-53 3/19/2009	HSSS-54 HSSS-54 3/19/2009
o-Cresol	(ug/kg)	100000	400U	2000U
o-Nitroaniline	(ug/kg)	--	400U	2000U
o-Nitrophenol	(ug/kg)	--	400U	2000U
p-Chloroaniline	(ug/kg)	--	400U	2000U
p-Chloro-m-cresol	(ug/kg)	--	400U	2000U
PCP	(ug/kg)	2400	400U	2000U
p-Cresol	(ug/kg)	34000	400U	2000U
Phenanthrene	(ug/kg)	100000	120J	960J
Phenol	(ug/kg)	100000	400U	2000U
p-Nitroaniline	(ug/kg)	--	400U	2000U
p-Nitrophenol	(ug/kg)	--	400U	2000U
Pyrene	(ug/kg)	100000	200J	2200
Total Semivolatile Organics	(ug/kg)	--	1615	15310

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
Boxed and shaded exceed standard

--: No Standard or not analyzed.

TABLE 8
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
POLYCHLORINATED BIPHENYLS (PCBs)

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-10 HSSS-10 9/9/2005	HSSS-11 HSSS-11 9/9/2005	HSSS-12 HSSS-12 9/9/2005	HSSS-13 HSSS-13 9/9/2005
Aroclor 1016	(ug/kg)	--	3.1U	2.7U	3.0U	2.9U
Aroclor 1221	(ug/kg)	--	4.8U	4.2U	4.7U	4.4U
Aroclor 1232	(ug/kg)	--	7.2U	6.2U	7.0U	6.6U
Aroclor 1242	(ug/kg)	--	6.4U	5.6U	6.2U	5.9U
Aroclor 1248	(ug/kg)	--	3.1U	2.7U	3.0U	2.9U
Aroclor 1254	(ug/kg)	--	2.0U	1.8U	2.0U	1.9U
Aroclor 1260	(ug/kg)	--	5.1U	4.5U	5.0U	4.7U
Total PCBs (surface soil)	(ug/kg)	25000	0	0	0	0

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.

TABLE 9
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-60 HSSB-60(1-2) 3/19/2009	HSSB-60 HSSB-60(2-4) 3/19/2009	HSSB-60 HSSB-60(4-6) 3/19/2009	HSSB-61 HSSB-61(4-6) 3/19/2009	HSSB-61 HSSB-61(1-2) 3/19/2009	HSSB-61 HSSB-61(2-4) 3/19/2009	HSSB-71 HSB-71(1-2) 5/21/2009
Mercury	(mg/kg)	0.81	1.4D	0.107D	0.104U	0.155D	1.1D	0.332D	0.140U

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 9
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-78 HSSB-78 (1-2) 5/21/2009	HSSB-81 HSSB-81(1-2) 6/11/2009	HSSB-82 HSSB-82(1-2) 6/11/2009	HSSB-88 HSSB-88(1-2) 8/26/2009	HSSB-89 HSSB-89(1-2) 8/26/2009	HSSB-90 HSSB-90(1-2) 8/26/2009	HSSB-91 HSSB-91(1-2) 8/26/2009
Mercury	(mg/kg)	0.81	4.2	0.277J	0.226	0.533	0.135	0.065	1.4

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 9
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-99 HSSB-99(1-2) 8/26/2009	HSSB-100 HSSB-100(1-2) 8/26/2009	HSSB-101 HSSB-101(1-2) 8/26/2009	HSSB-105 HSSB-105(1-2) 11/5/2009	HSSB-106 HSSB-106(1-2) 11/5/2009	HSSB-107 HSSB-107(1-2) 11/5/2009	HSSB-108 HSSB-108(1-2) 11/5/2009
Mercury	(mg/kg)	0.81	0.62	0.129	0.489	1.7	1.8	1	0.704

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 9
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-109 HSSB-109(1-2) 11/5/2009	HSSB-113 HSSB-113(1-2) 11/5/2009	HSSB-113A HSSB-113A(2-4 12/30/2009	HSSB-114 HSSB-114(1-2) 11/5/2009	HSSB-115 HSSB-115(1-2) 11/5/2009	HSSB-116 HSSB-116(1-2) 11/5/2009	HSSB-117 HSSB-117(1-2) 11/5/2009
Mercury	(mg/kg)	0.81	0.24	3.3	0.039	0.62	0.262	0.145	0.339

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 9
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-121 HSSB-121(1-2) 12/30/2009	HSSB-122 HSSB-122(1-2) 12/30/2009	HSSB-123 HSSB-123(1-2) 12/30/2009	HSSB-124 HSSB-124 (1-2) 12/30/2009	HSSB-130 HSSB-130(1-2) 12/30/2009	HSSB-131 HSSB-131(1-2) 12/30/2009	HSSB-132 HSSB-132(1-2) 12/30/2009
Mercury	(mg/kg)	0.81	0.083	0.067	0.069	0.036	0.179	0.143	0.054

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 9
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-133 HSSB-133(1-2) 12/30/2009	HSSB-134 HSSB-134(1-2) 12/30/2009	HSSB-135 HSSB-135(1-2) 12/30/2009	HSSB-136 HSSB-136(1-2) 12/30/2009	HSSB-138 HSSB-138(1-2) 12/30/2009	HSSB-140 HSSB-140(1-2) 12/30/2009	HSSB-142 HSSB-142(1-2) 2/3/2010
Mercury	(mg/kg)	0.81	0.041	0.111	0.121	0.114U	0.579	0.080J	0.294

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 9
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-143 HSSB-143(1-2) 2/3/2010	HSSB-144 HSSB-144(1-2) 2/3/2010	HSSB-150 HSSB-150(1-2) 2/3/2010	HSSB-151 HSSB-151(1-2) 2/3/2010	HSSB-152 HSSB-152(1-2) 5/18/2010	HSSB-153 HSSB-153(1-2) 5/18/2010	HSSB-154 HSSB-154(1-2) 5/18/2010
Mercury	(mg/kg)	0.81	0.162	0.031	0.062	0.368	0.069	0.029	0.021

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 9
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-155 HSSB-155(1-2) 5/18/2010
Mercury	(mg/kg)	0.81	0.065

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 10
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
LEAD

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-72 HSSB-72 (1-2) 6/11/2009	HSSB-73 HSSB-73 (1-2) 6/11/2009	HSSB-79 HSSB-79(1-2) 6/11/2009	HSSB-80 HSSB-80(1-2) 6/11/2009	HSSB-84 HSSB-84(1-2) 8/26/2009	HSSB-85 HSSB-85(1-2) 8/26/2009	HSSB-85 HSSB-85(2-3) 8/26/2009
Lead	(mg/kg)	400	238	183	55.5	60.7	60.7	225	113

mg/kg: Milligrams per kilogram.

TABLE 10
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
LEAD

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-86 HSSB-86(1-2) 8/26/2009	HSSB-87 HSSB-87(1-2) 8/26/2009	HSSB-95 HSSB-95(1-2) 8/26/2009	HSSB-96 HSSB-96(1-2) 8/26/2009	HSSB-97 HSSB-97(1-2) 8/26/2009	HSSB-98 HSSB-98(1-2) 8/26/2009	HSSB-103 HSSB-103(1-2) 11/5/2009
Lead	(mg/kg)	400	189	225	126	59.4	40.9	35.2	69.8

mg/kg: Milligrams per kilogram.

TABLE 10
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
LEAD

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-104 HSSB-104(1-2) 11/5/2009	HSSB-110 HSSB-110(1-2) 11/5/2009	HSSB-111 HSSB-111(1-2) 11/5/2009	HSSB-112 HSSB-112(1-2) 11/5/2009	HSSB-118 HSSB-118(1-2) 12/30/2009	HSSB-119 HSSB-119(1-2) 12/30/2009	HSSB-120 HSSB-120(1-2) 12/30/2009
Lead	(mg/kg)	400	308	117	91.4	32.2	124	83.8	61.2

mg/kg: Milligrams per kilogram.

TABLE 10
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
LEAD

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-125 HSSB-125(1-2) 12/30/2009	HSSB-126 HSSB-126(1-2) 12/30/2009	HSSB-127 HSSB-127(1-2) 12/30/2009	HSSB-141 HSSB-141(1-2) 2/3/2010
Lead	(mg/kg)	400	191	50.3	56.5	73.1

mg/kg: Milligrams per kilogram.

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-02A HSSB-02A(6-8) 9/8/2005	HSSB-02A HSSB-02A(8-10 9/8/2005	HSSB-08 HSSB-08(2-4) 9/8/2005	HSSB-08 HSSB-08(4-6) 9/8/2005	HSSB-08 HSSB-08(6-8) 9/8/2005	HSSB-09 HSSB-9(2-4) 9/8/2005	HSSB-09 HSSB-9(4-6) 9/8/2005
Mercury	(mg/kg)	5.7	0.263JD	0.114UJ	$\boxed{12.200JD}$	0.997JD	0.261JD	0.882D	2.6D

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-09 HSSB-9(6-8) 9/8/2005	HSSB-10 HSSB-10(2-4) 9/8/2005	HSSB-10 HSSB-10(4-6) 9/8/2005	HSSB-10 HSSB-10(6-8) 9/8/2005	HSSB-11 HSSB-11(2-4) 9/9/2005	HSSB-12 HSSB-12(2-4) 9/9/2005	HSSB-13 HSSB-13(2-4) 9/9/2005
Mercury	(mg/kg)	5.7	2.7D	16.500JD	0.092UJ	0.093UJ	0.530JD	0.112U	0.746JD

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-14 HSSB-14(2-4) 9/9/2005	HSSB-17 HSSB-17(0-2) 9/9/2005	HSSB-17 HSSB-17(2-4) 9/9/2005	HSSB-18 HSSB-18(0-2) 9/9/2005	HSSB-18 HSSB-18(2-4) 9/9/2005	HSSB-19 HSSB-19(0-2) 9/9/2005	HSSB-19 HSSB-19(2-4) 9/9/2005
Mercury	(mg/kg)	5.7	0.219JD	0.176JD	0.106UJ	0.115DB	0.095U	0.233JD	0.100U

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-20 HSSB-20(0-2) 9/9/2005	HSSB-20 HSSB-20(2-4) 9/9/2005	HSSB-21 HSSB-21(2-4) 9/9/2005	HSSB-22 HSSB-22(2-4) 9/9/2005	HSSB-23 HSSB-23(2-4) 9/8/2005	HSSB-24 HSSB24(2-4) 9/8/2005	HSSB-25 HSSB-25(2-4) 9/8/2005
Mercury	(mg/kg)	5.7	0.385JD	0.103U	0.116JDB	0.108U	1.5JD	1.1JD	1.2JD

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-26 HSSB-26(2-4) 9/8/2005	HSSB-27 HSSB-27(1-2) 3/19/2009	HSSB-28 HSSB-28(1-2) 3/19/2009	HSSB-29 HSSB-29-(1-2) 3/19/2009	HSSB-30 HSSB-30(1-2) 3/19/2009	HSSB-31 HSSB-31(1-2) 3/19/2009	HSSB-32 HSSB-32(1-2) 3/19/2009
Mercury	(mg/kg)	5.7	1.9JD	15.800D	4.2D	26.5	11.7	23.6	0.673

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-33 HSSB-33(1-2) 3/19/2009	HSSB-34 HSSB-34(1-2) 3/19/2009	HSSB-34 HSSB-34(2-4) 3/19/2009	HSSB-34 HSSB-34(4-6) 3/19/2009	HSSB-35 HSSB-35(1-2) 3/19/2009	HSSB-35 HSSB-35(2-4) 3/19/2009	HSSB-35 HSSB-35(4-6) 3/19/2009
Mercury	(mg/kg)	5.7	0.104U	6.1	1.2	0.198	2.6	2.5	0.768

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-36 HSSB-36(1-2) 3/19/2009	HSSB-37 HSSB-37(1-2) 3/19/2009	HSSB-38 HSSB-38(1-2) 3/19/2009	HSSB-39 HSSB-39(1-2) 3/19/2009	HSSB-40 HSSB-40(1-2) 3/19/2009	HSSB-40 HSSB-40(2-4) 3/19/2009	HSSB-40 HSSB-40(4-6) 3/19/2009
Mercury	(mg/kg)	5.7	0.311J	2.8J	5.2J	8.9J	4.1	0.130U	0.289

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-41 HSSB-41(1-2) 3/19/2009	HSSB-42 HSSB-42(1-2) 3/19/2009	HSSB-43 HSSB-43(1-2) 3/19/2009	HSSB-44 HSSB-44(1-2) 3/19/2009	HSSB-45 HSSB-45(1-2) 3/19/2009	HSSB-46 HSSB-46(1-2) 3/19/2009	HSSB-47 HSSB-47(1-2) 3/19/2009
Mercury	(mg/kg)	5.7	0.223J	4.5J	5.4J	23.700J	14.800J	3.8J	0.238J

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-48 HSSB-48(1-2) 3/19/2009	HSSB-49 HSSB-49 3/19/2009	HSSB-50 HSSB-50(1-2) 3/19/2009	HSSB-51 HSSB-51(1-2) 3/19/2009	HSSB-52 HSSB-52(1-2) 3/19/2009	HSSB-53 HSSB-53(1-2) 3/19/2009	HSSB-53 HSSB-53(2-4) 3/19/2009
Mercury	(mg/kg)	5.7	6.8J	0.315J	0.891J	1.8J	2.6D	1.6J	0.696J

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-53 HSSB-53(4-6) 3/19/2009	HSSB-54 HSSB-54(1-2) 3/19/2009	HSSB-55 HSSB-55(1-2) 3/19/2009	HSSB-56 HSSB-56(1-2) 3/19/2009	HSSB-57 HSSB-57(1-2) 3/19/2009	HSSB-58 HSSB-58(1-2) 3/19/2009	HSSB-59 HSSB-59(1-2) 3/19/2009
Mercury	(mg/kg)	5.7	0.002UJ	0.047JD	0.354JD	4.6D	5.2D	1.2D	0.107J

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-59 HSSB-59(2-4) 3/19/2009	HSSB-59 HSSB-59(4-6) 3/19/2009	HSSB-62 HSSB-62(1-2) 3/19/2009	HSSB-63 HSSB-63(1-2) 3/19/2009	HSSB-64 HSSB-64 (1-2) 6/11/2009	HSSB-65 HSSB-65 (1-2) 6/11/2009	HSSB-66 HSSB-66 (1-2) 6/11/2009
Mercury	(mg/kg)	5.7	0.057J	0.021UJ	0.050J	0.126D	0.706	0.159	0.327

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-67 HSSB-67 (1-2) 6/11/2009	HSSB-68 HSSB-68 (1-2) 6/11/2009	HSSB-69 HSSB-69 (1-2) 6/11/2009	HSSB-69 HSSB-69(2-4) 6/11/2009	HSSB-70 HSSB-70 (1-2) 6/11/2009	HSSB-70 HSSB-70 (2-4) 6/11/2009	HSSB-76 HSSB-76 (1-2) 6/11/2009
Mercury	(mg/kg)	5.7	0.515	11.3	920	11.700DJ	80.2	6.8	2.4DJ

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 11
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-76 HSSB-76 (2-4) 6/11/2009	HSSB-77 HSSB-77(1-2) 6/11/2009	HSSB-92 HSSB-92(4-6) 8/26/2009	HSSB-92 HSSB-92(6-8) 8/26/2009	HSSB-93 HSSB-93(4-6) 8/26/2009	HSSB-94 HSSB-94(1-2) 8/26/2009	HSSB-102 HSSB-102(1-2) 8/26/2009
Mercury	(mg/kg)	5.7	0.720DJ	334DJ	69.1	19.7	0.126	0.587	19.9

mg/kg: Milligrams per kilogram.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 12
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
LEAD

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-34 HSSB-34(1-2) 3/19/2009	HSSB-34 HSSB-34(2-4) 3/19/2009	HSSB-34 HSSB-34(4-6) 3/19/2009	HSSB-40 HSSB-40(1-2) 3/19/2009	HSSB-40 HSSB-40(2-4) 3/19/2009	HSSB-40 HSSB-40(4-6) 3/19/2009	HSSB-47 HSSB-47(1-2) 3/19/2009
Lead	(mg/kg)	3900	30.7	21.3	1.28	57.2	9.95	2.28	43.6J

mg/kg: Milligrams per kilogram.

TABLE 12
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
LEAD

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-62 HSSB-62(1-2) 3/19/2009	HSSB-63 HSSB-63(1-2) 3/19/2009	HSSB-83 HSSB-83(1-2) 8/26/2009
Lead	(mg/kg)	3900	30.6	223	114

mg/kg: Milligrams per kilogram.

TABLE 13
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
RCRA METALS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-17 HSSB-17(0-2) 9/9/2005	HSSB-17 HSSB-17(2-4) 9/9/2005	HSSB-18 HSSB-18(0-2) 9/9/2005	HSSB-18 HSSB-18(2-4) 9/9/2005	HSSB-19 HSSB-19(0-2) 9/9/2005	HSSB-19 HSSB-19(2-4) 9/9/2005	HSSB-20 HSSB-20(0-2) 9/9/2005	HSSB-20 HSSB-20(2-4) 38604
Arsenic	(mg/kg)	16	7.5	5.4	4.3	1.7	5.6	0.91B	5.4	4.2
Barium	(mg/kg)	10000	39.2	32.6	40.6	14.3B	94.3	28.7	72.7	28.6
Cadmium	(mg/kg)	60	0.04U	0.04U	0.04U	0.04U	9.2	0.04U	0.04U	0.04U
Chromium	(mg/kg)	6800	10.8J	18.1J	10.2	8.9	14.2J	7.4J	16.9	15.8
Lead	(mg/kg)	3900	93.3	25.1	218J	13.1J	144	18.4	854J	23.1J
Mercury	(mg/kg)	6800	0.176JD	0.106UJ	0.115DB	0.095U	0.233JD	0.100U	0.385JD	0.103U
Selenium	(mg/kg)	6800	0.96B	1.1B	0.51B	0.42B	1.3	0.46B	0.72B	0.68B
Silver	(mg/kg)	6800	0.09U	0.10U	0.09U	0.09U	0.10U	0.09U	0.09U	0.09U

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.
D: Detected at secondary dilution.

TABLE 14
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-17 HSSB-17(0-2) 9/9/2005	HSSB-17 HSSB-17(2-4) 9/9/2005	HSSB-18 HSSB-18(0-2) 9/9/2005	HSSB-18 HSSB-18(2-4) 9/9/2005	HSSB-19 HSSB-19(0-2) 9/9/2005	HSSB-19 HSSB-19(2-4) 9/9/2005	HSSB-20 HSSB-20(0-2) 9/9/2005
2,2-oxybis(1-chloropropane)	(ug/kg)	--	590U	64U	120U	58U	1300U	610U	120U
2,4,5-Trichlorophenol	(ug/kg)	--	560U	61U	110U	55U	1300UJ	580U	120U
2,4,6-Trichlorophenol	(ug/kg)	--	530U	58U	110U	53U	1200UJ	550U	110U
2,4-Dichlorophenol	(ug/kg)	--	670U	73U	140U	66U	1500UJ	700U	140U
2,4-Dimethylphenol	(ug/kg)	--	580U	63U	120U	57U	1300UJ	600U	120U
2,4-Dinitrophenol	(ug/kg)	--	3100UJ	340UJ	630UJ	310UJ	7100UJ	3200UJ	660UJ
2,4-Dinitrotoluene	(ug/kg)	--	530U	58U	110U	53U	1200U	550U	110U
2,6-Dinitrotoluene	(ug/kg)	--	510U	56U	100U	51U	1200U	530U	110U
2-Chloronaphthalene	(ug/kg)	--	600U	66U	120U	59U	1400U	630U	130U
2-Chlorophenol	(ug/kg)	--	580U	63U	120U	57U	1300UJ	600U	120U
2-Methylnaphthalene	(ug/kg)	--	610U	66U	120U	60U	1400U	630U	130U
3,3-Dichlorobenzidine	(ug/kg)	--	620U	68U	130U	61U	1400U	650U	130U
4,6-Dinitro-2-methylphenol	(ug/kg)	--	710UJ	77UJ	140UJ	70UJ	1600UJ	730U	150UJ
4-Bromophenyl-phenylether	(ug/kg)	--	540U	59U	110U	54U	1200U	560U	120U
4-Bromophenyl-phenylether	(ug/kg)	--	--	--	--	--	--	--	--
4-chlorophenyl-phenylether	(ug/kg)	--	580U	63U	120U	57U	1300U	600U	120U
Acenaphthene	(ug/kg)	1000000	650U	71U	130U	64U	1500UJ	670UJ	140U
Acenaphthylene	(ug/kg)	1000000	590U	64U	120U	58U	1400U	610U	140J
Acetophenone	(ug/kg)	--	530U	58U	110U	52U	1200U	550U	110U
Anthracene	(ug/kg)	1000000	550U	60U	110U	54U	1300U	570U	290J
Atrazine	(ug/kg)	--	560U	61U	110U	55U	1300U	580U	120U
Benzaldehyde	(ug/kg)	--	750UJ	82UJ	150UJ	74UJ	1700UJ	770UJ	160UJ
Benzo(a)anthracene	(ug/kg)	11000	510U	64J	100U	64J	1200U	530U	2100
Benzo(a)pyrene	(ug/kg)	1100	580U	74J	120U	57U	1300U	600U	2000
Benzo(b)fluoranthene	(ug/kg)	11000	800J	130J	120J	39U	920U	420U	4100J
Benzo(g,h,i)perylene	(ug/kg)	1000000	600U	66U	120U	59U	1400U	620U	540J
Benzo(k)fluoranthene	(ug/kg)	110000	800U	87U	160U	79U	1800UJ	830UJ	1700J

ug/kg: Micrograms per kilogram.
--: No Standard or not analyzed.
U: Not detected.
J: Estimated value.
Boxed and shaded exceed standard

TABLE 14
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-17 HSSB-17(0-2) 9/9/2005	HSSB-17 HSSB-17(2-4) 9/9/2005	HSSB-18 HSSB-18(0-2) 9/9/2005	HSSB-18 HSSB-18(2-4) 9/9/2005	HSSB-19 HSSB-19(0-2) 9/9/2005	HSSB-19 HSSB-19(2-4) 9/9/2005	HSSB-20 HSSB-20(0-2) 9/9/2005
Biphenyl	(ug/kg)	--	600U	65U	120U	59U	1400U	620U	130U
Bis(2-chloroethoxy)methane	(ug/kg)	--	600U	65U	120U	59U	1400U	620U	130U
Bis(2-chloroethyl)ether	(ug/kg)	--	580U	63U	120U	57U	1300U	600U	120U
Bis(2-ethylhexyl)phthalate	(ug/kg)	--	700U	76U	140U	69U	1600U	720U	150U
Butylbenzylphthalate	(ug/kg)	--	590U	64U	120U	58U	1400U	610U	120U
Caprolactam	(ug/kg)	--	590UJ	64UJ	120UJ	58UJ	1300UJ	610UJ	120UJ
Carbazole	(ug/kg)	--	560UJ	61UJ	110UJ	55UJ	1300UJ	580UJ	290J
Chrysene	(ug/kg)	110000	750J	120J	130U	70J	1500U	680U	2200
Dibenz(a,h)anthracene	(ug/kg)	1100	460U	50U	93U	45U	1000U	470U	97U
Dibenzofuran	(ug/kg)	1000000	600U	66U	120U	59U	1400U	620U	130U
Diethylphthalate	(ug/kg)	--	630U	69U	130U	62U	1400U	650U	130U
Dimethylphthalate	(ug/kg)	--	590U	64U	120U	58U	1300U	610U	120U
Di-n-butylphthalate	(ug/kg)	--	550U	60U	110U	55U	1300U	580U	120U
Di-n-octyl phthalate	(ug/kg)	--	620U	68U	130U	61U	1400U	640U	130U
Fluoranthene	(ug/kg)	1000000	1300J	230J	160J	89J	1200U	560U	4900
Fluorene	(ug/kg)	1000000	610U	67U	130U	60U	1400UJ	640UJ	130U
Hexachlorobenzene	(ug/kg)	12000	580U	63U	120U	57U	1300U	600U	120U
Hexachlorobutadiene	(ug/kg)	--	560U	61U	110U	55U	1300U	580U	120U
Hexachlorocyclopentadiene	(ug/kg)	--	580U	63U	120U	57U	1300U	600U	120U
Hexachloroethane	(ug/kg)	--	620U	67U	130U	61U	1400U	640U	130U
Indeno(1,2,3-cd)pyrene	(ug/kg)	11000	460UJ	50UJ	94UJ	45UJ	1100UJ	480UJ	300J
Isophorone	(ug/kg)	--	550U	60U	110U	54U	1300U	570U	120U
3-Nitroaniline	(ug/kg)	--	470U	52U	97U	47U	1100U	490U	100U
Naphthalene	(ug/kg)	1000000	620U	68U	130U	61U	1400U	640U	130U
Nitrobenzene	(ug/kg)	--	790U	87U	160U	78U	1800U	820U	170U
N-Nitrosodiphenylamine	(ug/kg)	--	600U	65U	120U	59U	1400U	620U	130U
N-Nitroso-di-n-propylamine	(ug/kg)	--	600U	66U	120U	59U	1400U	630U	130U

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
--: No Standard or not analyzed.
Boxed and shaded exceed standard

TABLE 14
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-17 HSSB-17(0-2) 9/9/2005	HSSB-17 HSSB-17(2-4) 9/9/2005	HSSB-18 HSSB-18(0-2) 9/9/2005	HSSB-18 HSSB-18(2-4) 9/9/2005	HSSB-19 HSSB-19(0-2) 9/9/2005	HSSB-19 HSSB-19(2-4) 9/9/2005	HSSB-20 HSSB-20(0-2) 9/9/2005
2-Methylphenol	(ug/kg)	1000000	610U	66U	120U	60U	1400UJ	630U	130U
2-Nitroaniline	(ug/kg)	--	460U	50U	94U	45U	1100U	480U	98U
2-Nitrophenol	(ug/kg)	--	560UJ	61UJ	110U	55U	1300UJ	580UJ	120U
4-Chloroaniline	(ug/kg)	--	430UJ	47UJ	88UJ	43UJ	990U	450U	92UJ
4-Chloro-3-methylphenol	(ug/kg)	--	500U	55U	100U	49U	1200UJ	520U	110U
Pentachlorophenol	(ug/kg)	55000	840U	92U	170U	83U	1900UJ	870U	180U
3-Methylphenol/4-Methylphenol	(ug/kg)	1000000	570U	63U	120U	57U	1300UJ	600U	120U
Phenanthrene	(ug/kg)	1000000	640J	130J	120U	57U	1300U	600U	570J
Phenol	(ug/kg)	1000000	550U	60U	110U	54U	1300UJ	570U	120U
4-Nitroaniline	(ug/kg)	--	620U	68U	130U	61U	1400UJ	640UJ	130U
4-Nitrophenol	(ug/kg)	--	450U	49U	92UJ	44UJ	1000UJ	470U	96UJ
Pyrene	(ug/kg)	1000000	1400J	210J	160J	130J	1500U	670U	3400
Total Semivolatile Organics	(ug/kg)	--	4890	958	440	353	0	0	22530

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
--: No Standard or not analyzed.
Boxed and shaded exceed standard

Appendix C

APPENDIX C

DELINEATION PHASE II BORING LOGS

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2229 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-02A Sheet 1 of 1 By: Stephen Tauss
Drilling Contractor: L.A.W.E.S. Driller: --- Drill Rig: Geoprobe Date Started: 9/8/05	Geologist: Stephen Tauss Drilling Method: --- Drive Hammer Weight: NA Date Completed: 9/8/05	Boring Completion Depth: 10' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium silty SAND, some fine to medium gravel.	
2' - 4'	2	HA	24	0.000	0.0	Same as above.	
4' - 6'	3	GP	24	0.000	0.0	Tannish-brown, fine to medium SAND and fine to medium GRAVEL.	
6' - 8'	4	GP	24	0.000	0.0	Same as above.	
8' - 10'	5	GP	24	0.000	0.0	Orange-brown, fine to medium SAND, some fine gravel, little medium gravel.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Samples for mercury analysis were collected at 6'-8' and 8'-10'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2229 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-03A **Sheet** 1 **of** 1 **By:** Stephen Tauss
Drilling Contractor: L.A.W.E.S. **Driller:** --- **Drill Rig:** Geoprobe **Date Started:** 9/8/05	**Geologist:** Stephen Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 9/9/05	**Boring Completion Depth:** 31' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 17'	-	-	-	-	-	Void.	
17' - 19'	1	HA	24	0.004	0.0	Orange-brown, fine to course SAND and fine to medium GRAVEL.	
19' - 21'	2	GP	24	0.000	0.0	Orange-brown, fine to medium SAND, some silt, little fine gravel.	
21' - 23'	3	GP	24	0.000	0.0	Same as above.	
23' - 25'	4	GP	24	0.000	0.0	Same as above.	
25' - 27'	5	GP	24	0.000	0.0	Brown, fine to medium SAND and fine to medium GRAVEL, some silt.	
27' - 29'	6	GP	24	0.000	0.0	Orange-brown fine SAND, some medium sand and fine gravel.	
29' - 31'	7	GP	24	0.000	0.0	Orange-brown fine SAND, little fine gravel and medium sand.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Samples for UIC constituents were collected at 23'-25', 25'-27', 27'-29' and 29'-31'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2229
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-04A
Sheet 1 **of** 1
By: Stephen Tauss

Drilling Contractor: L.A.W.E.S.
Driller: ---
Drill Rig: Geoprobe
Date Started: 9/8/05

Geologist: Stephen Tauss
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 9/8/05

Boring Completion Depth: 16'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium SAND, some fine to medium gravel.	
2' - 4'	2	HA	24	0.004	0.0	Same as above.	
4' - 6'	3	GP	24	0.000	0.0	Same as above.	
6' - 8'	4	GP	24	0.000	0.0	Grayish-brown fine to medium SAND and fine to medium GRAVEL.	
8' - 10'	5	GP	24	0.000	0.0	Orange-brown fine to medium SAND, some fine gravel, little medium gravel.	
10' - 12'	6	GP	24	0.003	0.0	Same as above.	
12' - 14'	7	GP	24	0.000	0.0	Same as above.	
14' - 16'	8	GP	24	0.000	0.0	Orange- brown fine to medium SAND, some fine to medium gravel.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Samples for UIC constituents were collected at 10'-12', 12'-14' and 14'-16'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2229 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-08 Sheet 1 of 1 By: Stephen Tauss
Drilling Contractor: L.A.W.E.S. Driller: --- Drill Rig: — Date Started: 9/8/05	Geologist: Stephen Tauss Drilling Method: --- Drive Hammer Weight: NA Date Completed: 9/8/05	Boring Completion Depth: 8' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Blackish-brown, fine to medium SILTY SAND, some fine to medium gravel.	
2' - 4'	2	HA	24	0.000	0.0	Brown, fine to medium SAND and fine to medium GRAVEL.	
4' - 6'	3	HA	24	0.000	0.0	Same as above.	
6' - 8'	4	HA	24	0.000	0.0	Tannish-brown, fine to medium SAND and fine to medium GRAVEL.	

Sample Types:	NOTES:
SS = Split Spoon HA = Hand Auger GP = Geoprobe Sampler CC = Concrete Core	Samples for mercury analysis were collected at 2'-4', 4'-6' and 6'-8'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2229 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-09 Sheet 1 of 1 By: Stephen Tauss
Drilling Contractor: L.A.W.E.S. Driller: --- Drill Rig: --- Date Started: 9/8/05	Geologist: Stephen Tauss Drilling Method: — Drive Hammer Weight: NA Date Completed: 9/8/05	Boring Completion Depth: 8' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.018	0.0	Blackish-brown, fine to medium silty SAND.	
2' - 4'	2	HA	24	0.018	0.0	Brown, fine to medium silty clayey SAND, some fine to medium gravel.	
4' - 6'	3	HA	24	0.000	0.0	Brown-light brown, fine to medium clayey SAND, trace fine to medium gravel.	
6' - 8'	4	HA	24	0.000	0.0	Brown- light brown fine to medium SAND, trace fine to medium gravel.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Samples for mercury analysis were collected at 2'-4', 4'-6' and 6'-8'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2229 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-10 Sheet 1 of 1 By: Stephen Tauss
Drilling Contractor: L.A.W.E.S. Driller: --- Drill Rig: --- Date Started: 9/8/05	Geologist: Stephen Tauss Drilling Method: --- Drive Hammer Weight: NA Date Completed: 9/8/05	Boring Completion Depth: 8' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium silty SAND and fine to medium GRAVEL.	
2' - 4'	2	HA	24	0.000	0.0	Same as above.	
4' - 6'	3	HA	24	0.000	0.0	Brown, fine to medium SAND and fine to medium GRAVEL.	
6' - 8'	4	HA	24	0.000	0.0	Tannish brown, fine to medium SAND, some fine to medium gravel.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Samples for mercury analysis were collected at 2'-4', 4'-6' and 6'-8'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2229
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-11
Sheet 1 **of** 1
By: Stephen Tauss

Drilling Contractor: L.A.W.E.S.
Driller: ---
Drill Rig: ---
Date Started: 9/9/05

Geologist: Stephen Tauss
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 9/9/05

Boring Completion Depth: 4'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown fine to medium silty SAND and fine to medium GRAVEL, some crushed stone, concrete and slag.	
2' - 4'	2	HA	24	0.000	0.0	Brown- light brown fine silty SAND and fine GRAVEL.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Sample for mercury analysis was collected at 2'-4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2229 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-12 **Sheet** 1 **of** 1 **By:** Stephen Tauss
Drilling Contractor: L.A.W.E.S. **Driller:** --- **Drill Rig:** --- **Date Started:** 9/9/05	**Geologist:** Stephen Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 9/9/05	**Boring Completion Depth:** 4' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium silty SAND, some fine gravel.	
2' - 4'	2	HA	24	0.000	0.0	Same as above.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Sample for mercury analysis was collected at 2'-4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2229 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-13 Sheet 1 of 1 By: Stephen Tauss
Drilling Contractor: L.A.W.E.S. Driller: --- Drill Rig: --- Date Started: 9/9/05	Geologist: Stephen Tauss Drilling Method: --- Drive Hammer Weight: NA Date Completed: 9/9/05	Boring Completion Depth: 4' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown, fine silty SAND, some fine gravel and crushed stone, concrete and slag.	
2' - 4'	2	HA	24	0.000	0.0	Brown-light brown, fine to medium silty SAND and fine GRAVEL.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Sample for mercury analysis was collected at 2'-4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2229 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-14 Sheet 1 of 1 By: Stephen Tauss
Drilling Contractor: L.A.W.E.S. **Driller:** --- **Drill Rig:** --- **Date Started:** 9/9/05	**Geologist:** Stephen Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 9/9/05	**Boring Completion Depth:** 4' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown, fine silty SAND, some fine gravel and crushed stone, concrete and slag.	
2' - 4'	2	HA	24	0.000	0.0	Brown-light brown, fine to medium silty SAND and fine GRAVEL.	

Sample Types:	NOTES:
SS = Split Spoon HA = Hand Auger GP = Geoprobe Sampler CC = Concrete Core	Sample for mercury analysis was collected at 2'-4'.

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Dvirka and Bartilucci CONSULTING ENGINEERS

	Project No.: 2229 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-15 **Sheet** 1 **of** 1 **By:** Stephen Tauss
Drilling Contractor: L.A.W.E.S. **Driller:** --- **Drill Rig:** --- **Date Started:** 2/28/06	**Geologist:** Stephen Tauss **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 2/28/06	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0-4" Brown, silty fine to medium SAND and concrete fragments and ballast. 4"-2 Brown, fine to medium SAND, some fine gravel and ballast.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Sample for UIC constituent analysis was collected at 0-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2229 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-17 **Sheet** 1 **of** 1 **By:** Stephen Tauss
Drilling Contractor: L.A.W.E.S. **Driller:** --- **Drill Rig:** — **Date Started:** 9/9/05	**Geologist:** Stephen Tauss **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 9/9/05	**Boring Completion Depth:** 4' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Blackish-brown, fine to medium silty SAND and fine to medium GRAVEL and CRUSHED STONE.	
2' - 4'	2	HA	24	0.000	0.0	Orange brown, fine to medium SAND, some fine gravel.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Samples for PCBs, RCRA metals and SVOCs analysis were collected at 0-2' and 2'-4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2229 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-18 **Sheet** 1 **of** 1 **By:** Stephen Tauss
Drilling Contractor: L.A.W.E.S. **Driller:** --- **Drill Rig:** — **Date Started:** 9/9/05	**Geologist:** Stephen Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 9/9/05	**Boring Completion Depth:** 4' **Ground Surface Elevation:** — **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium silty SAND and fine GRAVEL, some crushed stone and brick fragments.	
2' - 4'	2	HA	24	0.000	0.0	Light brown, fine to medium silty SAND, some clay and fine gravel.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Samples for PCBs, RCRA metals and SVOCs analysis were collected at 0-2' and 2'-4'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

	Project No.: 2229 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-19 **Sheet** 1 **of** 1 **By:** Stephen Tauss
Drilling Contractor: L.A.W.E.S. **Driller:** --- **Drill Rig:** --- **Date Started:** 9/9/05	**Geologist:** Stephen Tauss **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 9/9/05	**Boring Completion Depth:** 4' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Blackish-brown, fine to medium silty SAND, some fine gravel.	
2' - 4'	2	HA	24	0.000	0.0	Blackish-brown, fine to medium SAND and fine GRAVEL.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Samples for PCBs, RCRA metals and SVOCs analysis were collected at 0-2' and 2'-4'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2229
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-20
Sheet 1 **of** 1
By: Stephen Tauss

Drilling Contractor: L.A.W.E.S.
Driller: —
Drill Rig: ---
Date Started: 9/9/05

Geologist: Stephen Tauss
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 9/9/05

Boring Completion Depth: 4'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Blackish-brown, fine to medium SILTY SAND, some fine gravel.	
2' - 4'	2	HA	24	0.000	0.0	Blackish-brown, fine to medium SAND and fine GRAVEL.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Sample for mercury analysis was collected at 2'-4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2229 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-21 Sheet 1 of 1 By: Stephen Tauss
Drilling Contractor: L.A.W.E.S. **Driller:** — **Drill Rig:** --- **Date Started:** 9/9/05	**Geologist:** Stephen Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 9/9/05	**Boring Completion Depth:** 4' **Ground Surface Elevation:** — **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Blackish- brown, fine to medium SILTY SAND and fine to medium GRAVEL, some crushed stone.	
2' - 4'	2	HA	24	0.000	0.0	Brown-light brown, fine clayey SAND, little fine to medium gravel and silt.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Sample for mercury analysis was collected at 2'-4'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2229 **Project Name:** Long Island Railroad Hempstead Substation		**Boring No.:** HSSB-22 **Sheet** 1 **of** 1 **By:** Stephen Tauss
Drilling Contractor: L.A.W.E.S. **Driller:** --- **Drill Rig:** --- **Date Started:** 9/9/05	**Geologist:** Stephen Tauss **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 9/9/05	**Boring Completion Depth:** 4' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Blackish-brown, fine to medium silty SAND, some fine to medium gravel.	
2' - 4'	2	HA	24	0.000	0.0	Same as above.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Sample for mercury analysis was collected at 2'-4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2229 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-23 Sheet 1 of 1 By: Stephen Tauss
Drilling Contractor: L.A.W.E.S. Driller: --- Drill Rig: --- Date Started: 9/8/05	Geologist: Stephen Tauss Drilling Method: --- Drive Hammer Weight: NA Date Completed: 9/8/05	Boring Completion Depth: 4' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium SAND, some fine gravel and crushed stone.	
2' - 4'	2	HA	24	0.008	0.0	Orange-brown, fine to medium silty SAND and fine GRAVEL.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Sample for mercury analysis was collected at 2'-4'.

Dvirka and Bartilucci CONSULTING ENGINEERS

Project No.: 2229
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-24
Sheet 1 **of** 1
By: Stephen Tauss

Drilling Contractor: L.A.W.E.S.
Driller: ---
Drill Rig: ---
Date Started: 9/8/05

Geologist: Stephen Tauss
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 9/8/05

Boring Completion Depth: 4'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Type	Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium SAND and fine to medium GRAVEL.	
2' - 4'	2	HA	24	0.000	0.0	Tannish-brown, fine to medium SAND and fine to medium GRAVEL.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Sample for mercury analysis was collected at 2'-4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2229 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-25 **Sheet** 1 **of** 1 **By:** Stephen Tauss
Drilling Contractor: L.A.W.E.S. **Driller:** --- **Drill Rig:** --- **Date Started:** 9/8/05	**Geologist:** Stephen Tauss **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 9/8/05	**Boring Completion Depth:** 4' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown-black, fine to medium silty SAND, some fine to medium gravel.	
2' - 4'	2	HA	24	0.000	0.0	Same as above.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Sample for mercury analysis was collected at 2'-4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2229 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-26 Sheet 1 of 1 By: Stephen Tauss
Drilling Contractor: L.A.W.E.S. Driller: --- Drill Rig: --- Date Started: 9/8/05	Geologist: Stephen Tauss Drilling Method: --- Drive Hammer Weight: NA Date Completed: 9/8/05	Boring Completion Depth: 4' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.315	0.0	Brown-black, fine to medium silty SAND, some fine to medium gravel.	
2' - 4'	2	HA	24	0.006	0.0	Tannish-brown CLAY, little fine gravel, trace fine sand.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Sample for mercury analysis was collected at 2'-4'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-27
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 2'
Ground Sur ace Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Type	Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some fine gravel, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

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Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-28
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: —
Drill Rig: —
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: —
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Tan to light brown, fine to coarse SAND and fine GRAVEL, some silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

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	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-29 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** — **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, some silt, trace clay and fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

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Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-30
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: —
Driller: —
Drill Rig: —
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Dark brown to tan, fine to coarse SAND and fine GRAVEL, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

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	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-31 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** — **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to coarse SAND and fine GRAVEL, trace silt and glass and brick fragments.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

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CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-32
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Type	Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to coarse SAND and fine GRAVEL, trace silt and glass and brick fragments.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-33 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to coarse SAND and fine GRAVEL, trace silt and glass and brick fragments.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

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	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-34 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 6' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, some silt and bluestone, some brick and concrete fragments.	
2' - 4'	2	HA	24	0.000	0.0	Tan, fine to medium SAND and fine GRAVEL.	
4' - 6'	3	HA	24	0.000	0.0	Same as above.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury and lead analysis were collected at 1'-2', 2'-4' and 4'-6'.

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CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-35
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 6'
Ground Surface Elevation: ---
Boring Diameter: —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0"-6" Bluestone. 6"-2' Dark brown, fine to medium SAND, some fine gravel, trace silt.	
2' - 4'	2	HA	24	0.000	0.0	Dark brown, fine to medium SAND, some fine gravel, trace silt.	
4' - 6'	3	HA	24	0.000	0.0	Same as above.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury analysis were collected at 1'-2', 2'-4' and 4'-6'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-36 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: — Driller: --- Drill Rig: --- Date Started: 3/19/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 3/19/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some silt, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-37 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** — **Drill Rig:** --- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some silt, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-38
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: —
Driller: ---
Drill Rig: ---
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: —
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some silt, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

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Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-39 Sheet _1_ of _1_ By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: — Date Started: 3/19/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 3/19/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some silt, trace fine gravel.	

Sample Types:	NOTES:
HA = Hand Auger	Sample for mercury analysis was collected at 1'-2'.

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CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-40
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: —
Driller: —
Drill Rig: —
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 6'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0"-6" Bluestone. 6"-2' Dark brown, fine to medium SAND, some fine gravel, trace silt.	
2' - 4'	2	HA	24	0.000	0.0	Dark brown, fine to medium SAND, some fine gravel, trace silt.	
4' - 6'	3	HA	24	0.000	0.0	Same as above.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury and lead analysis were collected at 1'-2', 2'-4' and 4'-6'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-41 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** --- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0"-2" Bluestone and fine gravel. 2"-2' Dark brown, fine to medium SAND, some silt, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-42 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** — **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0"-2" Bluestone and fine gravel. 2"-2' Dark brown, fine to medium SAND, trace silt and fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury analysis was collected at 1'-2'.

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Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation		**Boring No.:** HSSB-43 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** -- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0"-2" Bluestone and fine gravel. 2"-2' Dark brown, fine to medium SAND, trace silt and fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-44 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 3/19/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 3/19/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, some fine gravel, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

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CONSULTING ENGINEERS

Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-45 **Sheet** 1 **of** 1 **By:** Paul Barusich	
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, some fine gravel, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-46
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: —
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, some fine gravel, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-47 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** — **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** — **Boring Diameter:** —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0"-6" Bluestone and fine gravel. 6"-2' Dark brown, fine to medium SAND, some silt, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury and lead analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-49 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some silt, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury analysis were collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-50 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: — Date Started: 3/19/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 3/19/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some fine gravel, trace silt.	

Sample Types:	NOTES:
HA = Hand Auger	Samples for mercury analysis were collected at 1'-2'.

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CONSULTING ENGINEERS

Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-51 **Sheet** 1 **of** 1 **By:** Paul Barusich	
Drilling Contractor: — **Driller:** --- **Drill Rig:** --- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** — **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some fine gravel, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-52
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, trace silt and fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

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Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-53 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: — Driller: --- Drill Rig: --- Date Started: 3/19/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 3/19/2009	Boring Completion Depth: 6' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0"-6" Bluestone. 6"-2' Dark brown, fine to medium SAND, some fine gravel, trace silt.	
2' - 4'	2	HA	24	0.000	0.0	Dark brown, fine to medium SAND, some fine gravel, trace silt.	
4' - 6'	3	HA	24	0.000	0.0	Same as above.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury analysis were collected at 1'-2', 2'-4' and 4'-6'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-54 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** --- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** — **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some fine gravel, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-55 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some fine gravel, trace silt.	

Sample Types:	**NOTES:**
HA = Hand Auger	Sample for mercury analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-56 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: — Date Started: 3/19/2009	Geologist: Paul Barusich Drilling Method: — Drive Hammer Weight: NA Date Completed: 3/19/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some fine gravel, trace silt.	

Sample Types:	NOTES:
HA = Hand Auger	Sample for mercury analysis was collected at 1'-2'.

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CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-57
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: —
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some fine gravel, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

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Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-58 **Sheet** 1 **of** 1 **By:** Paul Barusich	
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some fine gravel, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-59
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: —
Driller: —
Drill Rig: —
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 6'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Type	Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0"-2" Bluestone and fine gravel. 2"-2' Dark brown, fine to medium SAND, trace silt and fine gravel.	
2' - 4'	2	HA	24	0.000	0.0	Light brown to tan, fine to medium SAND, trace silt and fine gravel.	
4' - 6'	3	HA	24	0.000	0.0	Same as above.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury analysis were collected at 1'-2', 2'-4' and 4'-6'.

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CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-60
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: —
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: —
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 6'
Ground Surface Elevation: ---
Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, trace organics and silt.	
2' - 4'	2	HA	24	0.000	0.0	Light brown to tan, fine to medium SAND, some silt.	
4' - 6'	3	HA	24	0.000	0.0	Tan to light brown, fine to coarse SAND and fine GRAVEL, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury analysis were collected at 1'-2', 2'-4' and 4'-6'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-61 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** — **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 6' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, trace silt and fine gravel.	
2' - 4'	2	HA	24	0.000	0.0	Same as above.	
4' - 6'	3	HA	24	0.000	0.0	Same as above.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury analysis were collected at 1'-2', 2'-4' and 4'-6'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-62 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: — Date Started: 3/19/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 3/19/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, trace silt and fine gravel.	

Sample Types:	NOTES:
HA = Hand Auger	Samples for mercury, lead and SVOC analysis were collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-63 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 3/19/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 3/19/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, trace silt and fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury, lead and SVOC analysis were collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-64 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 6/11/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 6/11/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some silt, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-65
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: —
Driller: ---
Drill Rig: —
Date Started: 6/11/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 6/11/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some silt and fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-66
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: —
Date Started: 6/11/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 6/11/2009

Boring Completion Depth: 2'
Ground Surface Elevation: —
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium SAND, some fine gravel, trace silt and bluestone.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-67 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 6/11/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 6/11/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Dark brown, fine to medium SAND, trace fine gravel and bluestone. 1' - 2' Dark brown to dark gray, CINDERS and ASH, some fine gravel and fill debris.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-68
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: —
Date Started: 6/11/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 6/11/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Light brown, fine to medium SAND, some silt, trace bluestone and fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury were collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-69 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 6/11/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 6/11/2009	**Boring Completion Depth:** 4' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some silt, trace fine gravel and bluestone.	
2' - 4'	2	HA	24	0.100	0.0	Brown to dark brown, fine to medium SAND, some silt, trace fine to coarse gravel and bluestone.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury were collected at 1'- 2' and 2' - 4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-70 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 6/11/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 6/11/2009	Boring Completion Depth: 4' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Light brown, fine to medium SAND, some silt, trace bluestone and fine gravel.	
2' - 4'	2	HA	24	0.000	0.0	Light brown, fine to medium SAND, some silt, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury were collected at 1'- 2' and 2' - 4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-71 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 5/21/2009	Geologist: Keith Robins Drilling Method: --- Drive Hammer Weight: NA Date Completed: 5/21/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, trace fine gravel, no odor, dry.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury were collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-72 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 6/11/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 6/11/2009	**Boring Completion Depth:** 2' **Ground Sur ace Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, some brick fragments and organic matter, trace silt and wood bits.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for lead was collected at 1'- 2'.

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CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-73
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 6/11/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 6/11/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, some brick fragments and organic matter, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for lead was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-76 **Sheet** 1 **of** 1 **By:** Paul Barusich	
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 6/11/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 6/11/2009	**Boring Completion Depth:** 4' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium SAND, trace bluestone and silt.	
2' - 4'	2	HA	24	0.000	0.0	Light brown to brown, fine to medium SAND, some cinders and ash and fill debris.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury were collected at 1'- 2' and 2' - 4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-77 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 6/11/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 6/11/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Light brown, fine to medium SAND, some silt, trace bluestone and fine gravel. Refusal at 2' in the form of a cement slab.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS

Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-78 **Sheet** _1_ **of** _1_ **By:** Chris Kiernan	
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 5/21/2009	**Geologist:** Keith Robins **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 5/21/2009	**Boring Completion Depth:** 4' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark brown, medium to coarse SAND, trace fine gravel, no odor, dry.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury were collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-79 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: — Date Started: 6/11/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 6/11/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Dark brown, fine to medium SAND, some brick fragments and organic matter, trace silt and wood bits. 1' - 2' Light brown to yellow, fine to coarse SAND, trace brick fragments.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for lead was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-80 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 6/11/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 6/11/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, some brick fragments and organic matter, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for lead was collected at 1'- 2'.

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Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-81 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 6/11/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 6/11/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown to dark brown, fine to medium SAND, trace cobbles and silt. 1' - 2' Light brown, fine to medium SAND, trace fine gravel and silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-82 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 6/11/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 6/11/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown to dark brown, fine to medium SAND, trace cobbles and silt. 1' - 2' Light brown, fine to medium SAND, trace fine gravel and silt and cinders and ash.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-83 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: — Drill Rig: --- Date Started: 8/26/2009	Geologist: Steve Tauss Drilling Method: — Drive Hammer Weight: NA Date Completed: 8/26/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Black-Brown F-M SAND, some clinker and F-M gravel, loose, moist, no odor, no staining. 1' - 2' Same as above.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-84 **Sheet** _1_ **of** _1_ **By:** Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** — **Date Started:** 8/26/2009	**Geologist:** Steve Tauss **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 8/26/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Black F-M SAND and F-C GRAVEL, some asphalt, grey cinder, dense, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-85
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 8/26/2009

Geologist: Steve Tauss
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 8/26/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Type	Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Black F-M SAND and F-C GRAVEL, some asphalt, grey cinder, dense, no odor, no staining.	
2' - 3'	2	HA	12	0.000	0.0	Brown F-M SAND, trace fine gravel, loose, dry, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury were collected at 1'- 2', and 2' - 3'.

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CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-86 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** — **Date Started:** 8/26/2009	**Geologist:** Steve Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 8/26/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Black F-M SAND and F-C GRAVEL, some asphalt, grey cinder, dense, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

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	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-87 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** — **Date Started:** 8/26/2009	**Geologist:** Steve Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 8/26/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Black F-M SAND and F-C GRAVEL, some asphalt, grey cinder, dense, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-88 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** — **Date Started:** 8/26/2009	**Geologist:** Steve Tauss **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 8/26/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, some F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown F-M SAND and SILT, some F-M gravel, gray F-M sand, and brick fragments, loose, dry, no odor, no staining.	

Sample Types:	**NOTES:**
HA = Hand Auger	Sample for mercury was collected at 1'- 2'.

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Project No.: 2801	**Boring No.:** HSSB-90	
Project Name: Long Island Railroad Hempstead Substation	**Sheet** 1 **of** 1	
	By: Paul Barusich	

Drilling Contractor: ---	**Geologist:** Steve Tauss	**Boring Completion Depth:** 2'
Driller: ---	**Drilling Method:** ---	**Ground Surface Elevation:** ---
Drill Rig: —	**Drive Hammer Weight:** NA	**Boring Diameter:** ---
Date Started: 8/26/2009	**Date Completed:** 8/26/2009	

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Grayish brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-91
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: —
Driller: ---
Drill Rig: —
Date Started: 8/26/2009

Geologist: Steve Tauss
Drilling Method: —
Drive Hammer Weight: NA
Date Completed: 8/26/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Orange-Brown F-M SAND, little F-M gravel, loose, dry, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

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Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-92 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** --- **Date Started:** 8/26/2009	**Geologist:** Steve Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 8/26/2009	**Boring Completion Depth:** 8' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, some F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown F-M SAND and SILT, little clinker and cinder, F-M gravel, loose, dry, no odor, no staining.	
2' - 4'	2	HA	24	0.000	0.0	Same as above.	
4' - 6'	3	HA	24	0.000	0.0	Brown F-M SAND and CLAY, some fine grvel, dense, moist, no odor, no staining.	
6' - 8'	4	HA	24	0.000	0.0	Brown medium SAND and F-M GRAVEL, loose, moist, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Samples for mercury were collected at 4' - 6' and 6' - 8'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-93 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 8/26/2009	**Geologist:** Steve Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 8/26/2009	**Boring Completion Depth:** 8' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, some F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown F-M SAND and SILT, little clinker and cinder, F-M gravel, loose, dry, no odor, no staining.	
2' - 4'	2	HA	24	0.000	0.0	Same as above.	
4' - 6'	3	HA	24	0.000	0.0	Brown F-M SAND and CLAY, some fine grvel, dense, moist, no odor, no staining.	
6' - 8'	4	HA	24	0.000	0.0	Brown medium SAND and F-M GRAVEL, loose, moist, no odor, no staining.	

Sample Types:	**NOTES:**
HA = Hand Auger	Samples for mercury were collected at 4' - 6' and 6' - 8'.

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Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-94
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: —
Date Started: 8/26/2009

Geologist: Steve Tauss
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 8/26/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Black F-M SAND and F-C GRAVEL, some asphalt, grey cinder, dense, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

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Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-95
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 8/26/2009

Geologist: Steve Tauss
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 8/26/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Black F-M SAND and F-C GRAVEL, some asphalt, grey cinder, dense, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-96 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: — Date Started: 8/26/2009	Geologist: Steve Tauss Drilling Method: --- Drive Hammer Weight: NA Date Completed: 8/26/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Black F-M SAND and F-C GRAVEL, some asphalt, grey cinder, dense, no odor, no staining.	

Sample Types:	NOTES:
HA = Hand Auger	Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-97 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 8/26/2009	Geologist: Steve Tauss Drilling Method: — Drive Hammer Weight: NA Date Completed: 8/26/2009	Boring Completion Depth: 2' Ground Sur ace Elevation: --- Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Black F-M SAND and F-C GRAVEL, some asphalt, grey cinder, dense, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

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	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-98 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 8/26/2009	**Geologist:** Steve Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 8/26/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Grayish brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-99 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** --- **Date Started:** 8/26/2009	**Geologist:** Steve Tauss **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 8/26/2009	**Boring Completion Depth:** 2' **Ground Sur ace Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Grayish brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

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CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-100
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 8/26/2009

Geologist: Steve Tauss
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 8/26/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Brown-Grayish brown F-M SAND and SILT, little F-M gravel, loose, dry, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

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CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-101
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: —
Driller: —
Drill Rig: —
Date Started: 8/26/2009

Geologist: Steve Tauss
Drilling Method: —
Drive Hammer Weight: NA
Date Completed: 8/26/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND, little F-M gravel, loose, dry, no odor, no staining. 1' - 2' Orange-Brown F-M SAND, little F-M gravel, loose, dry, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-102 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: — Driller: --- Drill Rig: --- Date Started: 8/26/2009	Geologist: Steve Tauss Drilling Method: --- Drive Hammer Weight: NA Date Completed: 8/26/2009	Boring Completion Depth: 4' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0' - 1' Brown F-M SAND and SILT, little F-M gravel and clinker, loose, moist, no odor, no staining. 1' - 2' Same as above	
2' - 4'	2	HA	24	0.000	0.0	Brown F-M SAND and SILT, little F-M gravel, loose, moist, no odor, no staining.	

Sample Types:	NOTES:
HA = Hand Auger	Samples for mercury were collected at 1' - 2' and 2' - 4'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-103 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: — Driller: --- Drill Rig: --- Date Started: 11/5/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 11/5/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' – 2'	1	HA	24	0.000	0.0	Brown-Black F-M SAND, some fine gravel and clinker, trace silt, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-104 **Sheet** 1 **of** 1 **By:** Paul Barusich	
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 11/5/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 11/5/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' – 2'	1	HA	24	0.000	0.0	Tan-Black F-M SAND, some fine gravel, trace silt and clinker, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-105 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** — **Date Started:** 11/5/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 11/5/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** — **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark Brown-Black F-M SAND, some cinder, trace silt and fine gravel, no staining, no odor.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-106 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: — Drill Rig: --- Date Started: 11/5/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 11/5/2009	Boring Completion Depth: 1.5' Ground Surface Elevation: --- Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' – 1.5'	1	HA	18	0.000	0.0	Brown-Black F-M SAND, some fine gravel and clinker, trace silt, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 1.5'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-107 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: — Date Started: 11/5/2009	Geologist: Steve Tauss Drilling Method: --- Drive Hammer Weight: NA Date Completed: 11/5/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown F-M SAND and SILT, some fine gravel and organic matter, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-108 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: — Date Started: 11/5/2009	Geologist: Steve Tauss Drilling Method: --- Drive Hammer Weight: NA Date Completed: 11/5/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown F-M SAND and SILT, some roots and organic matter, trace fine gravel, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-109 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** — **Date Started:** 11/5/2009	**Geologist:** Steve Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 11/5/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown F-M SAND and SILT, some roots and organic matter, trace fine gravel, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-110 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 11/5/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 11/5/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' – 2'	1	HA	24	0.000	0.0	Brown-Black F-M SAND, some fine gravel and clinker, trace silt, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-111 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: — Date Started: 11/5/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 11/5/2009	Boring Completion Depth: 2' Ground Sur ace Elevation: --- Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' – 2'	1	HA	24	0.000	0.0	Tan-Black F-M SAND, some fine gravel, trace silt and clinker, no odor, no staining.	

Sample Types:	NOTES:
HA = Hand Auger	Sample for mercury was collected at 1'- 2'.

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Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-112 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: — Drill Rig: --- Date Started: 11/5/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 11/5/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' – 2'	1	HA	24	0.000	0.0	Tan-Black F-M SAND, some fine gravel, trace silt and clinker, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-113 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 11/5/2009	Geologist: Paul Barusich Drilling Method: — Drive Hammer Weight: NA Date Completed: 11/5/2009	Boring Completion Depth: 2' Ground Sur ace Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' – 2	1	HA	18	0.000	0.0	Dark Brown-Black F-M SAND, some cinder, trace silt and fine gravel, no staining, no odor.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-114 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** — **Date Started:** 11/5/2009	**Geologist:** Paul Barusich **Drilling Method:** —- **Drive Hammer Weight:** NA **Date Completed:** 11/5/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' – 2	1	HA	18	0.000	0.0	Brown-Black F-M SAND, some fine gravel, trace silt and slag, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2.

Dvirka and Bartilucci
CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-115 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: — **Driller:** --- **Drill Rig:** — **Date Started:** 11/5/2009	**Geologist:** Steve Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 11/5/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown F-M SAND and SILT, some fine gravel and organic matter, no odor, no staining.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-116 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 11/5/2009	**Geologist:** Steve Tauss **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 11/5/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Brown F-M SAND and SILT, some roots and organic matter, trace fine gravel, no odor, no staining.	

Sample Types: HA = Hand Auger	**NOTES:** Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-117 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: — Driller: — Drill Rig: --- Date Started: 11/5/2009	Geologist: Steve Tauss Drilling Method: --- Drive Hammer Weight: NA Date Completed: 11/5/2009	Boring Completion Depth: 2' Ground Sur ace Elevation: --- Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown F-M SAND and SILT, some roots and organic matter, trace fine gravel, no odor, no staining.	

Sample Types:	NOTES:
HA = Hand Auger	Sample for mercury was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-118 **Sheet** 1 **of** 1 **By:** Chris Kiernan
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 12/30/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 12/30/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, trace silt, trace fine gravel, trace fine organic matter.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for lead analysis was collected at 1'- 2'.

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Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-119 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 12/30/2010	Geologist: Paul Barusich Drilling Method: — Drive Hammer Weight: NA Date Completed: 12/30/2010	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Dark brown, fine to medium SAND, trace fine gravel, trace silt, trace organic matter. 1.5 – 2' Brown, fine to medium SAND and gray, coarse GRAVEL, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for lead analysis was collected at 1'- 2'.

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Dvirka and Bartilucci CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-120 **Sheet** 1 **of** 1 **By:** Chris Kiernan
Drilling Contractor: — **Driller:** --- **Drill Rig:** — **Date Started:** 12/30/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 12/30/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 1' Brown, fine to medium SAND and fine GRAVEL, trace silt and organic matter. 1 – 1.5' Black-Gray, asphalt and slag. 1.5 – 2' Gray, fine GRAVEL and ash.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for lead analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-121 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: — **Driller:** --- **Drill Rig:** --- **Date Started:** 12/30/2010	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 12/30/2010	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0 – 1' Dark brown, fine to medium SAND, some organic matter, trace clay and silt. 1 – 2' Brown-Orange, fine to medium SAND, trace clay, trace silt, trace organic matter.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-122
Sheet 1 **of** 1
By: Chris Kiernan

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 12/30/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 12/30/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Dark brown, fine to medium SAND, trace clay, trace silt, trace fine gravel. 1.5 – 2' Light brown, fine to medium SAND, trace clay, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-123 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: --- Driller: --- Drill Rig: — Date Started: 12/30/2009	Geologist: Paul Barusich Drilling Method: — Drive Hammer Weight: NA Date Completed: 12/30/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Dark brown, fine to medium SAND, trace silt, trace clay, trace fine gravel, trace organic matter. 1.5 – 2' Brown-Light brown, fine to medium SAND, trace silt, trace clay, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-124
Sheet 1 **of** 1
By: Chris Kiernan

Drilling Contractor: ---
Driller: —
Drill Rig: ---
Date Started: 12/30/2009

Geologist: Paul Barusich
Drilling Method: —
Drive Hammer Weight: NA
Date Completed: 12/30/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Brown, fine to medium SAND, trace silt, trace clay, trace fine gravel, trace organic matter. 1.5 – 2' Light brown, fine to medium SAND, some clay, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-125 **Sheet** 1 **of** 1 **By:** Chris Kiernan
Drilling Contractor: — **Driller:** --- **Drill Rig:** --- **Date Started:** 12/30/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 12/30/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 1' Brown, fine to medium SAND and fine GRAVEL, trace silt, trace brick fragments. 1 –2 ' Brown-Dark brown, fine to medium SAND and fine GRAVEL, some brick and asphalt fragments, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for lead analysis was collected at 1'- 2'.

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Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-126 **Sheet** 1 of 1 **By:** Chris Kiernan
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 12/30/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 12/30/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 1' Brown, fine to medium SAND and fine GRAVEL, trace silt, trace brick fragments. 1 –2 ' Brown-Dark brown, fine to medium SAND and fine GRAVEL, some brick and asphalt fragments, trace silt.	

Sample Types:	**NOTES:**
HA = Hand Auger	Sample for lead analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-127 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: --- Driller: --- Drill Rig: — Date Started: 12/30/2009	Geologist: Paul Barusich Drilling Method: — Drive Hammer Weight: NA Date Completed: 12/30/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0 – 1' Brown, fine to medium SAND and fine GRAVEL, trace silt and organic matter. 1 – 1.5' Black-Gray, asphalt and slag. 1.5 – 2' Gray, fine GRAVEL and ash.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for lead analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-130 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 12/30/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 12/30/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Dark brown, fine to medium SAND, trace silt, trace clay, trace fine gravel, trace organic matter. 1.5 – 2' Brown-Light brown, fine to medium SAND, trace silt, trace clay, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-131 **Sheet** 1 **of** 1 **By:** Chris Kiernan
Drilling Contractor: --- **Driller:** --- **Drill Rig:** — **Date Started:** 12/30/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 12/30/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Brown, fine to medium SAND, trace silt, trace clay, trace fine gravel, trace organic matter. 1.5 – 2' Light brown, fine to medium SAND, some clay, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-132 **Sheet** 1 of 1 **By:** Chris Kiernan
Drilling Contractor: --- **Driller:** --- **Drill Rig:** — **Date Started:** 12/30/2009	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 12/30/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Brown, fine to medium SAND, trace fine gravel, trace silt, trace organic matter. 1.5 – 2' Light brown-Tan, fine to coarse SAND, trace silt and fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-133 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 12/30/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 12/30/2009	Boring Completion Depth: 2' Ground Sur ace Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Brown, fine to medium SAND, trace silt, trace clay, trace fine gravel, trace organic matter. 1.5 – 2' Light brown, fine to medium SAND, some clay, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-134
Sheet 1 **of** 1
By: Chris Kiernan

Drilling Contractor: —
Driller: ---
Drill Rig: ---
Date Started: 12/30/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 12/30/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Brown, fine to medium SAND, , trace silt, trace clay, trace fine gravel, trace organic matter. 1.5 – 2' Light brown, fine to medium SAND, some clay, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-135 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: — Driller: --- Drill Rig: --- Date Started: 12/30/2009	Geologist: Paul Barusich Drilling Method: — Drive Hammer Weight: NA Date Completed: 12/30/2009	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Brown, fine to medium SAND, trace silt, trace clay, trace fine gravel, trace organic matter. 1.5 – 2' Light brown, fine to medium SAND, some clay, trace silt.	

Sample Types:	NOTES:
HA = Hand Auger	Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-136
Sheet 1 **of** 1
By: Chris Kiernan

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 12/30/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 12/30/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Brown, fine to medium SAND, trace silt, trace clay, trace fine gravel, trace organic matter. 1.5 – 2' Light brown, fine to medium SAND, some clay, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-138 **Sheet** 1 **of** 1 **By:** Chris Kiernan	
Drilling Contractor: — **Driller:** --- **Drill Rig:** — **Date Started:** 12/30/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 12/30/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Dark brown, fine to medium SAND, trace silt, trace clay, trace fine gravel, trace organic matter. 1.5 – 2' Brown-Light brown, fine to medium SAND, trace silt, trace clay, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-140 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 12/30/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 12/30/2009	Boring Completion Depth: 2' Ground Surface Elevation: — Boring Diameter: —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0 – 1.5' Brown, fine to medium SAND, trace silt, trace clay, trace fine gravel, trace organic matter. 1.5 – 2' Light brown, fine to medium SAND, some clay, trace silt.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

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Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-141 **Sheet** 1 **of** 1 **By:** Chris Kiernan
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 2/3/2010	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 2/3/2010	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium SAND and fine GRAVEL, some organic matter, trace silt, no sheen, no odor.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for lead analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-142 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 2/3/2010	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 2/3/2010	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium SAND and organic matter, trace fine gravel and silt, no staining, no odor.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-143 **Sheet** _1_ **of** _1_ **By:** Chris Kiernan
Drilling Contractor: — **Driller:** --- **Drill Rig:** — **Date Started:** 2/3/2010	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 2/3/2010	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium SAND and organic matter, trace fine gravel and silt, no staining, no odor.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-144
Sheet 1 **of** 1
By: Chris Kiernan

Drilling Contractor: —
Driller: ---
Drill Rig: ---
Date Started: 2/3/2010

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 2/3/2010

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 1' Dark brown, organic rich TOP SOIL. 1 – 2' Tan, fine to medium SAND and CLAY.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-150 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: — Driller: --- Drill Rig: — Date Started: 2/3/2010	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 2/3/2010	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium SAND, some fine gravel, trace silt and organic matter.	

Sample Types:	NOTES:
HA = Hand Auger	Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-151 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: — Driller: --- Drill Rig: --- Date Started: 2/3/2010	Geologist: Paul Barusich Drilling Method: — Drive Hammer Weight: NA Date Completed: 2/3/2010	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium SAND and organic matter, trace fine gravel and silt, no staining, no odor.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-152 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 5/18/2010	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 5/18/2010	Boring Completion Depth: 2' Ground Surface Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0 – 0.5' Cement. 0.5 – 1' Brown-Gray, fine to medium SAND, some silt and organic matter, wet, no staining, no odor. 1 – 2' Light brown, fine to medium SAND, some silt and organic matter, wet, no staining, no odor.	

Sample Types:	NOTES:
HA = Hand Auger	Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSSB-153
Sheet 1 **of** 1
By: Chris Kiernan

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 5/18/2010

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 5/18/2010

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 0.25' Cement. 0.25 – 1' Brown-Gray, fine to medium SAND, some silt and organic matter, wet, no staining, no odor. 1 – 2' Light brown, fine to medium SAND, some silt and organic matter, wet, no staining, no odor.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS

Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSSB-154 **Sheet** 1 **of** 1 **By:** Chris Kiernan	
Drilling Contractor: — **Driller:** --- **Drill Rig:** --- **Date Started:** 5/18/2010	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 5/18/2010	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	0 – 0.25' Cement. 0.25 – 0.5' Coarse GRAVEL and cobbles. 0.5 – 1' Brown-Gray, fine to medium SAND, some silt, trace clay and organic matter, no sheen, no odor. 1 – 2' Tan, fine to medium SAND, some silt, trace fine gravel and organic matter, no staining, no odor.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSSB-155 Sheet 1 of 1 By: Chris Kiernan
Drilling Contractor: --- **Driller:** --- **Drill Rig:** — **Date Started:** 5/18/2010	**Geologist:** Paul Barusich **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 5/18/2010	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	0 – 0.33' Cement. 0.33 – 1.5' Brown, fine to medium SAND, some silt and organic matter, trace fine gravel, wet, no staining, no odor. 1.5 – 2' Tan, fine to medium SAND, trace silt and organic matter, no sheen, no odor.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for mercury analysis was collected at 1'- 2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2229 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSTP-01 Sheet 1 of 1 By: Stephen Tauss
Drilling Contractor: L.A.W.E.S. **Driller:** --- **Drill Rig:** Geoprobe **Date Started:** 9/9/05	**Geologist:** Stephen Tauss **Drilling Method:** — **Drive Hammer Weight:** NA **Date Completed:** 9/9/05	**Boring Completion Depth:** 10' **Ground Surface Elevation:** --- **Boring Diameter:** —

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown, fine to medium SAND and fine to medium GRAVEL.	
2' - 4'	2	HA	24	0.018	0.0	Same as above.	
4' - 6'	3	GP	24	0.000	0.0	Orange-brown, fine to medium SAND and fine to medium GRAVEL.	
6' - 8'	4	GP	24	0.000	0.0	Same as above.	
8' - 10'	5	GP	24	0.000	0.0	Blackish-orange medium SAND and fine to medium GRAVEL, some fine sand.	

Sample Types:
SS = Split Spoon
HA = Hand Auger
GP = Geoprobe Sampler
CC = Concrete Core

NOTES:
Samples for UIC constituents analysis were collected at 0-2', 2'-4', 4'-6', 6'-8' and 8'-10'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

Project No.: 2801
Project Name: Long Island Railroad Hempstead Substation

Boring No.: HSWC-01
Sheet 1 **of** 1
By: Paul Barusich

Drilling Contractor: ---
Driller: ---
Drill Rig: ---
Date Started: 3/19/2009

Geologist: Paul Barusich
Drilling Method: ---
Drive Hammer Weight: NA
Date Completed: 3/19/2009

Boring Completion Depth: 2'
Ground Surface Elevation: ---
Boring Diameter: ---

Depth (ft.)	Soil Sample No.	Soil Sample Type	Soil Sample Rec. (inches)	Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
0' - 2'	1	HA	24	0.000	0.0	Dark brown, fine to medium SAND, trace silt and fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for Full TCLP RCRA Waste Characteristics analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSWC-02 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: --- Driller: --- Drill Rig: --- Date Started: 3/19/2009	Geologist: Paul Barusich Drilling Method: --- Drive Hammer Weight: NA Date Completed: 3/19/2009	Boring Completion Depth: 2' Ground Sur ace Elevation: --- Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	6" Bluestone 6" - 2' Dark brown, fine to coarse SAND and fine GRAVEL, trace silt and glass and brick fragments.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for Full TCLP RCRA Waste Characteristics analysis was collected at 1'-2'.

Dvirka and Bartilucci
CONSULTING ENGINEERS

	Project No.: 2801 **Project Name:** Long Island Railroad Hempstead Substation	**Boring No.:** HSWC-03 **Sheet** 1 **of** 1 **By:** Paul Barusich
Drilling Contractor: --- **Driller:** --- **Drill Rig:** --- **Date Started:** 3/19/2009	**Geologist:** Paul Barusich **Drilling Method:** --- **Drive Hammer Weight:** NA **Date Completed:** 3/19/2009	**Boring Completion Depth:** 2' **Ground Surface Elevation:** --- **Boring Diameter:** ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some silt, trace fine gravel.	

Sample Types:
HA = Hand Auger

NOTES:
Sample for Full TCLP RCRA Waste Characteristics analysis was collected at 1'-2'.

Dvirka and Bartilucci CONSULTING ENGINEERS	Project No.: 2801 Project Name: Long Island Railroad Hempstead Substation	Boring No.: HSWC-04 Sheet 1 of 1 By: Paul Barusich
Drilling Contractor: — Driller: --- Drill Rig: — Date Started: 3/19/2009	Geologist: Paul Barusich Drilling Method: — Drive Hammer Weight: NA Date Completed: 3/19/2009	Boring Completion Depth: 2' Ground Surface Elevation: — Boring Diameter: ---

Depth (ft.)	Soil Sample			Mercury Vapor (mg/m^3)	Photo-ionization Detector (ppm)	Sample Description	USCS
	No.	Type	Rec. (inches)				
0' - 2'	1	HA	24	0.000	0.0	Brown to dark brown, fine to medium SAND, some silt, trace fine gravel.	

Sample Types:	NOTES:
HA = Hand Auger	Sample for Full TCLP RCRA Waste Characteristics analysis was collected at 1'-2'.

Appendix D

APPENDIX D

DATA VALIDATOR RESUME

DONNA M. BROWN

Professional Experience

Ms. Brown has over 19 years of experience in project management, data validation, data management and field geology. As part of a broad spectrum of environmental remediation assignments she has worked as the site geologist at a variety of commercial and industrial sites undergoing remedial/site investigations, as well as conducted Phase I and Phase II Environmental Site Assessments in accordance with the American Society for Testing and Materials Standards, federal, state and local agencies, in addition to guidelines established by various lending institutions. Her experience with field activities include supervision of the installation of groundwater monitoring wells, temporary well points, and soil borings in support of subsurface investigations; groundwater and soil sampling for quantitative analysis; obtaining water level measurements; and utilizing portable field instruments.

Ms. Brown developed and managed the Data Validation and Data Management Group for the northeast region of a worldwide environmental consulting firm and was responsible for coordination of validation work load for over 40 projects. In addition, she was responsible for training data validators, providing cost estimates for validation work, preparation of Quality Assurance Project Plans (QAPPs) and Sampling and Analysis Plans (SAPs), validation of data in accordance with the USEPA National Functional Guidelines, USEPA Region II and III, New York State Department of Environmental Conservation (NYSDEC) ASP, New Jersey Department of Environmental Protection, and USEPA Hazardous Waste Support. Ms. Brown also managed and maintained over 20 projects in the GIS/Key database system, interfaced with the analytical laboratories to ensure the successful transfer of electronic laboratory data into the database system; and manipulation of geologic, laboratory, and hydrogeologic data within the Fox Pro, GIS/Key, MS Access, Grapher, Surfer, and AutoCAD programs .

In addition, Ms. Brown is trained in and utilized Environmental Visualization System (EVS) software. EVS software enables the user to provide three-dimensional animations to illustrate subsurface technical issues.

Ms. Brown was responsible for performing data validation of chemical data collected on and offsite at a clean fill demolition debris site and at several aerospace industrial client sites on Long Island utilizing the following protocols:

- USEPA Contract Laboratory Program National Functional Guidelines Organic and Inorganic;
- USEPA Hazardous Waste Support Branch, Validating Air Samples; and
- USEPA Region II, Volatile Organics Analysis of Ambient Air in Canisters By Method TO-15.

In addition, she updated GIS/Key database for chemistry and water level data, proved tables, graphs, and figures associated with project reports; conducted water level and water quality sampling; and prepared quarterly groundwater quality monitoring reports.

She also was responsible for performing data validation of chemical data collected at automotive industry owned sites in New Jersey using New Jersey Department of Environmental Protection Quality Assurance Data Validation of Analytical Deliverables TCL-Organics and TAL-Inorganics, and USEPA Hazardous Waste Support Branch, Validating Air Samples, Volatile Organics Analysis of Ambient Air in Canisters By Method TO-15.

Years Experience

19+

Office Location

Woodbury, NY

Contact

dbrown@db-eng.com

DONNA M. BROWN

As a Project Manager she was responsible for client communications, coordination of field sampling, reviewed and interpreted geologic, hydrogeologic, and chemistry data, report preparation, maintained the database, and data validation for former chemical site in upstate New York.

Ms. Brown was responsible for maintaining the database which contains information from over 20 years of quarterly groundwater monitoring wells and four recovery well; performed data validation of chemical data using USEPA Contract Laboratory Program National Functional Guidelines Organic and Inorganic; proved tables, graphs, and figures associated with project reports, and updated GIS/Key database for chemistry and water level data at a chemical manufacturing site in Albuquerque, New Mexico.

Since joining D&B, Ms. Brown has supported the following activities:

- She is a Quality Assurance/Quality Control officer for the firm and reports to the Quality Assurance/Quality Control Program Manager (Ms. Petrella). Ms. Brown's responsibilities include reviewing all work relating to Quality Assurance/Quality Control for hazardous waste, hazardous substance, manufactured gas plant and solid waste projects undertaken by the firm.

- Ms. Brown is responsible for the data validation and data management (importing data into GIS/Key database and reporting results) of all data packages from ongoing hydrogeologic investigation and landfill closure investigations in Brookhaven and Hauppauge, New York.

- She is responsible for maintaining and updating twelve ongoing projects that use GIS/Key database system.

- For the Former Kings Park Psychiatric Center Project, Ms. Brown is responsible for reviewing all laboratory invoices, confirmation of chemical analysis with the laboratory, conducting data validation and importing all chemistry data and gps site locations into GIS/Key database system, in addition to providing tables, graphs, and AutoCAD figures.

- Ms. Brown has prepared data validation/usability reports for remedial investigation and feasibility studies conducted at numerous New York State Registry Sites, including Active Industrial, LIRR sites, Franklin Cleaners, Petro Oil, and Vanbro. These tasks involved evaluation of the laboratory data to determine compliance with NYSDEC Analytical Services Protocols (ASP), as well as to determine the usability of the data particularly if it was not consistent with ASP requirements.

Appendix E

APPENDIX E

LIRR PROCEDURE/INSTRUCTION EE03-001

Procedure/Instruction: EE03-001
EXCAVATING SOILS AT RAILROAD LOCATIONS

Effective DATE: August 11, 2003

A. Introduction:

At existing railroad shops, yards, substations, right-of-ways and other locations, past operations may have resulted in the chance of soils containing very low levels of chemical substances. Examples may include; trace levels of metals around old painted structures, oils and greases around train yards and repair locations, greasy or sooty compounds left from coal ash ("clinker").

This Procedure/Instruction has been prepared to eliminate any risk that may be posed to LIRR workers who must dig in these locations. It is to be applied on a case by case basis, with any questions referred to Department Management and System Safety.

B. Required Steps/Actions:

1. The first step of any LIRR excavation, regarding the soil composition and possible presence of contaminates, is to review the current System Safety Environmental Audit Map. This map includes all LIRR sites with documented soil contaminates. If your site appears on the map in red it may have soil concerns that could affect your project, contact System Safety before proceeding. If your site is not shown or is shown in black (does not have soil concerns) proceed to Step 2 as follows;

2. When digging at an existing railroad facility, the recommended procedures include:
   a. Wherever possible excavate with mechanical means, such as backhoes, ditch-witches or excavators.

   b. Wash facilities must be available for use by workers at the end of the task, before breaks, before meals, or at the end-of-shift. For field operations, wet-wipes are acceptable for fulfilling this requirement.

   c. Where hand digging must be used, workers must be instructed to brush soil from clothing and shoes. Disposable coveralls, shoe coverings and gloves should be made available upon workers request. Work clothing should be laundered.

   d. All equipment should be cleaned before leaving the worksite. The preferred method is hosing down with water, removing any clumps of dirt and soil. If water is not available, equipment should be brushed clean of any dirt and soil using a broom or stiff brush. Disposable items can be placed in the trash, no special disposal is necessary.

3. Where evidence of soil contamination is found, such as an odor, a stain or visible contaminant, the soil feels greasy, or results from laboratory analysis indicate a contaminant;

   a. Stop any excavation work or only excavate by mechanical means and

   b. Immediately Contact System Safety (information below) to assess the situation.

C. Regulations or Policy References: LIRR Corporate Environmental Policy; Section IV, B, 5

D. System Safety Contacts:

Environmental Engineer;	718-558-3252
Environmental Field Engineer;	718-558-3081

E. Forms & Attachments: None.

Appendix F

APPENDIX F

MERCURY VAPOR SURVEY RESULTS

TABLE 1

LONG ISLAND RAIL ROAD SUBSTATION INVESTIGATION
MERCURY VAPOR MEASUREMENT RESULTS - HEMPSTEAD

(November 8, 1999)

Measurement I.D.	MVA (mg/m^3 Hg)
HSMV-01	0.040
HSMV-02	0.000
HSMV-03	0.000
HSMV-04	0.000
HSMV-05	0.000
HSMV-06	0.000
HSMV-07	0.000
HSMV-08	0.000
HSMV-09	0.000
HSMV-10	0.000
HSMV-11	0.000
HSMV-12	0.000
HSMV-13	0.000
HSMV-14	0.000
HSMV-15	0.000
HSMV-16	0.000
HSMV-17	0.000
HSMV-18	0.000
HSMV-19	0.000
HSMV-20	0.000
HSMV-21	0.000
HSMV-22	0.000
HSMV-23	0.000
HSMV-24	0.000
HSMV-25	0.000
HSMV-26	0.000
HSMV-27	0.000

Notes:
MVA: Mercury vapor analyzer
Mg/m^3 Hg: Milligrams per meter cubed mercury vapor
Instrument detection limit is 0.003 mg/m^3

TABLE 14
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-20 HSSB-20(2-4) 9/9/2005	HSSB-62 HSSB-62(1-2) 3/19/2009	HSSB-63 HSSB-63(1-2) 3/19/2009
2,2-oxybis(1-chloropropane)	(ug/kg)	--	62U	430U	410U
2,4,5-Trichlorophenol	(ug/kg)	--	59U	430U	410U
2,4,6-Trichlorophenol	(ug/kg)	--	57U	430U	410U
2,4-Dichlorophenol	(ug/kg)	--	71U	430U	410U
2,4-Dimethylphenol	(ug/kg)	--	61U	430U	410U
2,4-Dinitrophenol	(ug/kg)	--	330UJ	430U	410U
2,4-Dinitrotoluene	(ug/kg)	--	57U	430U	410U
2,6-Dinitrotoluene	(ug/kg)	--	55U	430U	410U
2-Chloronaphthalene	(ug/kg)	--	64U	430U	410U
2-Chlorophenol	(ug/kg)	--	62U	430U	410U
2-Methylnaphthalene	(ug/kg)	--	64U	430U	410U
3,3-Dichlorobenzidine	(ug/kg)	--	66U	430U	410U
4,6-Dinitro-2-methylphenol	(ug/kg)	--	75UJ	430U	410U
4-Bromophenyl-phenylether	(ug/kg)	--	58U	--	--
4-Bromophenyl-phenylether	(ug/kg)	--	--	430U	410U
4-chlorophenyl-phenylether	(ug/kg)	--	61U	430U	410U
Acenaphthene	(ug/kg)	1000000	69U	430U	410U
Acenaphthylene	(ug/kg)	1000000	63U	430U	410U
Acetophenone	(ug/kg)	--	56U	430U	410U
Anthracene	(ug/kg)	1000000	58U	430U	57J
Atrazine	(ug/kg)	--	59U	430U	70J
Benzaldehyde	(ug/kg)	--	79UJ	430U	410U
Benzo(a)anthracene	(ug/kg)	11000	54U	430U	420
Benzo(a)pyrene	(ug/kg)	1100	62U	64J	490
Benzo(b)fluoranthene	(ug/kg)	11000	42U	93J	740
Benzo(g,h,i)perylene	(ug/kg)	1000000	64U	74J	340J
Benzo(k)fluoranthene	(ug/kg)	110000	85U	430U	200J

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
--: No Standard or not analyzed.
Boxed and shaded exceed standard

TABLE 14
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-20 HSSB-20(2-4) 9/9/2005	HSSB-62 HSSB-62(1-2) 3/19/2009	HSSB-63 HSSB-63(1-2) 3/19/2009
Biphenyl	(ug/kg)	--	64U	430U	410U
Bis(2-chloroethoxy)methane	(ug/kg)	--	63U	430U	410U
Bis(2-chloroethyl)ether	(ug/kg)	--	61U	430U	410U
Bis(2-ethylhexyl)phthalate	(ug/kg)	--	74U	430U	410U
Butylbenzylphthalate	(ug/kg)	--	62U	430U	410U
Caprolactam	(ug/kg)	--	62UJ	430U	410U
Carbazole	(ug/kg)	--	59UJ	430U	410U
Chrysene	(ug/kg)	110000	69U	70J	570
Dibenz(a,h)anthracene	(ug/kg)	1100	48U	430U	84J
Dibenzofuran	(ug/kg)	1000000	64U	430U	410U
Diethylphthalate	(ug/kg)	--	67U	430U	410U
Dimethylphthalate	(ug/kg)	--	62U	430U	410U
Di-n-butylphthalate	(ug/kg)	--	59U	430U	410U
Di-n-octyl phthalate	(ug/kg)	--	66U	430U	410U
Fluoranthene	(ug/kg)	1000000	57U	95J	920
Fluorene	(ug/kg)	1000000	65U	430U	410U
Hexachlorobenzene	(ug/kg)	12000	62U	430U	410U
Hexachlorobutadiene	(ug/kg)	--	59U	430U	410U
Hexachlorocyclopentadiene	(ug/kg)	--	62U	430U	410U
Hexachloroethane	(ug/kg)	--	66U	430U	410U
Indeno(1,2,3-cd)pyrene	(ug/kg)	11000	49UJ	48J	290J
Isophorone	(ug/kg)	--	58U	430U	410U
3-Nitroaniline	(ug/kg)	--	50U	430U	410U
Naphthalene	(ug/kg)	1000000	66U	430U	410U
Nitrobenzene	(ug/kg)	--	84U	430U	410U
N-Nitrosodiphenylamine	(ug/kg)	--	64U	430U	410U
N-Nitroso-di-n-propylamine	(ug/kg)	--	64U	430U	410U

ug/kg: Micrograms per kilogram. --: No Standard or not analyzed.
U: Not detected.
J: Estimated value.
Boxed and shaded exceed standard

TABLE 14
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-20 HSSB-20(2-4) 9/9/2005	HSSB-62 HSSB-62(1-2) 3/19/2009	HSSB-63 HSSB-63(1-2) 3/19/2009
2-Methylphenol	(ug/kg)	1000000	64U	430U	410U
2-Nitroaniline	(ug/kg)	--	49U	430U	410U
2-Nitrophenol	(ug/kg)	--	59U	430U	410U
4-Chloroaniline	(ug/kg)	--	46UJ	430U	410U
4-Chloro-3-methylphenol	(ug/kg)	--	53U	430U	410U
Pentachlorophenol	(ug/kg)	55000	89U	430U	410U
3-Methylphenol/4-Methylphenol	(ug/kg)	1000000	61U	430U	410U
Phenanthrene	(ug/kg)	1000000	61U	430U	350J
Phenol	(ug/kg)	1000000	58U	430U	410U
4-Nitroaniline	(ug/kg)	--	66U	430U	410U
4-Nitrophenol	(ug/kg)	--	48UJ	430U	410U
Pyrene	(ug/kg)	1000000	68U	86J	910
Total Semivolatile Organics	(ug/kg)	--	0	530	5441

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
--: No Standard or not analyzed.
Boxed and shaded exceed standard

TABLE 15
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-62 HSSB-62(1-2) 3/19/2009	HSSB-63 HSSB-63(1-2) 3/19/2009
2,2-oxyblis (1-chloropropane)	(ug/kg)	--	430U	410U
2,4,5-Trichlorophenol	(ug/kg)	--	430U	410U
2,4,6-Trichlorophenol	(ug/kg)	--	430U	410U
2,4-Dichlorophenol	(ug/kg)	--	430U	410U
2,4-Dimethylphenol	(ug/kg)	--	430U	410U
2,4-Dinitrophenol	(ug/kg)	--	430U	410U
2,4-Dinitrotoluene	(ug/kg)	--	430U	410U
2,6-Dinitrotoluene	(ug/kg)	--	430U	410U
2-Chloronaphthalene	(ug/kg)	--	430U	410U
2-Chlorophenol	(ug/kg)	--	430U	410U
2-Methylnaphthalene	(ug/kg)	--	430U	410U
3,3-Dichlorobenzidine	(ug/kg)	--	430U	410U
4,6-Dinitro-o-cresol	(ug/kg)	--	430U	410U
4-Bromophenyl-phenylether	(ug/kg)	--	430U	410U
4-Chlorophenylphenyl ether	(ug/kg)	--	430U	410U
Acenaphthene	(ug/kg)	100000	430U	410U
Acenaphthylene	(ug/kg)	100000	430U	410U
Acetophenone	(ug/kg)	--	430U	410U
Anthracene	(ug/kg)	100000	430U	57J
Atrazine	(ug/kg)	--	430U	70J
Benzaldehyde	(ug/kg)	--	430U	410U
Benzo(a)anthracene	(ug/kg)	1000	430U	420
Benzo(a)pyrene	(ug/kg)	1000	64J	490
Benzo(b)fluoranthene	(ug/kg)	1000	93J	740
Benzo(ghi)perylene	(ug/kg)	100000	74J	340J
Benzo(k)fluoranthene	(ug/kg)	1000	430U	200J

ug/kg: Micrograms per kilogram. --: No Standard or not analyzed.
U: Not detected.
J: Estimated value.

TABLE 15
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-62 HSSB-62(1-2) 3/19/2009	HSSB-63 HSSB-63(1-2) 3/19/2009
Biphenyl	(ug/kg)	--	430U	410U
Bis(2-chloroethoxy)methane	(ug/kg)	--	430U	410U
Bis(2-chloroethyl)ether	(ug/kg)	--	430U	410U
Bis(2-ethylhexyl)phthalate (BEHP)	(ug/kg)	--	430U	410U
Butyl benzyl phthalate	(ug/kg)	--	430U	410U
Caprolactam	(ug/kg)	--	430U	410U
Carbazole	(ug/kg)	--	430U	410U
Chrysene	(ug/kg)	1000	70J	570
Dibenzo(a,h)anthracene	(ug/kg)	330	430U	84J
Dibenzofuran	(ug/kg)	14000	430U	410U
Diethyl phthalate	(ug/kg)	--	430U	410U
Dimethyl phthalate	(ug/kg)	--	430U	410U
Di-n-butyl phthalate	(ug/kg)	--	430U	410U
Di-n-octyl phthalate	(ug/kg)	--	430U	410U
Fluoranthene	(ug/kg)	100000	95J	920
Fluorene	(ug/kg)	100000	430U	410U
Hexachlorobenzene	(ug/kg)	330	430U	410U
Hexachlorobutadiene	(ug/kg)	--	430U	410U
Hexachlorocyclopentadiene	(ug/kg)	--	430U	410U
Hexachloroethane	(ug/kg)	--	430U	410U
Indeno(1,2,3-cd)pyrene	(ug/kg)	500	48J	290J
Isophorone	(ug/kg)	--	430U	410U
m-Nitroaniline	(ug/kg)	--	430U	410U
Naphthalene	(ug/kg)	100000	430U	410U
Nitrobenzene	(ug/kg)	--	430U	410U
N-Nitrosodiphenylamine	(ug/kg)	--	430U	410U
N-Nitrosodipropylamine	(ug/kg)	--	430U	410U

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
--: No Standard or not analyzed.

TABLE 15
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
RESIDENTIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Residential Use SCOs	HSSB-62 HSSB-62(1-2) 3/19/2009	HSSB-63 HSSB-63(1-2) 3/19/2009
o-Cresol	(ug/kg)	100000	430U	410U
o-Nitroaniline	(ug/kg)	--	430U	410U
o-Nitrophenol	(ug/kg)	--	430U	410U
p-Chloroaniline	(ug/kg)	--	430U	410U
p-Chloro-m-cresol	(ug/kg)	--	430U	410U
PCP	(ug/kg)	2400	430U	410U
p-Cresol	(ug/kg)	34000	430U	410U
Phenanthrene	(ug/kg)	100000	430U	350J
Phenol	(ug/kg)	100000	430U	410U
p-Nitroaniline	(ug/kg)	--	430U	410U
p-Nitrophenol	(ug/kg)	--	430U	410U
Pyrene	(ug/kg)	100000	86J	910
Total Semivolatile Organics	(ug/kg)	--	530	5441

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
--: No Standard or not analyzed.

TABLE 16
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
POLYCHLORINATED BIPHENYLS (PCBs)

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-17 HSSB-17(0-2) 9/9/2005	HSSB-17 HSSB-17(2-4) 9/9/2005	HSSB-18 HSSB-18(0-2) 9/9/2005	HSSB-18 HSSB-18(2-4) 9/9/2005	HSSB-19 HSSB-19(0-2) 9/9/2005	HSSB-19 HSSB-19(2-4) 9/9/2005	HSSB-20 HSSB-20(0-2) 9/9/2005	HSSB-20 HSSB-20(2-4) 9/9/2005
Aroclor 1016	(ug/kg)	--	2.8U	3.1U	2.9UJ	2.8UJ	3.2U	2.9U	3.0UJ	3.0UJ
Aroclor 1221	(ug/kg)	--	4.3U	4.7U	4.4U	4.3U	5.0U	4.5U	4.6U	4.6U
Aroclor 1232	(ug/kg)	--	6.5U	7.1U	6.6U	6.4U	7.5U	6.7U	6.9U	6.9U
Aroclor 1242	(ug/kg)	--	5.8U	6.3U	5.9U	5.7U	6.7U	6.0U	6.1U	6.1U
Aroclor 1248	(ug/kg)	--	2.8U	3.1U	2.9U	2.8U	3.2U	2.9U	3.0U	3.0U
Aroclor 1254	(ug/kg)	--	1.8U	2.0U	1.9U	1.8U	2.1U	1.9U	1.9U	1.9U
Aroclor 1260	(ug/kg)	--	51	5.1U	4.7UJ	4.6UJ	5.4U	4.8U	4.9UJ	4.9UJ
Total PCBs (surface soil)	(ug/kg)	25000	51	0	0	0	0	0	0	0

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.

TABLE 17
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
GROUNDWATER SAMPLE RESULTS
TAL METALS

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	HSGP-01 HSGP-01 9/9/2005	HSGP-01 HSGP-01F 9/9/2005	HSGP-02 HSGP-02 9/9/2005	HSGP-02 HSGP-02F 9/9/2005	HSGP-03 HSGP-03 9/9/2005	HSGP-03 HSGP-03F 9/9/2005
Aluminum	(ug/l)	--	18600J	5.310U	44100J	5.310U	34600J	177JB
Antimony	(ug/l)	3	38.5B	3.170U	3.170U	3.170U	109	3.170U
Arsenic	(ug/l)	25	4.850B	3.320U	11.1	3.320U	6.840B	3.320U
Barium	(ug/l)	1000	275	139B	465	87.5B	327	52.3B
Beryllium	(ug/l)	3	0.090U	0.090U	3.610B	0.090U	3.330B	0.090U
Cadmium	(ug/l)	5	0.327U	0.327U	0.327U	0.327U	0.327U	0.327U
Calcium	(ug/l)	--	14500	14600	34200	32600	24100	19100
Chromium	(ug/l)	50	215	0.343U	445	0.343U	307	0.343U
Cobalt	(ug/l)	--	17.8B	7.290B	55.6	10.9B	42.5B	3.580B
Copper	(ug/l)	200	67.7	3.640U	154	3.640U	123	3.640U
Iron	(ug/l)	300	74300	443	141000	271	98000	365
Lead	(ug/l)	25	15.5	2.180U	66.5	2.180U	80.2	2.180U
Magnesium	(ug/l)	35000	5080	2770B	11800	5980	6510	2160B
Manganese	(ug/l)	300	610	357	1600	423	1480	358
Mercury	(ug/l)	0.7	0.0300U	0.0300U	3.779J	0.0300U	6.150J	0.0300U
Nickel	(ug/l)	100	83.7	22.1B	152	14.9B	120	5.620B
Potassium	(ug/l)	--	7510J	5160J	8760J	61.8U	7070J	61.8U
Selenium	(ug/l)	10	3.040U	3.040U	3.040U	3.040U	3.040U	3.040U
Silver	(ug/l)	50	1.640U	1.640U	5.550B	1.640U	2.710B	1.640U
Sodium	(ug/l)	20000	260000	245000	36500	35100	67200	66100
Thallium	(ug/l)	0.5	3.050U	3.050U	3.050U	3.050U	3.050U	3.050U
Vanadium	(ug/l)	--	55.9	0.701U	124	0.701U	97.4	0.701U
Zinc	(ug/l)	2000	176	11.4B	507	17.1B	618	2.710B

ug/l: Micrograms per liter.
U: Not detected.
J: Estimated value.
Boxed and shaded exceed standard

--: No Standard.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.

TABLE 18
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
GROUNDWATER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSGP-01 HSGP-01 9/9/2005	HSGP-02 HSGP-02 9/9/2005	HSGP-03 HSGP-03 9/9/2005
1,1,1-Trichloroethane	(ug/l)	5	0.16U	0.16U	0.16U
1,1,2,2-Tetrachloroethane	(ug/l)	5	0.15U	0.15U	0.15U
1,1,2-Trichlorotrifluoroethane	(ug/l)	--	0.65U	0.65U	0.65U
1,1,2-Trichloroethane	(ug/l)	1	0.20U	0.20U	0.20U
1,1-Dichloroethane	(ug/l)	5	0.19U	0.19U	0.19U
1,1-Dichloroethene	(ug/l)	5	0.21U	0.21U	0.21U
1,2,4-Trichlorobenzene	(ug/l)	5	0.23U	0.23U	0.23U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	0.19U	0.19U	0.19U
1,2-Dibromoethane	(ug/l)	0.0006	0.16U	0.16U	0.16U
1,2-Dichlorobenzene	(ug/l)	3	0.22U	0.22U	0.22U
1,2-Dichloroethane	(ug/l)	0.6	0.17U	0.17U	0.17U
1,2-Dichloropropane	(ug/l)	1	0.20U	0.20U	0.20U
1,3-Dichlorobenzene	(ug/l)	3	0.25U	0.25U	0.25U
1,4-Dichlorobenzene	(ug/l)	3	0.27U	0.27U	0.27U
2-Butanone	(ug/l)	50	0.57U	0.57U	0.57U
2-Hexanone	(ug/l)	50	0.84U	0.84U	0.84U
4-Methyl-2-pentanone	(ug/l)	--	0.81U	0.81U	0.81U
Acetone	(ug/l)	50	1.1U	1.1U	1.1U
Benzene	(ug/l)	1	0.19U	0.19U	0.19U
Bromodichloromethane	(ug/l)	50	0.17U	0.17U	0.17U
Bromoform	(ug/l)	50	0.16U	0.16U	0.16U
Bromomethane	(ug/l)	5	0.21U	0.21U	0.21U
Carbon disulfide	(ug/l)	60	0.20U	0.20U	0.20U
Carbon tetrachloride	(ug/l)	5	0.57U	0.57U	0.57U
Chlorobenzene	(ug/l)	5	0.23U	0.23U	0.23U
Chloroethane	(ug/l)	5	0.41U	0.41U	0.41U
Chloroform	(ug/l)	7	0.17U	0.17U	0.17U

ug/l: Micrograms per liter.
U: Not detected.
--: No Standard.

TABLE 18
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
GROUNDWATER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSGP-01 HSGP-01 9/9/2005	HSGP-02 HSGP-02 9/9/2005	HSGP-03 HSGP-03 9/9/2005
Chloromethane	(ug/l)	5	0.17U	0.17U	0.17U
Cyclohexane	(ug/l)	--	0.18U	0.18U	0.18U
Dibromochloromethane	(ug/l)	50	0.13U	0.13U	0.13U
Dichlorodifluoromethane	(ug/l)	5	0.09U	0.09U	0.09U
Ethyl benzene	(ug/l)	5	0.23U	0.23U	0.23U
Isopropylbenzene	(ug/l)	5	0.22U	0.22U	0.22U
Methyl Acetate	(ug/l)	--	0.10U	0.10U	0.10U
Methyl tert-butyl ether	(ug/l)	10	0.14U	0.14U	0.14U
Methylcyclohexane	(ug/l)	--	0.17U	0.17U	0.17U
Methylene chloride	(ug/l)	5	0.21U	0.21U	0.21U
Styrene	(ug/l)	5	0.20U	0.20U	0.20U
Tetrachloroethene	(ug/l)	5	0.24U	0.24U	0.24U
Toluene	(ug/l)	5	0.18U	0.18U	0.18U
Total xylenes	(ug/l)	5	0.82U	0.82U	0.82U
Trichloroethene	(ug/l)	5	0.23U	0.23U	0.23U
Trichlorofluoromethane	(ug/l)	5	0.11U	0.11U	0.11U
Vinyl chloride	(ug/l)	2	0.16U	0.16U	0.16U
cis-1,2-Dichloroethene	(ug/l)	5	0.15U	0.15U	0.15U
cis-1,3-Dichloropropene	(ug/l)	0.4	0.18U	0.18U	0.18U
m,p-Xylene	(ug/l)	5	0.59U	0.59U	0.59U
o-Xylene	(ug/l)	5	0.23U	0.23U	0.23U
t-1,3-Dichloropropene	(ug/l)	0.4	0.16U	0.16U	0.16U
trans-1,2-Dichloroethene	(ug/l)	5	0.20U	0.20U	0.20U
TOTAL VOLATILE ORGANICS	(ug/l)	--	0	0	0

ug/l: Micrograms per liter.
U: Not detected.
--: No Standard.

TABLE 19
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
COMMUNICATIONS MANHOLE SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-15 HSSB-15(0-2) 2/28/2006
Mercury	(mg/kg)	5.7	1.1JD

mg/kg: Milligrams per kilogram.
D: Detected at secondary dilution.
J: Estimated value.

TABLE 20
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
COMMUNICATIONS MANHOLE SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
RCRA METALS NOT INCLUDING MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-15 HSSB-15(0-2) 2/28/2006
Arsenic	(mg/kg)	16	3.6
Barium	(mg/kg)	10000	50.9J
Cadmium	(mg/kg)	60	0.45B
Chromium	(mg/kg)	6800	11.9
Lead	(mg/kg)	3900	440
Selenium	(mg/kg)	6800	0.36U
Silver	(mg/kg)	6800	0.08U

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.

TABLE 21
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
COMMUNICATIONS MANHOLE SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
VOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-15 HSSB-15(0-2) 2/28/2006
1,1,1-Trichloroethane	(ug/kg)	--	2.3UJ
1,1,2,2-Tetrachloroethane	(ug/kg)	--	1.7UJ
1,1,2-Trichloroethane	(ug/kg)	--	1.6UJ
1,1-Dichloroethane	(ug/kg)	--	1.5UJ
1,1-Dichloroethylene	(ug/kg)	--	3.1UJ
1,2,4-Trichlorobenzene	(ug/kg)	--	3.7UJ
1,2-Dichloroethane	(ug/kg)	--	1.7UJ
1,2-Dichloropropane	(ug/kg)	--	2.2UJ
2-Hexanone	(ug/kg)	--	20UJ
Acetone	(ug/kg)	1000000	19J
Benzene	(ug/kg)	--	2.2UJ
Benzene, 1-methylethyl-	(ug/kg)	--	2.3UJ
Bromodichloromethane	(ug/kg)	--	1.8UJ
Bromoform	(ug/kg)	--	1.7UJ
Carbon disulfide	(ug/kg)	--	2.0UJ
Carbon tetrachloride	(ug/kg)	--	2.4UJ
Chlorobenzene	(ug/kg)	1000000	2.0UJ
Chloroethane	(ug/kg)	--	12UJ
Chloroform	(ug/kg)	--	1.9UJ
cis-1,2-Dichloroethylene	(ug/kg)	--	1.8UJ
cis-1,3-Dichloropropene	(ug/kg)	--	1.8UJ
Cyclohexane	(ug/kg)	--	1.8UJ
DBCP	(ug/kg)	--	5.2UJ
Dibromochloromethane	(ug/kg)	--	1.3UJ
Dichlorodifluoromethane	(ug/kg)	--	4.7UJ
EDB	(ug/kg)	--	2.2UJ
Ethene, 1,2-dichloro-, (E)-	(ug/kg)	1000000	3.5UJ

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
--: No Standard.

TABLE 21
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
COMMUNICATIONS MANHOLE SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
VOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-15 HSSB-15(0-2) 2/28/2006
Ethylbenzene	(ug/kg)	--	1.9UJ
Freon 113	(ug/kg)	--	3.6UJ
m-Dichlorobenzene	(ug/kg)	560000	3.1UJ
Methyl Acetate	(ug/kg)	--	4.7UJ
Methyl bromide	(ug/kg)	--	11UJ
Methyl chloride	(ug/kg)	--	4.7UJ
Methyl ethyl ketone	(ug/kg)	1000000	15UJ
Methyl isobutylketone (MIBK)	(ug/kg)	--	11UJ
Methylcyclohexane	(ug/kg)	--	2.3UJ
Methylene chloride	(ug/kg)	1000000	10UJ
Methyltert-butylether	(ug/kg)	1000000	2.0UJ
o-Dichlorobenzene	(ug/kg)	1000000	2.1UJ
o-Xylene	(ug/kg)	--	2.1UJ
p-Dichlorobenzene	(ug/kg)	250000	3.0UJ
p-Xylene	(ug/kg)	--	4.7UJ
Styrene	(ug/kg)	--	2.5UJ
trans-1,3-Dichloropropene	(ug/kg)	--	2.0UJ
Trichloroethylene	(ug/kg)	--	1.7UJ
Trichlorofluoromethane	(ug/kg)	--	6.8UJ
Vinyl chloride	(ug/kg)	--	4.5UJ
Tetrachloroethylene	(ug/kg)	--	4.0UJ
Toluene	(ug/kg)	--	2.2UJ
TOTAL VOLATILE ORGANICS	(ug/kg)	--	19

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estimated value.
--: No Standard.

TABLE 22
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
COMMUNICATIONS MANHOLE SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-15 HSSB-15(0-2) 2/28/2006
2,2-oxybis(1-chloropropane)	(ug/kg)	--	560UJ
2,4,5-Trichlorophenol	(ug/kg)	--	530UJ
2,4,6-Trichlorophenol	(ug/kg)	--	510UJ
2,4-Dichlorophenol	(ug/kg)	--	650UJ
2,4-Dimethylphenol	(ug/kg)	--	550UJ
2,4-Dinitrophenol	(ug/kg)	--	3000UJ
2,4-Dinitrotoluene	(ug/kg)	--	510UJ
2,6-Dinitrotoluene	(ug/kg)	--	490UJ
2-Chloronaphthalene	(ug/kg)	--	580UJ
2-Chlorophenol	(ug/kg)	--	560UJ
2-Methylnaphthalene	(ug/kg)	--	580UJ
3,3-Dichlorobenzidine	(ug/kg)	--	600UJ
4,6-Dinitro-2-methylphenol	(ug/kg)	--	680UJ
4-Bromophenyl-phenylether	(ug/kg)	--	520UJ
4-Bromophenyl-phenylether	(ug/kg)	--	--
4-chlorophenyl-phenylether	(ug/kg)	--	550UJ
Acenaphthene	(ug/kg)	1000000	620UJ
Acenaphthylene	(ug/kg)	1000000	570UJ
Acetophenone	(ug/kg)	--	510UJ
Anthracene	(ug/kg)	1000000	680J
Atrazine	(ug/kg)	--	540UJ
Benzaldehyde	(ug/kg)	--	720UJ
Benzo(a)anthracene	(ug/kg)	11000	3700J
Benzo(a)pyrene	(ug/kg)	1100	2900J
Benzo(b)fluoranthene	(ug/kg)	11000	3600J
Benzo(g,h,i)perylene	(ug/kg)	1000000	580UJ
Benzo(k)fluoranthene	(ug/kg)	110000	920J

ug/kg: Micrograms per kilogram.
J: Estimated value.
U: Not detected.
--: No Standard or not analyzed.
Boxed and shaded exceed standard

TABLE 22
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
COMMUNICATIONS MANHOLE SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-15 HSSB-15(0-2) 2/28/2006
Biphenyl	(ug/kg)	--	580UJ
Bis(2-chloroethoxy)methane	(ug/kg)	--	570UJ
Bis(2-chloroethyl)ether	(ug/kg)	--	550UJ
Bis(2-ethylhexyl)phthalate	(ug/kg)	--	670UJ
Butylbenzylphthalate	(ug/kg)	--	570UJ
Caprolactam	(ug/kg)	--	560UJ
Carbazole	(ug/kg)	--	530UJ
Chrysene	(ug/kg)	110000	450UJ
Dibenz(a,h)anthracene	(ug/kg)	1100	440UJ
Dibenzofuran	(ug/kg)	1000000	580UJ
Diethylphthalate	(ug/kg)	--	600UJ
Dimethylphthalate	(ug/kg)	--	560UJ
Di-n-butylphthalate	(ug/kg)	--	530UJ
Di-n-octyl phthalate	(ug/kg)	--	590UJ
Fluoranthene	(ug/kg)	1000000	2700J
Fluorene	(ug/kg)	1000000	590UJ
Hexachlorobenzene	(ug/kg)	12000	560UJ
Hexachlorobutadiene	(ug/ g)	--	540UJ
Hexachlorocyclopentadiene	(ug/kg)	--	560UJ
Hexachloroethane	(ug/kg)	--	590UJ
Indeno(1,2,3-cd)pyrene	(ug/kg)	11000	440UJ
Isophorone	(ug/kg)	--	530UJ
3-Nitroaniline	(ug/kg)	--	460UJ
Naphthalene	(ug/kg)	1000000	600UJ
Nitrobenzene	(ug/kg)	--	760UJ
N-Nitrosodiphenylamine	(ug/kg)	--	580UJ
N-Nitroso-di-n-propylamine	(ug/kg)	--	580UJ

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard or not analyzed.
J: Estimated value.
Boxed and shaded exceed standard

TABLE 22
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
COMMUNICATIONS MANHOLE SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-15 HSSB-15(0-2) 2/28/2006
2-Methylphenol	(ug/kg)	1000000	580UJ
2-Nitroaniline	(ug/kg)	--	440UJ
2-Nitrophenol	(ug/kg)	--	540UJ
4-Chloroaniline	(ug/kg)	--	420UJ
4-Chloro-3-methylphenol	(ug/kg)	--	480UJ
Pentachlorophenol	(ug/kg)	55000	810UJ
3-Methylphenol/4-Methylphenol	(ug/kg)	1000000	550UJ
Phenanthrene	(ug/kg)	1000000	2400J
Phenol	(ug/kg)	1000000	530UJ
4-Nitroaniline	(ug/kg)	--	600UJ
4-Nitrophenol	(ug/kg)	--	430UJ
Pyrene	(ug/kg)	1000000	8900J
Total Semivolatile Organics		--	30300

ug/kg: Micrograms per kilogram.
J: Estimated value.
U: Not detected.
--: No Standard or not analyzed.
Boxed and shaded exceed standard

TABLE 23
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
COMMUNICATIONS MANHOLE SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
POLYCHLORINATED BIPHENYLS (PCBs)

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-15 HSSB-15(0-2) 2/28/2006
Aroclor-1016	(ug/kg)	--	2.7UJ
Aroclor-1221	(ug/kg)	--	4.1UJ
Aroclor-1232	(ug/kg)	--	6.2UJ
Aroclor-1242	(ug/kg)	--	5.5UJ
Aroclor-1248	(ug/kg)	--	2.7UJ
Aroclor-1254	(ug/kg)	--	1.7UJ
Aroclor-1260	(ug/kg)	--	4.4UJ
Total PCBs (subsurface soil)	(ug/kg)	25000	0

ug/kg: Micrograms per kilogram.
U: Not detected.
J: Estiamted value.

TABLE 24
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
CONDUIT PIT SEDIMENT SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSS-09 HSSS-09 9/8/2005
Mercury	(mg/kg)	5.7	33.900D

mg/kg: Milligrams per kilogram.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 25
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSTP-01 HSTP-01(0-2) 9/8/2005	HSTP-01 HSTP-01(2-4) 9/8/2005	HSTP-01 HSTP-01(4-6) 9/8/2005	HSTP-01 HSTP-01(6-8) 9/8/2005	HSTP-01 HSTP-01(8-10) 9/8/2005	HSSB-03A HSS-03A(23-25) 9/8/2005	HSSB-03A HSS-03A(25-27) 9/8/2005
Mercury	(mg/kg)	0.1	2.5JD	0.089UJ	3.5JD	56.600JD	0.006U	0.092U	0.090U

mg/kg: Milligrams per kilogram.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 25
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSSB-03A HSS-03A(27-29) 9/8/2005	HSSB-03A HSS-03A(29-31) 9/8/2005
Mercury	(mg/kg)	0.1	0.089U	0.086U

mg/kg: Milligrams per kilogram.
J: Estimated value.
U: Not detected.
D: Detected at secondary dilution.
Boxed and shaded exceed standard

TABLE 26
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
RCRA METALS NOT INCLUDING MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSTP-01 HSTP-01(0-2) 9/8/2005	HSTP-01 HSTP-01(2-4) 9/8/2005	HSTP-01 HSTP-01(4-6) 9/8/2005	HSTP-01 HSTP-01(6-8) 9/8/2005	HSTP-01 HSTP-01(8-10) 9/8/2005	HSSB-03A HSS-03A(23-25) 9/8/2005
Arsenic	(mg/kg)	7.5	1.2	1.3	1.3	1.8	1.3	1.8
Barium	(mg/kg)	300	7.2B	3.8B	6.5B	6.0B	2.9B	14.6B
Cadmium	(mg/kg)	10	0.03U	0.03U	0.03U	0.03U	0.03U	0.03U
Chromium	(mg/kg)	50	2.9J	3.4J	4.1J	5.2J	2.2J	9.6J
Lead	(mg/kg)	400	10.7	3.1	15.6	43.7	3.4	5.7
Selenium	(mg/kg)	2	0.35U	0.35U	0.35U	0.35U	0.35U	0.36U
Silver	(mg/kg)	--	0.08U	0.08U	0.08U	0.08U	0.08U	0.08U

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.

TABLE 26
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
RCRA METALS NOT INCLUDING MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSSB-03A HSS-03A(25-27) 9/8/2005	HSSB-03A HSS-03A(27-29) 9/8/2005	HSSB-03A HSS-03A(29-31) 9/8/2005
Arsenic	(mg/kg)	7.5	0.81B	0.64B	0.59B
Barium	(mg/kg)	300	12.8B	4.9B	3.2B
Cadmium	(mg/kg)	10	0.03U	0.03U	0.03U
Chromium	(mg/kg)	50	9.8J	6.3J	3.0J
Lead	(mg/kg)	400	5	2.7	1.8
Selenium	(mg/kg)	2	0.35U	0.35U	0.34U
Silver	(mg/kg)	--	0.08U	0.08U	0.08U

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.

TABLE 27
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
VOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSTP-01 HSTP-01(0-2) 9/8/2005	HSTP-01 HSTP-01(2-4) 9/8/2005	HSTP-01 HSTP-01(4-6) 9/8/2005	HSTP-01 HSTP-01(6-8) 9/8/2005	HSTP-01 HSTP-01(8-10) 9/8/2005	HSSB-03A HSS-03A(23-25) 9/8/2005
1,1,1-Trichloroethane	(ug/kg)	800	0.42U	0.43U	0.43U	0.43U	0.43U	0.44U
1,1,2,2-Tetrachloroethane	(ug/kg)	600	0.32U	0.32U	0.32U	0.32U	0.32U	0.33U
1,1,2-Trichlorotrifluoroethane	(ug/kg)	--	0.68U	0.68U	0.69U	0.68U	0.68U	0.70U
1,1,2-Trichloroethane	(ug/kg)	--	0.30U	0.30U	0.30U	0.30U	0.30U	0.31U
1,1-Dichloroethane	(ug/kg)	200	0.27U	0.27U	0.28U	0.28U	0.28U	0.28U
1,1-Dichloroethene	(ug/kg)	400	0.58U	0.58U	0.59U	0.59U	0.59U	0.60U
1,2,4-Trichlorobenzene	(ug/kg)	3400	0.69U	0.70U	0.71U	0.70U	0.70U	0.72U
1,2-Dibromo-3-chloropropane	(ug/kg)	--	0.96U	0.96U	0.98U	0.97U	0.97U	0.99U
1,2-Dibromoethane	(ug/kg)	--	0.41U	0.41U	0.42U	0.41U	0.41U	0.42U
1,2-Dichlorobenzene	(ug/kg)	7900	0.39U	0.39U	0.40U	0.40U	0.40U	0.41U
1,2-Dichloroethane	(ug/kg)	100	0.31U	0.31U	0.32U	0.32U	0.32U	0.32U
1,2-Dichloropropane	(ug/kg)	--	0.40U	0.41U	0.41U	0.41U	0.41U	0.42U
1,3-Dichlorobenzene	(ug/kg)	1600	0.57U	0.57U	0.58U	0.57U	0.57U	0.59U
1,4-Dichlorobenzene	(ug/kg)	8500	0.55U	0.56U	0.57U	0.56U	0.56U	0.57U
2-Butanone	(ug/kg)	300	2.9U	2.9U	2.9U	2.9U	2.9U	3.0U
2-Hexanone	(ug/kg)	--	3.7U	3.7U	3.7U	3.7U	3.7U	3.8U
4-Methyl-2-pentanone	(ug/kg)	1000	2.0U	2.0U	2.0U	2.0U	2.0U	2.1U
Acetone	(ug/kg)	200	3.4U	3.4U	3.5U	3.5U	3.5U	6.9J
Benzene	(ug/kg)	60	0.41U	0.41U	0.41U	0.41U	0.41U	0.42U
Bromodichloromethane	(ug/kg)	--	0.34U	0.34U	0.35U	0.34U	0.34U	0.35U
Bromoform	(ug/kg)	--	0.32U	0.32U	0.32U	0.32U	0.32U	0.33U
Bromomethane	(ug/kg)	--	2.1U	2.1U	2.1U	2.1U	2.1U	2.1U
Carbon disulfide	(ug/kg)	2700	0.37U	0.38U	0.38U	0.38U	0.38U	0.39U
Carbon tetrachloride	(ug/kg)	600	0.45U	0.45U	0.46U	0.46U	0.45U	0.47U
Chlorobenzene	(ug/kg)	1700	0.37U	0.37U	0.38U	0.37U	0.37U	0.38U
Chloroethane	(ug/kg)	1900	2.2U	2.2U	2.2U	2.2U	2.2U	2.2U
Chloroform	(ug/kg)	300	0.35U	0.36U	0.36U	0.36U	0.36U	0.37U

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.

TABLE 27
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
VOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSTP-01 HSTP-01(0-2) 9/8/2005	HSTP-01 HSTP-01(2-4) 9/8/2005	HSTP-01 HSTP-01(4-6) 9/8/2005	HSTP-01 HSTP-01(6-8) 9/8/2005	HSTP-01 HSTP-01(8-10) 9/8/2005	HSSB-03A HSS-03A(23-25) 9/8/2005
Chloromethane	(ug/kg)	--	0.87U	0.87U	0.88U	0.88U	0.88U	0.90U
Cyclohexane	(ug/kg)	--	0.33U	0.33U	0.34U	0.33U	0.33U	0.34U
Dibromochloromethane	(ug/kg)	--	0.23U	0.23U	0.24U	0.24U	0.24U	0.24U
Dichlorodifluoromethane	(ug/kg)	--	0.87U	0.87U	0.89U	0.88U	0.88U	0.90U
Ethyl benzene	(ug/kg)	5500	0.36U	0.36U	0.37U	0.36U	0.36U	0.37U
Isopropylbenzene	(ug/kg)	--	0.42U	0.42U	0.43U	0.43U	0.43U	0.44U
Methyl Acetate	(ug/kg)	--	0.88U	0.88U	0.90U	0.89U	0.89U	0.91U
Methyl tert-butyl ether	(ug/kg)	--	0.37U	0.38U	0.38U	0.38U	0.38U	0.39U
Methylcyclohexane	(ug/kg)	--	0.43U	0.43U	0.44U	0.43U	0.43U	0.44U
Methylene chloride	(ug/kg)	100	1.9U	1.9U	1.9	1.9	1.9U	1.9U
Styrene	(ug/kg)	--	0.47U	0.47U	0.48U	0.47U	0.47U	0.48U
Tetrachloroethene	(ug/kg)	1400	0.74U	0.74U	0.76U	0.75U	0.75U	0.77U
Toluene	(ug/kg)	1500	0.41U	0.41U	0.42U	0.42U	0.42U	0.43U
Trichloroethene	(ug/kg)	700	0.31U	0.31U	0.32U	0.32U	0.32U	0.32U
Trichlorofluoromethane	(ug/kg)	--	1.3U	1.3U	1.3U	1.3U	1.3U	1.3U
Vinyl chloride	(ug/kg)	200	0.84U	0.84U	0.85U	0.85U	0.85U	0.87U
cis-1,2-Dichloroethene	(ug/kg)	--	0.33U	0.33U	0.34U	0.33U	0.33U	0.34U
cis-1,3-Dichloropropene	(ug/kg)	--	0.34U	0.34U	0.34U	0.34U	0.34U	0.35U
m,p-Xylene	(ug/kg)	--	0.88U	0.88U	0.90U	0.89U	0.89U	0.91U
o-Xylene	(ug/kg)	--	0.39U	0.39U	0.40U	0.40U	0.39U	0.40U
t-1,3-Dichloropropene	(ug/kg)	--	0.37U	0.37U	0.38U	0.37U	0.37U	0.38U
trans-1,2-Dichloroethene	(ug/kg)	300	0.65U	0.65U	0.66U	0.66U	0.66U	0.67U
TOTAL VOLATILE ORGANICS	(ug/kg)	10000	0	0	0	0	0	6.9

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.

TABLE 27
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
VOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSSB-03A HSS-03A(25-27) 9/8/2005	HSSB-03A HSS-03A(27-29) 9/8/2005	HSSB-03A HSS-03A(29-31) 9/8/2005
1,1,1-Trichloroethane	(ug/kg)	800	0.43U	0.43U	0.43U
1,1,2,2-Tetrachloroethane	(ug/kg)	600	0.32U	0.32U	0.32U
1,1,2-Trichlorotrifluoroethane	(ug/kg)	--	0.69U	0.68U	0.68U
1,1,2-Trichloroethane	(ug/kg)	--	0.30U	0.30U	0.30U
1,1-Dichloroethane	(ug/kg)	200	0.28U	0.28U	0.28U
1,1-Dichloroethene	(ug/kg)	400	0.59U	0.59U	0.59U
1,2,4-Trichlorobenzene	(ug/kg)	3400	0.70U	0.70U	0.70U
1,2-Dibromo-3-chloropropane	(ug/kg)	--	0.97U	0.97U	0.96U
1,2-Dibromoethane	(ug/kg)	--	0.41U	0.41U	0.41U
1,2-Dichlorobenzene	(ug/kg)	7900	0.40U	0.40U	0.39U
1,2-Dichloroethane	(ug/kg)	100	0.32U	0.32U	0.31U
1,2-Dichloropropane	(ug/kg)	--	0.41U	0.41U	0.41U
1,3-Dichlorobenzene	(ug/kg)	1600	0.58U	0.57U	0.57U
1,4-Dichlorobenzene	(ug/kg)	8500	0.56U	0.56U	0.56U
2-Butanone	(ug/kg)	300	2.9U	2.9U	2.9U
2-Hexanone	(ug/kg)	--	3.7U	3.7U	3.7U
4-Methyl-2-pentanone	(ug/kg)	1000	2.0U	2.0U	2.0U
Acetone	(ug/kg)	200	3.5U	5.2J	3.4U
Benzene	(ug/kg)	60	0.41U	0.41U	0.41U
Bromodichloromethane	(ug/kg)	--	0.35U	0.34U	0.34U
Bromoform	(ug/kg)	--	0.32U	0.32U	0.32U
Bromomethane	(ug/kg)	--	2.1U	2.1U	2.1U
Carbon disulfide	(ug/kg)	2700	0.38U	0.38U	0.38U
Carbon tetrachloride	(ug/kg)	600	0.46U	0.46U	0.45U
Chlorobenzene	(ug/kg)	1700	0.37U	0.37U	0.37U
Chloroethane	(ug/kg)	1900	2.2U	2.2U	2.2U
Chloroform	(ug/kg)	300	0.36U	0.36U	0.36U

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.

TABLE 27
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
VOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSSB-03A HSS-03A(25-27) 9/8/2005	HSSB-03A HSS-03A(27-29) 9/8/2005	HSSB-03A HSS-03A(29-31) 9/8/2005
Chloromethane	(ug/kg)	--	0.88U	0.88U	0.87U
Cyclohexane	(ug/kg)	--	0.33U	0.33U	0.33U
Dibromochloromethane	(ug/kg)	--	0.24U	0.24U	0.24U
Dichlorodifluoromethane	(ug/kg)	--	0.88U	0.88U	0.88U
Ethyl benzene	(ug/kg)	5500	0.36U	0.36U	0.36U
Isopropylbenzene	(ug/kg)	--	0.43U	0.43U	0.43U
Methyl Acetate	(ug/kg)	--	0.89U	0.89U	0.88U
Methyl tert-butyl ether	(ug/kg)	--	0.38U	0.38U	0.38U
Methylcyclohexane	(ug/kg)	--	0.43U	0.43U	0.43U
Methylene chloride	(ug/kg)	100	1.9	1.9	1.9U
Styrene	(ug/kg)	--	0.47U	0.47U	0.47U
Tetrachloroethene	(ug/kg)	1400	0.75U	0.75U	0.75U
Toluene	(ug/kg)	1500	0.42U	0.42U	0.41U
Trichloroethene	(ug/kg)	700	0.32U	0.32U	0.32U
Trichlorofluoromethane	(ug/kg)	--	1.3U	1.3U	1.3U
Vinyl chloride	(ug/kg)	200	0.85U	0.85U	0.84U
cis-1,2-Dichloroethene	(ug/kg)	--	0.34U	0.33U	0.33U
cis-1,3-Dichloropropene	(ug/kg)	--	0.34U	0.34U	0.34U
m,p-Xylene	(ug/kg)	--	0.89U	0.89U	0.88U
o-Xylene	(ug/kg)	--	0.40U	0.40U	0.39U
t-1,3-Dichloropropene	(ug/kg)	--	0.37U	0.37U	0.37U
trans-1,2-Dichloroethene	(ug/kg)	300	0.66U	0.66U	0.65U
TOTAL VOLATILE ORGANICS	(ug/kg)	10000	0	5.2	0

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.

TABLE 28
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSTP-01 HSTP-01(0-2) 9/8/2005	HSTP-01 HSTP-01(2-4) 9/8/2005	HSTP-01 HSTP-01(4-6) 9/8/2005	HSTP-01 HSTP-01(6-8) 9/8/2005	HSTP-01 HSTP-01(8-10) 9/8/2005	HSSB-03A HSS-03A(23-25) 9/8/2005
2,2-oxybis(1-chloropropane)	(ug/kg)	--	54U	54U	110U	55U	54U	55U
2,4,5-Trichlorophenol	(ug/kg)	100	51U	51U	100U	52U	52U	53U
2,4,6-Trichlorophenol	(ug/kg)	--	49U	49U	99U	50U	50U	50U
2,4-Dichlorophenol	(ug/kg)	400	62U	62U	130U	63U	62U	64U
2,4-Dimethylphenol	(ug/kg)	--	53U	53U	110U	54U	54U	55U
2,4-Dinitrophenol	(ug/kg)	200	290UJ	290U	580UJ	290UJ	290U	290UJ
2,4-Dinitrotoluene	(ug/kg)	--	49U	49U	99U	220J	50U	50U
2,6-Dinitrotoluene	(ug/kg)	1000	47U	47U	96U	48U	48U	49U
2-Chloronaphthalene	(ug/kg)	--	55U	56U	110U	56U	56U	57U
2-Chlorophenol	(ug/kg)	800	53U	53U	110U	54U	54U	55U
2-Methylnaphthalene	(ug/kg)	36400	56U	56U	110U	58J	56U	57U
2-Methylphenol	(ug/kg)	100	55U	56U	110U	56U	56U	57U
2-Nitroaniline	(ug/kg)	430	42U	42U	86U	43U	43U	44U
2-Nitrophenol	(ug/kg)	330	51U	51U	100U	52U	52U	53U
3,3-Dichlorobenzidine	(ug/kg)	--	57U	57U	120U	58U	58U	59U
3-Methylphenol/4-Methylphenol	(ug/kg)	900	53U	53U	110U	53U	53U	54U
3-Nitroaniline	(ug/kg)	500	43U	44U	88U	44U	44U	45U
4,6-Dinitro-2-methylphenol	(ug/kg)	--	65UJ	65U	130UJ	66UJ	65U	67UJ
4-Chloro-3-methylphenol	(ug/kg)	240	46U	46U	94U	47U	47U	47U
4-Chloroaniline	(ug/kg)	220	40UJ	40U	81UJ	40UJ	40U	41U
4-Nitroaniline	(ug/kg)	--	57U	57U	120U	58U	58U	59U
4-Nitrophenol	(ug/kg)	100	41UJ	41U	84UJ	42UJ	42U	43U
4-Bromophenyl-phenylether	(ug/kg)	--	50U	50U	100U	51U	50U	51U
4-chlorophenyl-phenylether	(ug/kg)	--	53U	53U	110U	54U	53U	54U
Acenaphthene	(ug/kg)	50000	59U	60U	120U	260J	60U	61U
Acenaphthylene	(ug/kg)	41000	54U	54U	110U	55U	55U	56U
Acetophenone	(ug/kg)	--	49U	49U	99U	50U	49U	50U

ug/kg: Micrograms per kilogram.
J: Estimated value.
U: Not detected.
--: No Standard.
Boxed and shaded exceed standard

TABLE 28
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSTP-01 HSTP-01(0-2) 9/8/2005	HSTP-01 HSTP-01(2-4) 9/8/2005	HSTP-01 HSTP-01(4-6) 9/8/2005	HSTP-01 HSTP-01(6-8) 9/8/2005	HSTP-01 HSTP-01(8-10) 9/8/2005	HSSB-03A HSS-03A(23-25) 9/8/2005
Anthracene	(ug/kg)	50000	50U	50U	100U	470	51U	52U
Atrazine	(ug/kg)	--	51U	51U	100U	52U	52U	53U
Benzaldehyde	(ug/kg)	--	68UJ	69U	140UJ	70UJ	69U	71U
Benzo(a)anthracene	(ug/kg)	224	47U	47U	95U	930	47U	48U
Benzo(a)pyrene	(ug/kg)	61	53U	54U	110U	750	54U	55U
Benzo(b)fluoranthene	(ug/kg)	1100	37U	37U	75U	1100	37U	38U
Benzo(g,h,i)perylene	(ug/kg)	50000	55U	55U	110U	200J	56U	57U
Benzo(k)fluoranthene	(ug/kg)	1100	73U	74U	150U	460	74U	76U
Biphenyl	(ug/kg)	--	55U	55U	110U	56U	56U	57U
Bis(2-chloroethoxy)methane	(ug/kg)	--	55U	55U	110U	56U	55U	57U
Bis(2-chloroethyl)ether	(ug/kg)	--	53U	53U	110U	54U	53U	54U
Bis(2-ethylhexyl)phthalate	(ug/kg)	50000	64U	64U	130U	65U	65U	66U
Butylbenzylphthalate	(ug/kg)	50000	54U	54U	110U	55U	55U	56U
Caprolactam	(ug/kg)	--	54UJ	54U	110UJ	55UJ	54U	55U
Carbazole	(ug/kg)	--	51UJ	51U	100UJ	320J	52U	52U
Chrysene	(ug/kg)	400	60U	60U	120U	800	61U	62U
Di-n-butylphthalate	(ug/kg)	8100	51U	51U	100U	52U	51U	52U
Di-n-octyl phthalate	(ug/kg)	50000	57U	57U	120U	58U	57U	58U
Dibenz(a,h)anthracene	(ug/kg)	14	42U	42U	85U	43U	42U	43U
Dibenzofuran	(ug/kg)	6200	55U	55U	110U	120J	56U	57U
Diethylphthalate	(ug/kg)	7100	58U	58U	120U	59U	58U	59U
Dimethylphthalate	(ug/kg)	2000	54U	54U	110U	55U	54U	55U
Fluoranthene	(ug/kg)	50000	75J	50U	100J	2500	50U	51U
Fluorene	(ug/kg)	50000	56U	56U	110U	230J	57U	58U
Hexachlorobenzene	(ug/kg)	410	53U	54U	110U	54U	54U	55U
Hexachlorobutadiene	(ug/kg)	--	51U	51U	100U	52U	52U	53U
Hexachlorocyclopentadiene	(ug/kg)	--	53U	53U	110U	54U	54U	55U

ug/kg: Micrograms per kilogram.
J: Estimated value.
U: Not detected.
--: No Standard.
Boxed and shaded exceed standard

TABLE 28
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSTP-01 HSTP-01(0-2) 9/8/2005	HSTP-01 HSTP-01(2-4) 9/8/2005	HSTP-01 HSTP-01(4-6) 9/8/2005	HSTP-01 HSTP-01(6-8) 9/8/2005	HSTP-01 HSTP-01(8-10) 9/8/2005	HSSB-03A HSS-03A(23-25) 9/8/2005
Hexachloroethane	(ug/kg)	--	57U	57U	120U	58U	57U	58U
Indeno(1,2,3-cd)pyrene	(ug/kg)	3200	42UJ	42U	86UJ	140J	43U	44U
Isophorone	(ug/kg)	4400	50U	50U	100U	51U	51U	52U
N-Nitroso-di-n-propylamine	(ug/kg)	--	55U	55U	110U	56U	56U	57U
N-Nitrosodiphenylamine	(ug/kg)	--	55U	55U	110U	56U	56U	57U
Naphthalene	(ug/kg)	13000	57U	57U	120U	150J	58U	59U
Nitrobenzene	(ug/kg)	200	73U	73U	150U	74U	74U	75U
Pentachlorophenol	(ug/kg)	1000	77U	77U	160U	78U	78U	80U
Phenanthrene	(ug/kg)	50000	53U	53U	110U	2100	54U	55U
Phenol	(ug/kg)	30	51U	51U	100U	51U	51U	52U
Pyrene	(ug/kg)	50000	59U	59U	120U	1700	60U	61U
Total Semivolatile Organics	(ug/kg)	500000	75	0	100	12508	0	0

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.
J: Estimated value.
Boxed and shaded exceed standard

TABLE 28
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSSB-03A HSS-03A(25-27) 9/8/2005	HSSB-03A HSS-03A(27-29) 9/8/2005	HSSB-03A HSS-03A(29-31) 9/8/2005
2,2-oxybis(1-chloropropane)	(ug/kg)	--	54U	54U	54U
2,4,5-Trichlorophenol	(ug/kg)	100	51U	51U	52U
2,4,6-Trichlorophenol	(ug/kg)	--	49U	49U	50U
2,4-Dichlorophenol	(ug/kg)	400	62U	62U	62U
2,4-Dimethylphenol	(ug/kg)	--	53U	53U	53U
2,4-Dinitrophenol	(ug/kg)	200	290UJ	290UJ	290UJ
2,4-Dinitrotoluene	(ug/kg)	--	49U	49U	50U
2,6-Dinitrotoluene	(ug/kg)	1000	48U	47U	48U
2-Chloronaphthalene	(ug/kg)	--	56U	56U	56U
2-Chlorophenol	(ug/kg)	800	54U	54U	54U
2-Methylnaphthalene	(ug/kg)	36400	56U	56U	56U
2-Methylphenol	(ug/kg)	100	56U	56U	56U
2-Nitroaniline	(ug/kg)	430	43U	43U	43U
2-Nitrophenol	(ug/kg)	330	52U	52U	52U
3,3-Dichlorobenzidine	(ug/kg)	--	57U	57U	58U
3-Methylphenol/4-Methylphenol	(ug/kg)	900	53U	53U	53U
3-Nitroaniline	(ug/kg)	500	44U	44U	44U
4,6-Dinitro-2-methylphenol	(ug/kg)	--	65UJ	65UJ	65UJ
4-Chloro-3-methylphenol	(ug/kg)	240	46U	46U	47U
4-Chloroaniline	(ug/kg)	220	40U	40U	40U
4-Nitroaniline	(ug/kg)	--	57U	57U	58U
4-Nitrophenol	(ug/kg)	100	42U	42U	42U
4-Bromophenyl-phenylether	(ug/kg)	--	50U	50U	50U
4-chlorophenyl-phenylether	(ug/kg)	--	53U	53U	53U
Acenaphthene	(ug/kg)	50000	60U	60U	60U
Acenaphthylene	(ug/kg)	41000	55U	54U	55U
Acetophenone	(ug/kg)	--	49U	49U	49U

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.
J: Estimated value.
Boxed and shaded exceed standard

TABLE 28
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSSB-03A HSS-03A(25-27) 9/8/2005	HSSB-03A HSS-03A(27-29) 9/8/2005	HSSB-03A HSS-03A(29-31) 9/8/2005
Anthracene	(ug/kg)	50000	51U	51U	51U
Atrazine	(ug/kg)	--	51U	51U	52U
Benzaldehyde	(ug/kg)	--	69U	69U	69U
Benzo(a)anthracene	(ug/kg)	224	47U	47U	47U
Benzo(a)pyrene	(ug/kg)	61	54U	54U	54U
Benzo(b)fluoranthene	(ug/kg)	1100	37U	37U	37U
Benzo(g,h,i)perylene	(ug/kg)	50000	56U	55U	56U
Benzo(k)fluoranthene	(ug/kg)	1100	74U	74U	74U
Biphenyl	(ug/kg)	--	55U	55U	56U
Bis(2-chloroethoxy)methane	(ug/kg)	--	55U	55U	55U
Bis(2-chloroethyl)ether	(ug/kg)	--	53U	53U	53U
Bis(2-ethylhexyl)phthalate	(ug/kg)	50000	64U	64U	65U
Butylbenzylphthalate	(ug/kg)	50000	54U	54U	55U
Caprolactam	(ug/kg)	--	54U	54U	54U
Carbazole	(ug/kg)	--	51U	51U	51U
Chrysene	(ug/kg)	400	60U	60U	61U
Di-n-butylphthalate	(ug/kg)	8100	51U	51U	51U
Di-n-octyl phthalate	(ug/kg)	50000	57U	57U	57U
Dibenz(a,h)anthracene	(ug/kg)	14	42U	42U	42U
Dibenzofuran	(ug/kg)	6200	56U	55U	56U
Diethylphthalate	(ug/kg)	7100	58U	58U	58U
Dimethylphthalate	(ug/kg)	2000	54U	54U	54U
Fluoranthene	(ug/kg)	50000	50U	50U	50U
Fluorene	(ug/kg)	50000	57U	57U	57U
Hexachlorobenzene	(ug/kg)	410	54U	54U	54U
Hexachlorobutadiene	(ug/kg)	--	52U	52U	52U
Hexachlorocyclopentadiene	(ug/kg)	--	54U	54U	54U

ug/kg: Micrograms per kilogram. J: Estimated value.
U: Not detected.
--: No Standard.
Boxed and shaded exceed standard

TABLE 28
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSSB-03A HSS-03A(25-27) 9/8/2005	HSSB-03A HSS-03A(27-29) 9/8/2005	HSSB-03A HSS-03A(29-31) 9/8/2005
Hexachloroethane	(ug/kg)	--	57U	57U	57U
Indeno(1,2,3-cd)pyrene	(ug/kg)	3200	43U	43U	43U
Isophorone	(ug/kg)	4400	50U	50U	51U
N-Nitroso-di-n-propylamine	(ug/kg)	--	56U	56U	56U
N-Nitrosodiphenylamine	(ug/kg)	--	55U	55U	56U
Naphthalene	(ug/kg)	13000	57U	57U	58U
Nitrobenzene	(ug/kg)	200	73U	73U	74U
Pentachlorophenol	(ug/kg)	1000	78U	78U	78U
Phenanthrene	(ug/kg)	50000	54U	53U	54U
Phenol	(ug/kg)	30	51U	51U	51U
Pyrene	(ug/kg)	50000	59U	59U	60U
Total Semivolatile Organics	(ug/kg)	500000	0	0	0

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.
J: Estimated value.

Boxed and shaded exceed standard

TABLE 29
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
POLYCHLORINATED BIPHENYLS (PCBs)

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSTP-01 HSTP-01(0-2) 9/8/2005	HSTP-01 HSTP-01(2-4) 9/8/2005	HSTP-01 HSTP-01(4-6) 9/8/2005	HSTP-01 HSTP-01(6-8) 9/8/2005	HSTP-01 HSTP-01(8-10) 9/8/2005	HSSB-03A HSS-03A(23-25) 9/8/2005
Aroclor-1016	(ug/kg)	10000	2.6U	2.6U	2.6U	2.6U	2.6U	2.7U
Aroclor-1221	(ug/kg)	10000	4.0U	4.0U	4.0U	4.0U	4.0U	4.1U
Aroclor-1232	(ug/kg)	10000	5.9U	6.0U	6.0U	6.0U	6.0U	6.2U
Aroclor-1242	(ug/kg)	10000	5.3U	5.3U	5.4U	5.4U	5.3U	5.5U
Aroclor-1248	(ug/kg)	10000	2.6U	2.6U	2.6U	2.6U	2.6U	2.7U
Aroclor-1254	(ug/kg)	10000	1.7U	1.7U	1.7U	1.7U	1.7U	1.7U
Aroclor-1260	(ug/kg)	10000	4.3U	4.3U	24	4.3U	4.3U	4.4U
Total PCBs (subsurface soil)	(ug/kg)	10000	0	0	24	0	0	0

ug/kg: Micrograms per kilogram.
U: Not detected.

TABLE 29
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM 4046 SOIL CLEANUP OBJECTIVES
POLYCHLORINATED BIPHENYLS (PCBs)

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSSB-03A HSS-03A(25-27) 9/8/2005	HSSB-03A HSS-03A(27-29) 9/8/2005	HSSB-03A HSS-03A(29-31) 9/8/2005
Aroclor-1016	(ug/kg)	10000	2.6U	2.6U	2.6U
Aroclor-1221	(ug/kg)	10000	4.0U	4.0U	4.0U
Aroclor-1232	(ug/kg)	10000	6.0U	6.0U	6.0U
Aroclor-1242	(ug/kg)	10000	5.4U	5.4U	5.3U
Aroclor-1248	(ug/kg)	10000	2.6U	2.6U	2.6U
Aroclor-1254	(ug/kg)	10000	1.7U	1.7U	1.7U
Aroclor-1260	(ug/kg)	10000	4.3U	4.3U	4.3U
Total PCBs (subsurface soil)	(ug/kg)	10000	0	0	0

ug/kg: Micrograms per kilogram.
U: Not detected.

TABLE 30
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM SOIL CLEANUP OBJECTIVES
TOTAL PETROLEUM HYDROCARBONS (TPH)

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSTP-01 HSTP-01(0-2) 9/8/2005	HSTP-01 HSTP-01(2-4) 9/8/2005	HSTP-01 HSTP-01(4-6) 9/8/2005	HSTP-01 HSTP-01(6-8) 9/8/2005	HSTP-01 HSTP-01(8-10) 9/8/2005	HSSB-03A HSS-03A(23-25) 9/8/2005	HSSB-03A HSS-03A(25-27) 9/8/2005
TPH	(ug/kg)	--	6430U	6420U	12400	60600J	6430U	6592U	6501U

ug/kg: Micrograms per kilogram.
J: Estimated value.
U: Not detected.
--: No Standard.

TABLE 30
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
DRYWELL SUBSURFACE SOIL SAMPLE RESULTS
TAGM SOIL CLEANUP OBJECTIVES
TOTAL PETROLEUM HYDROCARBONS (TPH)

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	TAGM 4046 RSCOs	HSSB-03A HSS-03A(27-29) 9/8/2005	HSSB-03A HSS-03A(29-31) 9/8/2005
TPH	(ug/kg)	--	6485U	6408U

ug/kg: Micrograms per kilogram.
J: Estimated value.
U: Not detected.
--: No Standard.

TABLE 31
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WATER METER PIT SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-04A HSSB-04A(10-12) 9/8/2005	HSSB-04A HSSB-04A(12-14) 9/8/2005	HSSB-04A HSSB-04A(14-16) 9/8/2005
Mercury	(mg/kg)	5.7	3.4D	2.9JD	2.6JD

mg/kg: Milligrams per kilogram.
J: Estimated value.
D: Detected at secondary dilution.

TABLE 32
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WATER METER PIT SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
RCRA METALS NOT INCLUDING MERCURY

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-04A HSSB-04A(10-12) 9/8/2005	HSSB-04A HSSB-04A(12-14) 9/8/2005	HSSB-04A HSSB-04A(14-16) 9/8/2005
Arsenic	(mg/kg)	16	0.88B	0.86B	0.94B
Barium	(mg/kg)	10000	12.7B	14.5B	17.1B
Cadmium	(mg/kg)	60	0.03U	0.03U	0.03U
Chromium	(mg/kg)	6800	4.2J	4.4J	4.6J
Lead	(mg/kg)	3900	36.5	23	28.1
Selenium	(mg/kg)	6800	0.34U	0.34U	0.34U
Silver	(mg/kg)	6800	0.08U	0.08U	0.08U

mg/kg: Milligrams per kilogram.
U: Not detected.
J: Estimated value.
B: Detected between IDL and CRDL.
IDL: Instrument detection limit.
CRDL: Contract required detection limit.

TABLE 33
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WATER METER PIT SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
VOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-04A HSSB-04A(10-12) 9/8/2005	HSSB-04A HSSB-04A(12-14) 9/8/2005	HSSB-04A HSSB-04A(14-16) 9/8/2005
1,1,1-Trichloroethane	(ug/kg)	--	0.43U	0.43U	0.43U
1,1,2,2-Tetrachloroethane	(ug/kg)	--	0.32U	0.32U	0.32U
1,1,2-Trichlorotrifluoroethane	(ug/kg)	--	0.68U	0.68U	0.68U
1,1,2-Trichloroethane	(ug/kg)	--	0.30U	0.30U	0.30U
1,1-Dichloroethane	(ug/kg)	--	0.27U	0.28U	0.28U
1,1-Dichloroethene	(ug/kg)	--	0.58U	0.59U	0.59U
1,2,4-Trichlorobenzene	(ug/kg)	--	0.70U	0.70U	0.70U
1,2-Dibromo-3-chloropropane	(ug/kg)	--	0.96U	0.97U	0.97U
1,2-Dibromoethane	(ug/kg)	--	0.41U	0.41U	0.41U
1,2-Dichlorobenzene	(ug/kg)	1000000	0.39U	0.40U	0.40U
1,2-Dichloroethane	(ug/kg)	--	0.31U	0.31U	0.32U
1,2-Dichloropropane	(ug/kg)	--	0.40U	0.41U	0.41U
1,3-Dichlorobenzene	(ug/kg)	560000	0.57U	0.57U	0.57U
1,4-Dichlorobenzene	(ug/kg)	250000	0.56U	0.56U	0.56U
2-Butanone	(ug/kg)	1000000	2.9U	2.9U	2.9U
2-Hexanone	(ug/kg)	--	3.7U	3.7U	3.7U
4-Methyl-2-pentanone	(ug/kg)	--	2.0U	2.0U	2.0U
Acetone	(ug/kg)	1000000	3.4U	3.4U	3.5U
Benzene	(ug/kg)	--	0.41U	0.41U	0.41U
Bromodichloromethane	(ug/kg)	--	0.34U	0.34U	0.34U
Bromoform	(ug/kg)	--	0.32U	0.32U	0.32U
Bromomethane	(ug/kg)	--	2.1U	2.1U	2.1U
Carbon disulfide	(ug/kg)	--	0.37U	0.38U	0.38U
Carbon tetrachloride	(ug/kg)	--	0.45U	0.45U	0.45U
Chlorobenzene	(ug/kg)	1000000	0.37U	0.37U	0.37U
Chloroethane	(ug/kg)	--	2.2U	2.2U	2.2U
Chloroform	(ug/kg)	--	0.35U	0.36U	0.36U

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.

TABLE 33
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WATER METER PIT SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
VOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-04A HSSB-04A(10-12) 9/8/2005	HSSB-04A HSSB-04A(12-14) 9/8/2005	HSSB-04A HSSB-04A(14-16) 9/8/2005
Chloromethane	(ug/kg)	--	0.87U	0.87U	0.88U
Cyclohexane	(ug/kg)	--	0.33U	0.33U	0.33U
Dibromochloromethane	(ug/kg)	--	0.23U	0.24U	0.24U
Dichlorodifluoromethane	(ug/kg)	--	0.87U	0.88U	0.88U
Ethyl benzene	(ug/kg)	--	0.36U	0.36U	0.36U
Isopropylbenzene	(ug/kg)	--	0.42U	0.43U	0.43U
Methyl Acetate	(ug/kg)	--	0.88U	0.89U	0.89U
Methyl tert-butyl ether	(ug/kg)	1000000	0.37U	0.38U	0.38U
Methylcyclohexane	(ug/kg)	--	0.43U	0.43U	0.43U
Methylene chloride	(ug/kg)	1000000	1.9U	1.9U	1.9U
Styrene	(ug/kg)	--	0.47U	0.47U	0.47U
Tetrachloroethene	(ug/kg)	--	0.74U	0.75U	0.75U
Toluene	(ug/kg)	--	0.41U	0.41U	0.42U
Trichloroethene	(ug/kg)	--	0.31U	0.32U	0.32U
Trichlorofluoromethane	(ug/kg)	--	1.3U	1.3U	1.3U
Vinyl chloride	(ug/kg)	--	0.84U	0.84U	0.85U
cis-1,2-Dichloroethene	(ug/kg)	--	0.33U	0.33U	0.33U
cis-1,3-Dichloropropene	(ug/kg)	--	0.34U	0.34U	0.34U
m,p-Xylene	(ug/kg)	--	0.88U	0.89U	0.89U
o-Xylene	(ug/kg)	--	0.39U	0.39U	0.39U
t-1,3-Dichloropropene	(ug/kg)	--	0.37U	0.37U	0.37U
trans-1,2-Dichloroethene	(ug/kg)	1000000	0.65U	0.65U	0.66U
TOTAL VOLATILE ORGANICS	(ug/kg)	--	0	0	0

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.

TABLE 34
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WATER METER PIT SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-04A HSSB-04A(10-12) 9/8/2005	HSSB-04A HSSB-04A(12-14) 9/8/2005	HSSB-04A HSSB-04A(14-16) 9/8/2005
2,2-oxybis(1-chloropropane)	(ug/kg)	--	54U	54U	54U
2,4,5-Trichlorophenol	(ug/kg)	--	51U	51U	51U
2,4,6-Trichlorophenol	(ug/kg)	--	49U	49U	49U
2,4-Dichlorophenol	(ug/kg)	--	62U	62U	62U
2,4-Dimethylphenol	(ug/kg)	--	53U	53U	53U
2,4-Dinitrophenol	(ug/kg)	--	290UJ	290UJ	290UJ
2,4-Dinitrotoluene	(ug/kg)	--	49U	49U	49U
2,6-Dinitrotoluene	(ug/kg)	--	47U	48U	48U
2-Chloronaphthalene	(ug/kg)	--	55U	56U	56U
2-Chlorophenol	(ug/kg)	--	53U	54U	54U
2-Methylnaphthalene	(ug/kg)	--	56U	56U	56U
2-Methylphenol	(ug/kg)	1000000	55U	56U	56U
2-Nitroaniline	(ug/kg)	--	42U	43U	43U
2-Nitrophenol	(ug/kg)	--	51U	52U	52UJ
3,3-Dichlorobenzidine	(ug/kg)	--	57U	57U	57U
3-Methylphenol/4-Methylphenol	(ug/kg)	1000000	53U	53U	53U
3-Nitroaniline	(ug/kg)	--	43U	44U	44U
4,6-Dinitro-2-methylphenol	(ug/kg)	--	65UJ	65UJ	65UJ
4-Chloro-3-methylphenol	(ug/kg)	--	46U	46U	46U
4-Chloroaniline	(ug/kg)	--	40UJ	40UJ	40UJ
4-Nitroaniline	(ug/kg)	--	57U	57U	57U
4-Nitrophenol	(ug/kg)	--	41UJ	42UJ	42U
4-Bromophenyl-phenylether	(ug/kg)	--	50U	50U	50U
4-chlorophenyl-phenylether	(ug/kg)	--	53U	53U	53U
Acenaphthene	(ug/kg)	1000000	59U	60U	60U
Acenaphthylene	(ug/kg)	1000000	54U	55U	55U
Acetophenone	(ug/kg)	--	49U	49U	49U

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.
J: Estimated value.

TABLE 34
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WATER METER PIT SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-04A HSSB-04A(10-12) 9/8/2005	HSSB-04A HSSB-04A(12-14) 9/8/2005	HSSB-04A HSSB-04A(14-16) 9/8/2005
Anthracene	(ug/kg)	1000000	50U	51U	51U
Atrazine	(ug/kg)	--	51U	51U	51U
Benzaldehyde	(ug/kg)	--	68UJ	69UJ	69UJ
Benzo(a)anthracene	(ug/kg)	11000	98J	66J	100J
Benzo(a)pyrene	(ug/kg)	1100	64J	55J	92J
Benzo(b)fluoranthene	(ug/kg)	11000	110J	69J	120J
Benzo(g,h,i)perylene	(ug/kg)	1000000	55U	56U	56U
Benzo(k)fluoranthene	(ug/kg)	110000	73U	74U	74U
Biphenyl	(ug/kg)	--	55U	55U	55U
Bis(2-chloroethoxy)methane	(ug/kg)	--	55U	55U	55U
Bis(2-chloroethyl)ether	(ug/kg)	--	53U	53U	53U
Bis(2-ethylhexyl)phthalate	(ug/kg)	--	64U	64U	64U
Butylbenzylphthalate	(ug/kg)	--	54U	54U	54U
Caprolactam	(ug/kg)	--	54UJ	54UJ	54UJ
Carbazole	(ug/kg)	--	51UJ	51UJ	51UJ
Chrysene	(ug/kg)	110000	140J	62J	100J
Di-n-butylphthalate	(ug/kg)	--	51U	51U	51U
Di-n-octyl phthalate	(ug/kg)	--	57U	57U	57U
Dibenz(a,h)anthracene	(ug/kg)	1100	42U	42U	42U
Dibenzofuran	(ug/kg)	1000000	55U	56U	56U
Diethylphthalate	(ug/kg)	--	57U	58U	58U
Dimethylphthalate	(ug/kg)	--	54U	54U	54U
Fluoranthene	(ug/kg)	1000000	140J	150J	250J
Fluorene	(ug/kg)	1000000	56U	57U	57U
Hexachlorobenzene	(ug/kg)	12000	53U	54U	54U
Hexachlorobutadiene	(ug/kg)	--	51U	52U	52U
Hexachlorocyclopentadiene	(ug/kg)	--	53U	54U	54U

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.
J: Estimated value.

TABLE 34
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WATER METER PIT SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-04A HSSB-04A(10-12) 9/8/2005	HSSB-04A HSSB-04A(12-14) 9/8/2005	HSSB-04A HSSB-04A(14-16) 9/8/2005
Hexachloroethane	(ug/kg)	--	57U	57U	57U
Indeno(1,2,3-cd)pyrene	(ug/kg)	11000	42UJ	43UJ	43UJ
Isophorone	(ug/kg)	--	50U	50U	50U
N-Nitroso-di-n-propylamine	(ug/kg)	--	55U	56U	56U
N-Nitrosodiphenylamine	(ug/kg)	--	55U	55U	55U
Naphthalene	(ug/kg)	1000000	57U	57U	57U
Nitrobenzene	(ug/kg)	--	73U	73U	73U
Pentachlorophenol	(ug/kg)	55000	77U	78U	78U
Phenanthrene	(ug/kg)	1000000	57J	93J	160J
Phenol	(ug/kg)	1000000	50U	51U	51U
Pyrene	(ug/kg)	1000000	110J	110J	180J
Total Semivolatile Organics	(ug/kg)	--	719	605	1002

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.
J: Estimated value.

TABLE 35
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WATER METER PIT SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
POLYCHLORINATED BIPHENYLS (PCBs)

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-04A HSSB-04A(10-12) 9/8/2005	HSSB-04A HSSB-04A(12-14) 9/8/2005	HSSB-04A HSSB-04A(14-16) 9/8/2005
Aroclor-1016	(ug/kg)	--	2.6U	2.6U	2.6U
Aroclor-1221	(ug/kg)	--	4.0U	4.0U	4.0U
Aroclor-1232	(ug/kg)	--	5.9U	5.9U	6.0U
Aroclor-1242	(ug/kg)	--	5.3U	5.3U	5.4U
Aroclor-1248	(ug/kg)	--	2.6U	2.6U	2.6U
Aroclor-1254	(ug/kg)	--	1.7U	1.7U	1.7U
Aroclor-1260	(ug/kg)	--	4.2U	4.3U	4.3U
Total PCBs (subsurface soil)	(ug/kg)	25000	0	0	0

ug/kg: Micrograms per kilogram.
U: Not detected.
--: No Standard.

TABLE 36
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WATER METER SUBSURFACE SOIL SAMPLE RESULTS
INDUSTRIAL USE SOIL CLEANUP OBJECTIVES
TOTAL PETROLEUM HYDROCARBONS (TPH)

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Part 375 Industrial Use SCOs	HSSB-04A HSSB-04A(10-12) 9/8/2005	HSSB-04A HSSB-04A(12-14) 9/8/2005	HSSB-04A HSSB-04A(14-16) 9/8/2005
TPH	(ug/kg)	--	9650	8530	10500

ug/kg: Micrograms per kilogram.
--: No Standard.

TABLE 37
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WASTE CHARACTERIZATION SOIL SAMPLE RESULTS
TOXICITY CHARACTERISTIC LEACHING PROCEDURE

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Toxicity Characteristic Leaching Procedure	HSWC-01 HSWC-01 3/19/2009	HSWC-02 HSWC-02(1-2) 3/19/2009	HSWC-03 HSWC-03(1-2) 3/19/2009	HSWC-04 HSWC-04(1-2) 3/19/2009
1,1-Dichloroethylene	(ug/l)	700	25U	25U	25U	25U
1,2-Dichloroethane	(ug/l)	500	25U	25U	25U	25U
Benzene	(ug/l)	500	25U	25U	25U	25U
Carbon tetrachloride	(ug/l)	500	25U	25U	25U	25U
Chlorobenzene	(ug/l)	100000	25U	25U	25U	25U
Chloroform	(ug/l)	6000	25U	25U	25U	25U
Tetrachloroethylene	(ug/l)	700	25U	25U	9.2J	25U
Trichloroethylene	(ug/l)	500	25U	25U	25U	25U
Vinyl chloride	(ug/l)	200	25U	25U	25U	25U
Methyl ethyl ketone	(ug/l)	200000	120U	120U	120U	120U
2,4,5-Trichlorophenol	(ug/l)	400000	100U	100U	100U	100U
2,4,6-Trichlorophenol	(ug/l)	2000	100U	100U	100U	100U
2,4-Dinitrotoluene	(ug/l)	130	100U	100U	100U	100U
Hexachlorobenzene	(ug/l)	130	100U	100U	100U	100U
Hexachlorobutadiene	(ug/l)	500	100U	100U	100U	100U
Hexachloroethane	(ug/l)	3000	100U	100U	100U	100U
Nitrobenzene	(ug/l)	2000	100U	100U	100U	100U
o-Cresol	(ug/l)	200000	100U	100U	100U	100U
PCP	(ug/l)	100000	100U	100U	100U	100U
p-Cresol	(ug/l)	200000	100U	100U	100U	100U
p-Dichlorobenzene	(ug/l)	7500	100U	100U	100U	100U
2,4-D	(ug/l)	10000	20U	20U	20U	20U
Chlordane	(ug/l)	30	5.0U	5.0U	5.0U	5.0U
Endrin	(ug/l)	20	0.50U	0.50U	0.50U	0.50U
Heptachlor	(ug/l)	8	0.50U	0.50U	0.50U	0.50U
Heptachlor epoxide	(ug/l)	8	0.50U	0.50U	0.50U	0.50U
Lindane	(ug/l)	400	0.50U	0.50U	0.50U	0.50U

ug/l: Micrograms per liter.
U: Not detected.
J: Estimated value.

TABLE 37
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WASTE CHARACTERIZATION SOIL SAMPLE RESULTS
TOXICITY CHARACTERISTIC LEACHING PROCEDURE

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	Toxicity Characteristic Leaching Procedure	HSWC-01 HSWC-01 3/19/2009	HSWC-02 HSWC-02(1-2) 3/19/2009	HSWC-03 HSWC-03(1-2) 3/19/2009	HSWC-04 HSWC-04(1-2) 3/19/2009
Methoxychlor	(ug/l)	10000	4.6	23D	0.94	0.45J
Pyridine	(ug/l)	5000	200U	200U	200U	200U
Toxaphene	(ug/l)	500	5.0U	5.0U	5.0U	5.0U
Silvex	(ug/l)	1000	20U	20U	20U	20U
Arsenic	(ug/l)	5000	100U	100U	100U	100U
Barium	(ug/l)	100000	483J	508	332J	334J
Cadmium	(ug/l)	1000	30.0U	30.0U	30.0U	30.0U
Chromium	(ug/l)	5000	50.0U	50.0U	50.0U	50.0U
Lead	(ug/l)	5000	446	37.2J	60.0U	60.0U
Mercury	(ug/l)	200	2.0U	2.0U	2.0U	2.0U
Selenium	(ug/l)	1000	100U	100U	100U	100U
Silver	(ug/l)	5000	50.0U	50.0U	50.0U	50.0U

ug/l: Micrograms per liter.
U: Not detected.
J: Estimated value.

TABLE 38
LONG ISLAND RAIL ROAD - 17 SUBSTATIONS
HEMPSTEAD SUBSTATION
WASTE CHARACTERIZATION SOIL SAMPLE RESULTS
RCRA CHARACTERISTICS

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE	HSWC-01 HSWC-01 3/19/2009	HSWC-02 HSWC-02(1-2) 3/19/2009	HSWC-03 HSWC-03(1-2) 3/19/2009	HSWC-04 HSWC-04(1-2) 3/19/2009
Corrosivity	(mg/kg)	8.3	6.6	7.4	6.5
Cyanide(reactive)	(mg/kg)	10.00U	10.00U	10.00U	10.00U
Ignitability	(mg/kg)	NOT	NOT	NOT	NOT
Sulfide	(mg/kg)	40.00U	40.00U	40.00U	40.00U

mg/kg: Milligrams per kilogram.
U: Not detected.