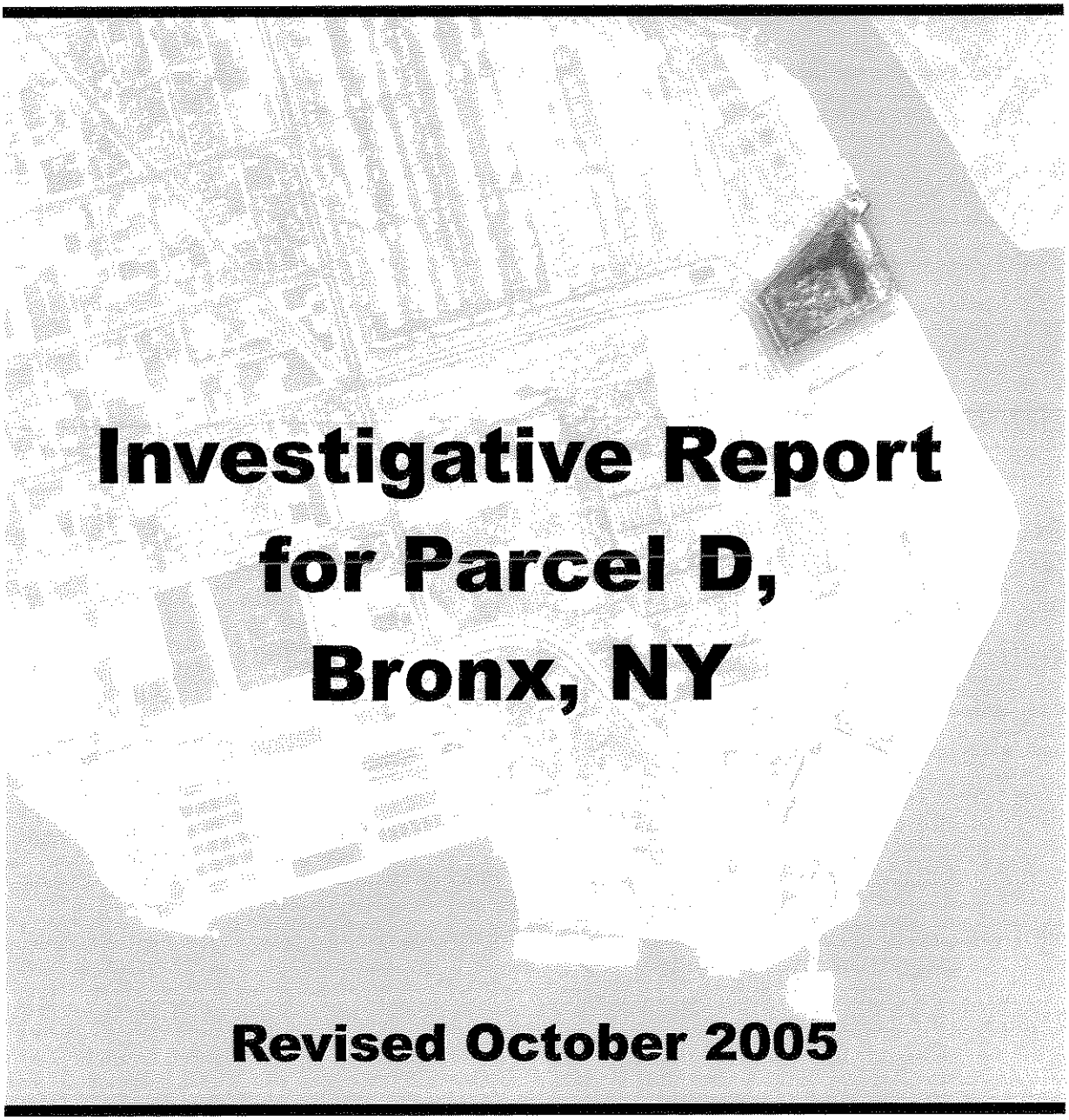
Hunts Point Cooperative Market Redevelopment Plan



Investigative Report for Parcel D, Bronx, NY

Revised October 2005

Prepared by

Lawler, Matusky & Skelly Engineers LLP
One Blue Hill Plaza • Pearl River, New York 10965
ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS

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781-027

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EXECUTIVE SUMMARY:

Lawler, Matusky, and Skelly Engineers LLP, under contract to the New York City Economic Development Corporation (NYCEDC), performed a subsurface investigation program based on the New York State Department of Environmental Conservation (NYSDEC) approved Scope of Work (dated April 2004) entitled, Investigative Scope of Work for The Unit Portion of Parcel D, Bronx NY (SOW). This report presents the findings of the subsurface investigation of Parcel D (Site D), located in the northeast portion of the Hunts Point Food Distribution Center (HPFDC) (Figure 1). The purpose of the investigation was to assess areas of the Site that are suitable for redevelopment under the proposed redevelopment plan and identify areas that may require more detailed attention.

A review of site conditions and history was performed prior to preparation of the SOW. This review, in addition a physical site inspection, was used to prepare the investigative work scope. Information reviewed to determine site history and physical setting included historic Sanborn fire insurance maps, aerial photographs, historic topographic maps, and Consolidated Edison Company of New York (Con Ed) site maps.

Historic Site and topographic maps have been reviewed and show no evidence of any structures at the site. A bulkhead was constructed along the Bronx River sometime between 1966 and 1974. An area nearly 100ft wide was filled between the shoreline and the bulkhead. Based on the visual site inspection and borings advanced in this area, the fill is hydraulically emplaced sand from dredging activities potentially in the Bronx and East river channels. A Con Ed utility easement traverses the northern portion of the site. A number of coal tar boils appear at the surface along the easement on the western portion of the site. The entire central portion of the site is void of vegetation and is discolored.

The investigation included the examination of on-site material and the collection of samples for chemical analysis, as well as the visual inspection and collection of groundwater samples. A total of 47 test borings and 7 temporary piezometers were installed across the site. A ground penetrating radar (GPR) survey was performed across the site to evaluate the presence and provide some preliminary information related to the purifier waste and coal tar.

Of the 47 borings that were installed, a total of 15 were chosen for sampling and analysis for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), metals, PCBs, diesel range organics, total amenable cyanide, total organic halide, and ammonia. A total of 8 groundwater samples were taken, 7 from piezometers and 1 from an existing on-site well. These samples were analyzed for VOCs, SVOCs (total and filtered), TAL metals (total and filtered), mercury, PCBs, and pesticides.

The results of the inspection, GPR, sampling, analysis, and data evaluation revealed that a large area of purifier waste is present at the ground surface corresponding to a

0 750 ft

SCALE IN FEET

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LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Location of Site D, Hunts Point** **HUNTS POINT**	**Figure 1**

large area devoid of vegetation. Purifier waste extends from the area devoid of vegetation across the site and below the surface. This purifier waste exists in some areas in deposits that are 10ft thick. A strip of land parallel to and adjacent to the river is primarily sandy fill material above native sand with organics.

Based on both a review of the borings/probes and an evaluation of the cross sectional information, the volume of waste (defined as purifier or coal tar type material) is approximately 49,000 cubic yards of insitu material. This volume includes several thousand cubic yards (approximately 3000 yds^3) of fill/soil that exists above the waste. This thin veneer layer would be difficult to segregate physically from the waste so it is included in the total waste volume. The total waste volume is primarily purifier type material with a smaller volume of coal tar type waste.

The analytical data from fill and soil samples were compared to NYSDEC Technical Administrative Guidance memorandum 4046 – Determination of Soil Cleanup Objectives and Cleanup Levels (TAGM). Analysis of shallow material across the site showed concentration levels of VOCs, SVOCs, and Metals to be over the TAGM cleanup criteria in virtually all of the samples analyzed. Concentrations of several SVOCs and Metals were above the TAGM in every sample. Sulfur and Iron were the metals in highest concentration and SVOCs Naphthalene and Phenanthrene were among the highest concentrations over the TAGM.

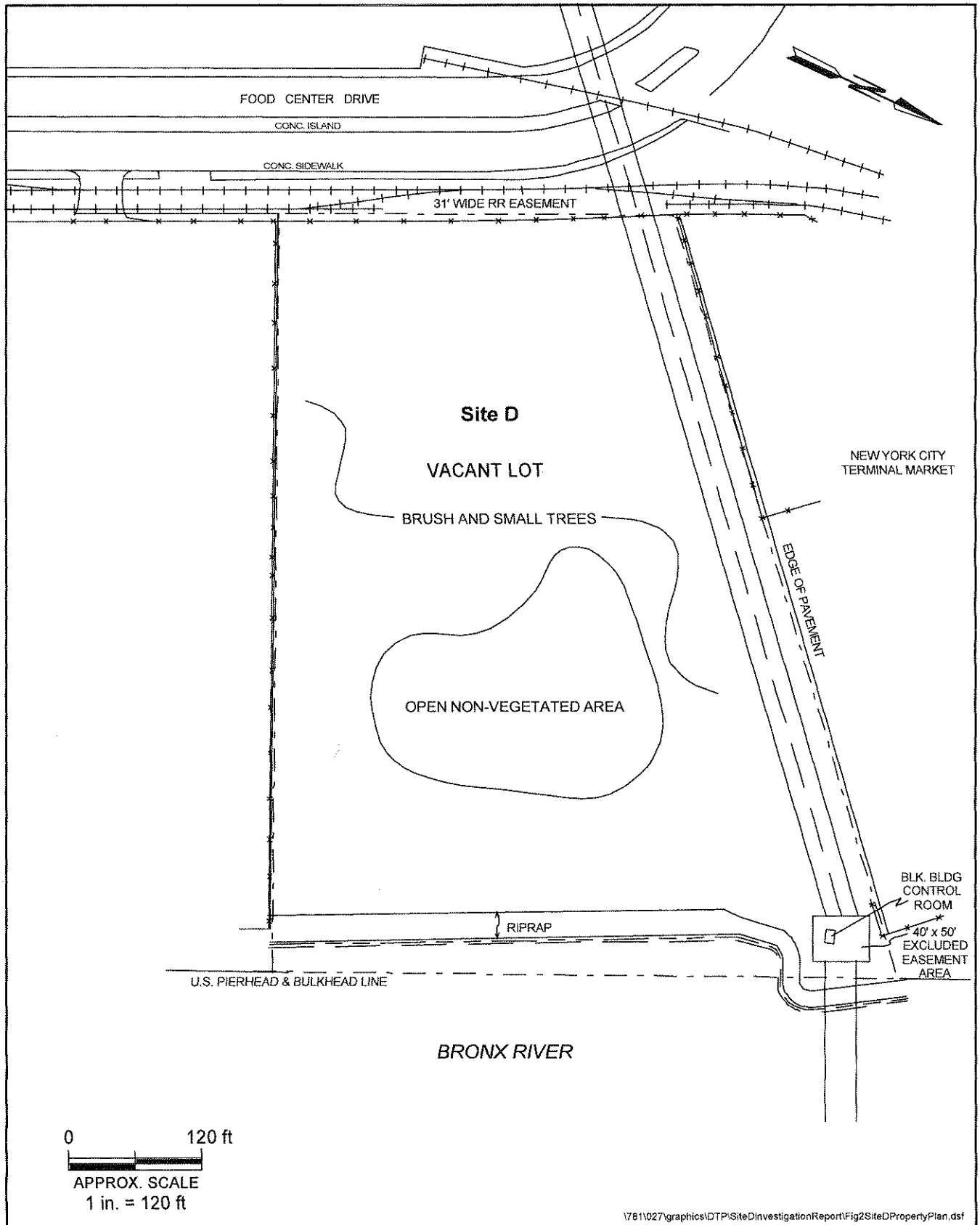
Groundwater on site contained varying degrees of contamination, with the highest concentrations of contaminants in piezometers screened in or adjacent to areas of purifier waste. Piezometers 3 and 4 are screened in the waste and have the highest total concentrations of VOCs, SVOCs, and Metals.

INTRODUCTION

This report presents the findings of the subsurface investigation for Parcel D (Site D), located in the northeast portion of the Market (Figure 1). Site D is trapezoidal in shape and covers approximately 7.23 acres. The site is bounded on the west by Food Center Drive and an active railroad spur, on the east by the Bronx River, on the north by a produce distribution warehouse, and the south by a food distribution warehouse (Figure 2).

Historic Site and topographic maps have been reviewed and a composite showing conditions which were identified on those maps is included (Figure 3). Historic aerial photographs (Aerial Photos 1 through 5) were also reviewed prior to the start of field work.

A Preliminary Site investigation was done consisting of the installation and sampling of shallow soil borings. This work was done based on a site visit on 28 August 2003 during which the ground surface was observed to be soft and spongy and sampling was proposed to determine the thickness and stability of the soft surface material. Borings were advanced to aid in the determination of the type of equipment to be used for the full investigation and to prepare the site specific Health and Safety Plan.



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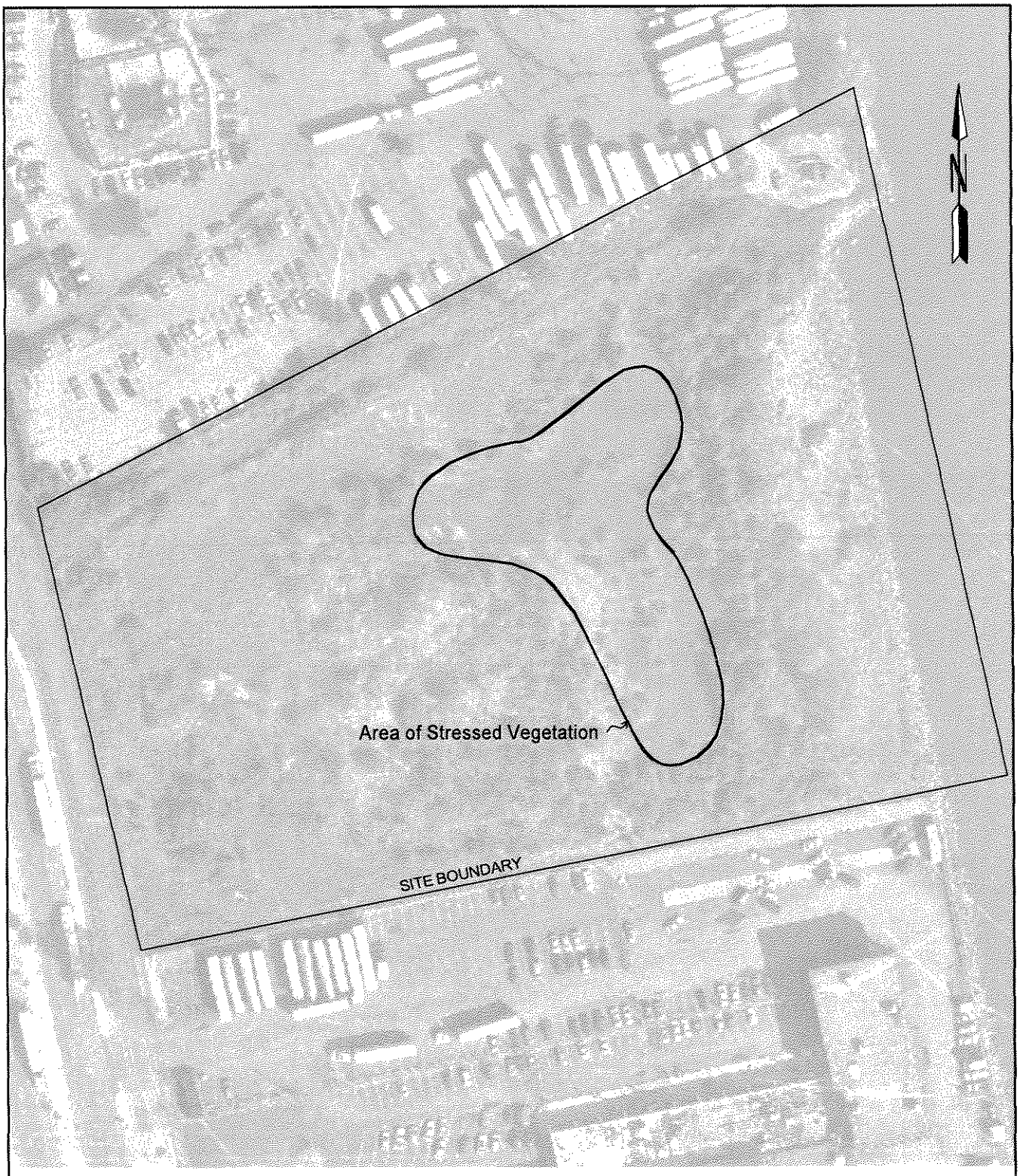
Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Site D Property Plan** **HUNTS POINT**	**Figure 2**



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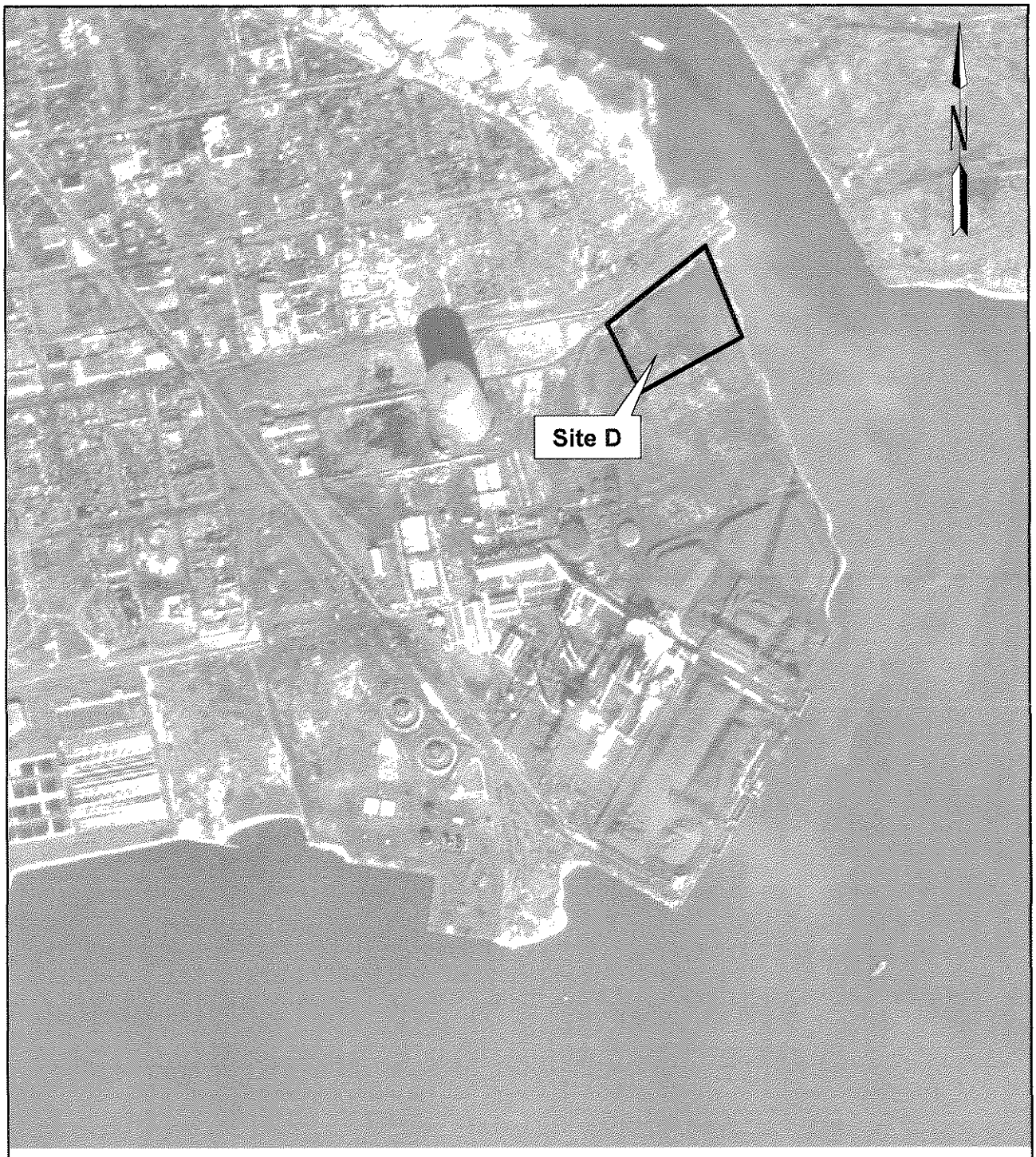
LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Site D Open Area** **HUNTS POINT**	**Figure 3**



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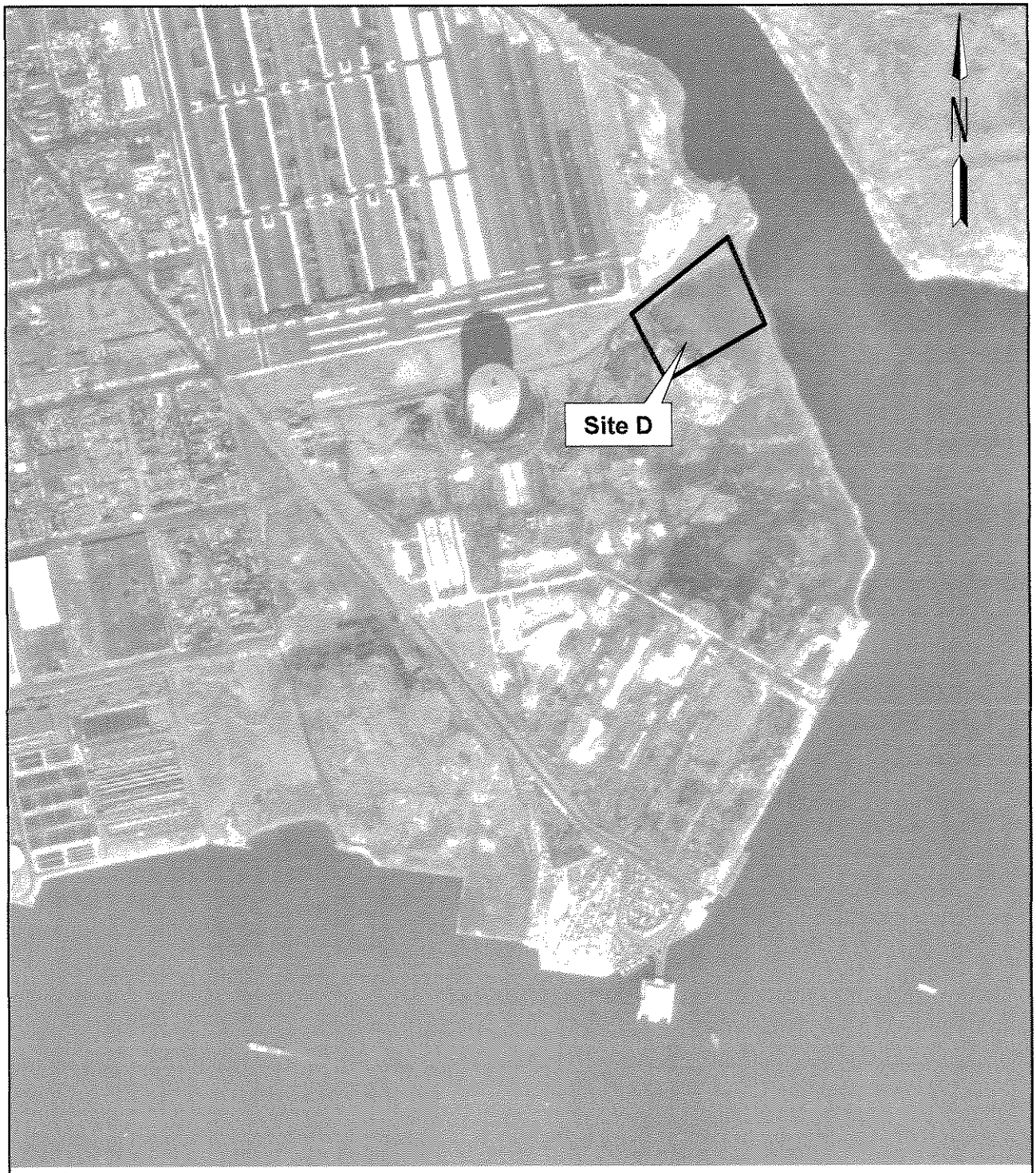
LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Hunts Point Site D - 1954 Aerial Photograph**	**Aerial Photo 1**



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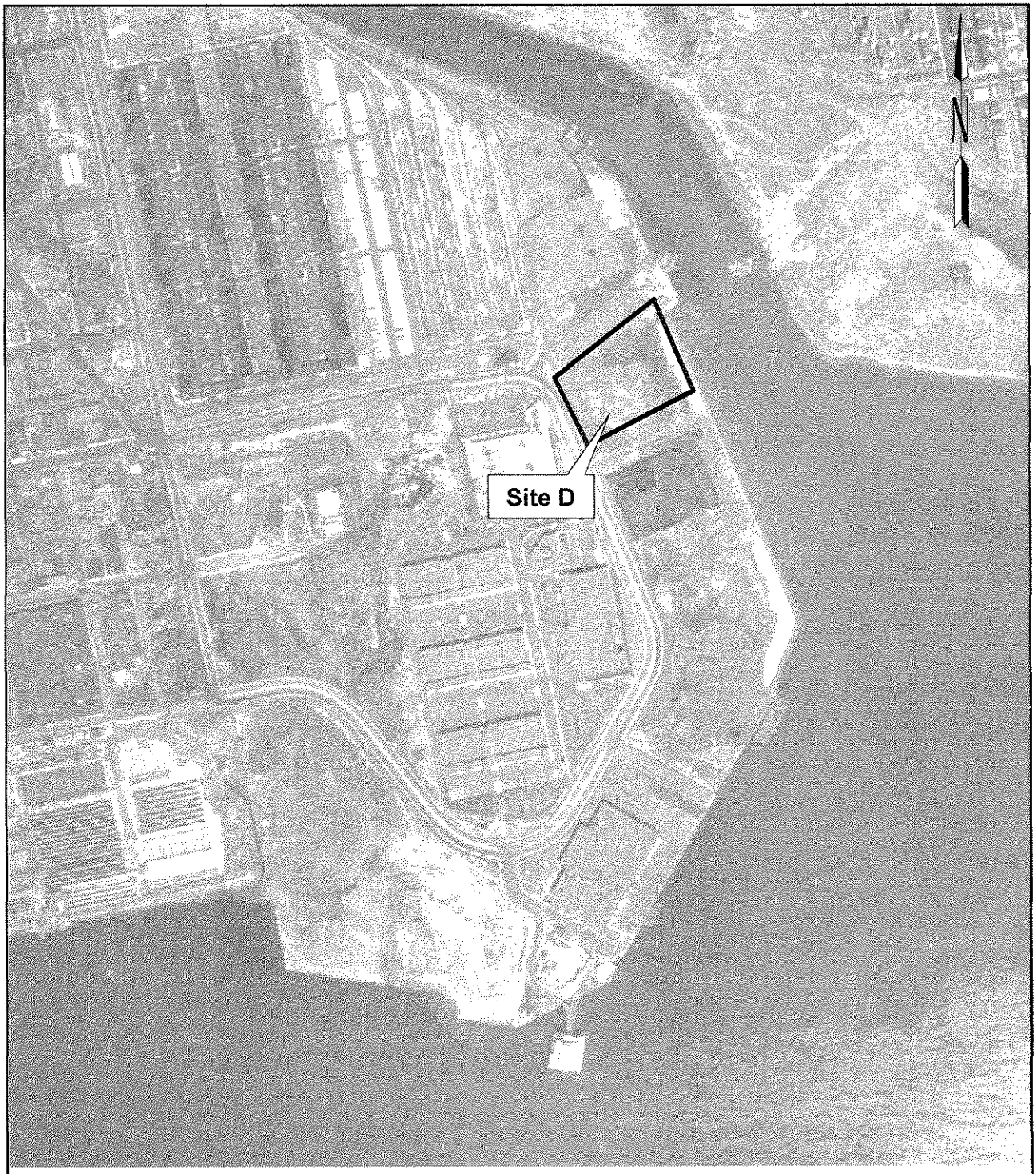
LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Hunts Point Site D - 1966 Aerial Photograph**	**Aerial Photo 2**



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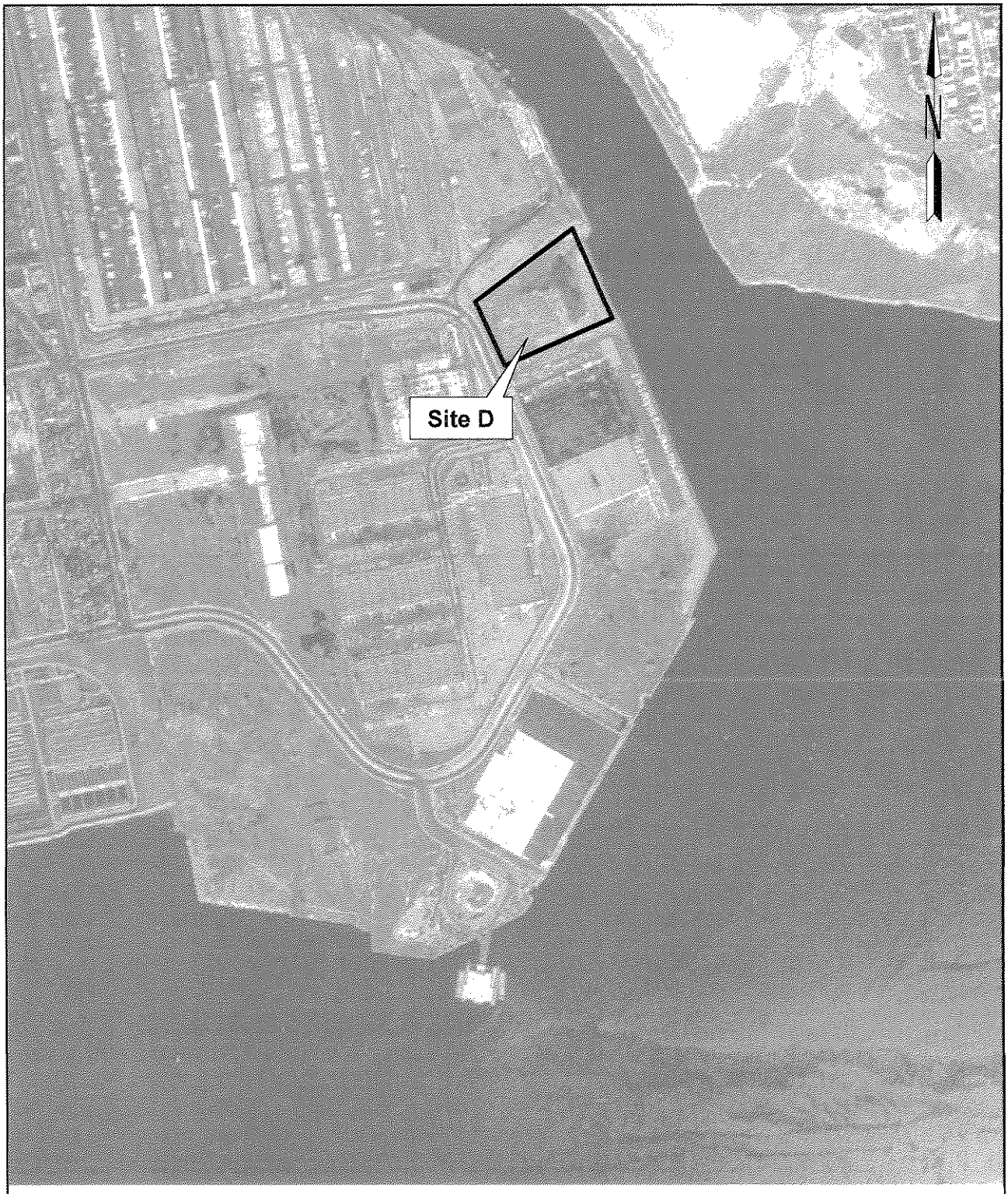
LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Hunts Point Site D - 1975 Aerial Photograph**	**Aerial Photo 3**



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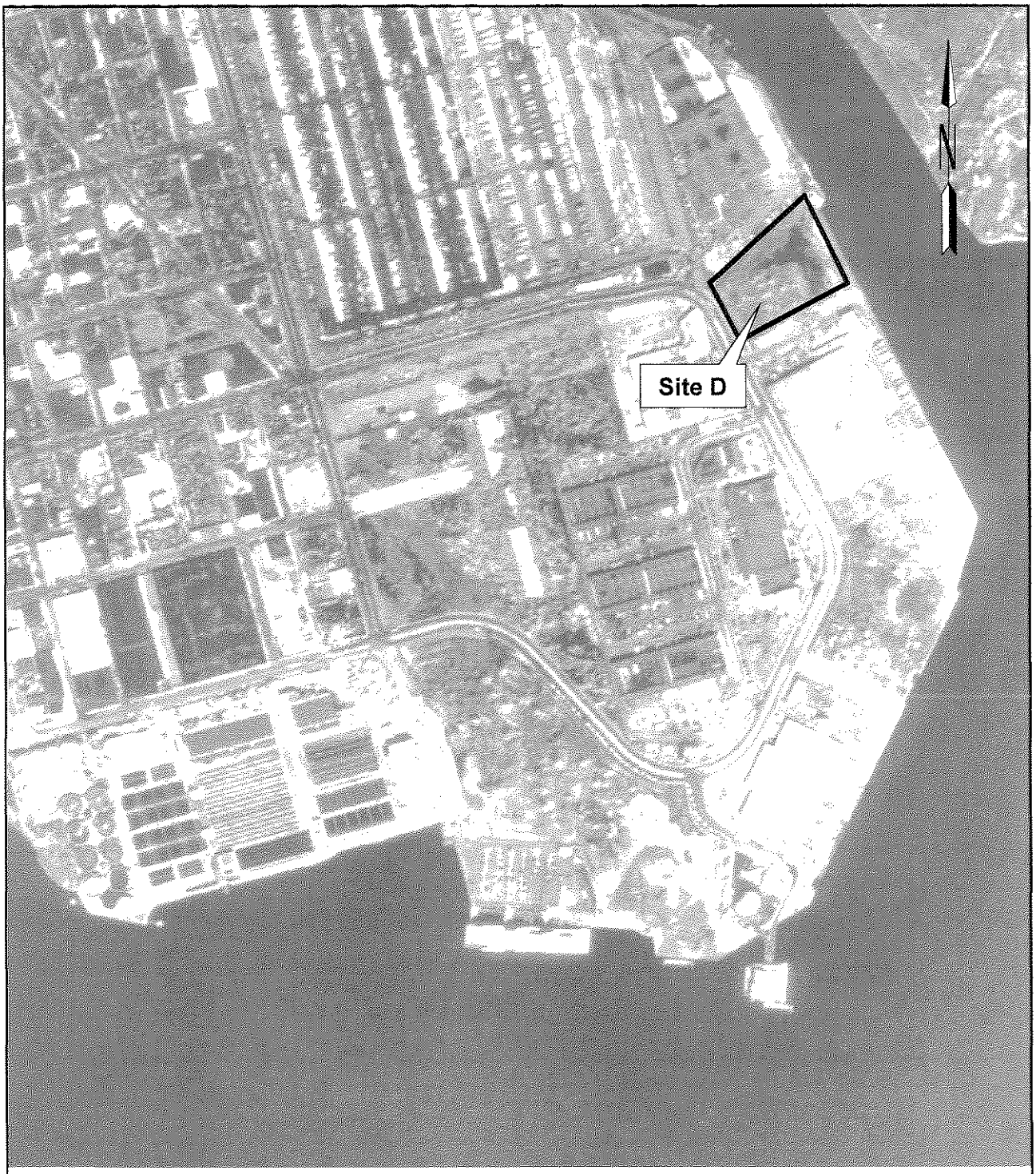
LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Hunts Point Site D - 1984 Aerial Photograph**	**Aerial Photo 4**



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LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Hunts Point Site D - 1994 Aerial Photograph**	**Aerial Photo 5**

Shallow borings were advanced in areas where there was surficial evidence of the soft and spongy purifier waste materials.

Three shallow soil borings were installed as part of the Preliminary Investigation in a large area devoid of vegetation where waste materials are present at the surface. Each boring was advanced 12 ft below grade or to the water table, whichever was encountered first. A total of 7 samples were collected from the 3 boring locations and analyzed for TCL (target compound list) VOCs (volatile organic compounds), TAL (target analyte list) metals, and total amenable cyanide. The samples collected for TCL VOCs were collected from an interval exhibiting the highest PID reading or from just above the water table. Samples for TAL metals and total amenable cyanide were collected as a composite from the entire length of the waste material in the boring. The analytical results are listed on Table 1.

On the western boundary of Site D is a Con Ed easement that contains a gas pipeline that spans the Bronx River. The Site identified as the Perimeter of the Iroquois Pipeline project is located along the western border of Site D. This is essentially the roadway that includes Food Center Drive. During the investigation, borings and wells were installed, sampled, and data was reviewed during the construction of the pipeline. The entire length of this border was exposed via excavation. Soil, fill, and groundwater were removed, handled, and properly disposed of to complete the construction (Figure 4).

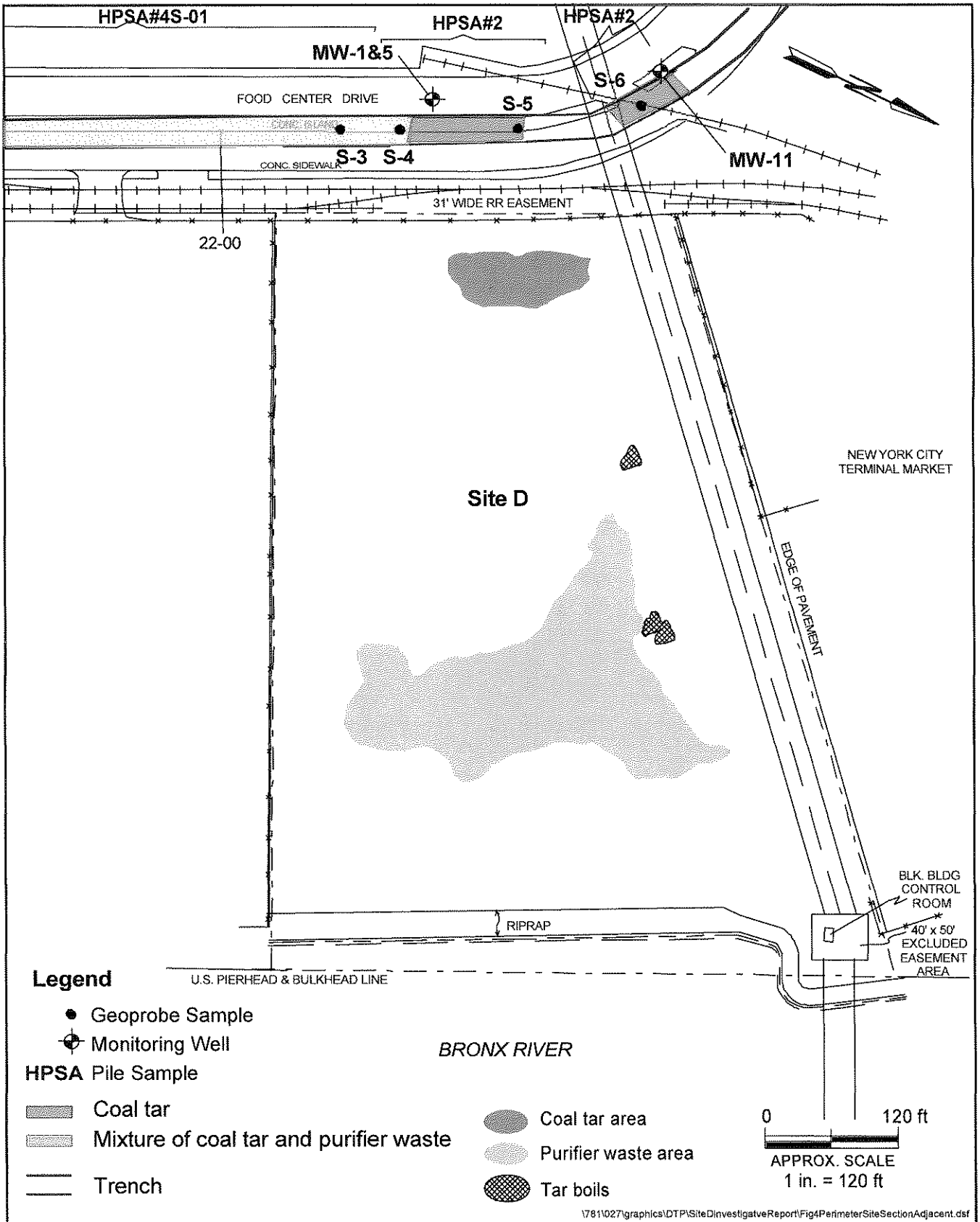
The Perimeter Site included an investigation that consisted of spaced test borings and monitoring wells. During both excavation for the pipeline installation and borings for the perimeter investigation, there were areas where purifier and coal tar type wastes were found individually or mixed together.

Directly west of Site D on the perimeter site are MW-1, an existing monitoring well, and SW-9 a soil boring. Excavations (trenches) dug in this area indicate that of the almost 300 ft long section of Food Center Drive that runs past Site D, over 200 ft of it contained coal tar waste or a mixture of coal tar and purifier wastes.

These wastes were moved to a stockpile area for further sampling and analysis. The soil containing these materials was classified as primarily petroleum contaminated or industrial waste. During the trenching for the pipeline project, the waste material was noted to be in a specific layer that was relatively consistent. In most areas the layer of buried tar waste was noted to extend beyond the 4 ft wide trench in both directions. Utility maps of Food Center Drive showed that the street was densely populated with underground utilities and it is not known if waste material extended that far but might have been removed.

FIELD SAMPLING ACTIVITIES

LMS began this assignment by conducting a site inspection to identify the health and safety concerns for the Site, access limitations, layout of control areas, preparation of a Site-specific health and safety plan, and confirmation of on-site utilities with respect



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LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Perimeter Site Section Adjacent to Site D** **HUNTS POINT**	**Figure 4**

Table 1
SOIL DATA SUMMARY
NYCEDC Hunt's Point SITE D
Preliminary Investigation
(November 2003)

LMS Sample ID	SDB1-HP4	SDB2-HP1	SDB3-HP6	RECOMMENDED
Sampling Date	11/19/2003	11/19/2003	11/19/2003	SOIL CLEANUP
Matrix	SOIL	SOIL	SOIL	OBJECTIVE (a)
Units	mg/kg	mg/kg	mg/kg	mg/kg
VOLATILE ORGANIC COMPOUNDS (mg/kg)				
Methylene Chloride	ND	ND	ND	0.1
Acetone	ND	ND	ND	0.2
Carbon Disulfide	ND	ND	ND	2.7
2-Butanone	ND	ND	ND	0.3
Trichloroethene	ND	ND	ND	0.7
Benzene	ND	ND	ND	0.06
Bromoform	ND	ND	ND	[1]
4-Methyl-2-pentanone	ND	ND	ND	1.0
2-Hexanone	ND	ND	ND	[1]
Tetrachloroethene	ND	ND	ND	1.4
Toluene	ND	ND	7.9 j	1.5
1,1,2,2-Tetrachloroethane	ND	ND	ND	0.6
Chlorobenzene	ND	ND	ND	1.7
Ethylbenzene	ND	ND	ND	5.5
Styrene	ND	ND	ND	[1]
Xylene (Total)	ND	ND	20 j	1.2
Total VOCs:	ND	ND	**27.9**	10[1]

1 - As per TAGM #4046, total VOCs < 10 ppm, total SVOCs < 500 ppm, total pesticides < 10 ppm.

(a) - NYSDEC Technical Administrative Guidance Memorandum, January 1994.

j - Estimated concentration; compound present below quantitation limit

ND - Not detected at analytical detection limit

Table 1
SOIL DATA SUMMARY
NYCEDC Hunt's Point
SITE D
Preliminary Investigation
(November 2003)

LMS Sample ID Sampling Date Matrix Units	SDB1-HP5 11/19/2003 SOIL mg/kg	SDB2-HP2 11/19/2003 SOIL mg/kg	SDB2-HP3 11/19/2003 SOIL mg/kg	SDB3-HP7 11/19/2003 SOIL mg/kg	RECOMMENDED SOIL CLEANUP OBJECTIVE (a) mg/kg
METALS(mg/kg)					
Aluminum	ND	ND	81.5	ND	SB
Antimony	ND	ND	24.2	ND	SB
Arsenic	**15.7**	**10.4**	**16.4**	ND	7.5 or SB
Barium	ND	ND	ND	ND	300 or SB
Beryllium	ND	ND	ND	ND	0.16 or SB
Cadmium	ND	ND	ND	ND	1 or SB
Calcium	293	345	320	281	SB
Chromium	**16.4**	9.3	**17.1**	ND	10 or SB
Cobalt	ND	ND	ND	ND	30 or SB
Copper	**344**	**135**	**360**	**203**	25 or SB
Iron	**8090**	1900	**8560**	534	2000 or SB
Lead	110	9.2	113	12	SB****
Magnesium	ND	ND	ND	ND	SB
Manganese	18.4	21.2	19.7	9.7	SB
Mercury	**1.0**	**0.55**	**1.4**	0.085	0.1
Nickel	**91.9**	**16.2**	**97.1**	**20.4**	13 or SB
Potassium	ND	ND	ND	ND	SB
Selenium	ND	ND	ND	ND	2 or SB
Silver	ND	ND	ND	ND	SB
Sodium	328	364	311	403	SB
Thallium	ND	ND	ND	ND	SB
Vanadium	21.4	ND	22.6	ND	150 or SB
Zinc	**44**	**35.9**	**41.2**	8.7	20 or SB
Cyanide, Total	12.1	2.7	2.2	2.2	***
Cyanide, Amenable to Cl	9120	703	3110	1070	***
Total Metals :	**18505.90**	**3552.45**	**13097.40**	**2544.09**	

*** - Site specific forms of Cyanide should be taken into consideration when establishing soil cleanup objective.

**** - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.

(a) - NYSDEC Technical Administrative Guidance Memorandum, January 1994.

ND - Not detected at analytical detection limit.

SB - Site background.

to sampling locations. The site is relatively level with some debris piles placed sporadically across the site. Most of the site is vegetated with small brush and trees with the exception of a large area devoid of vegetation near the center of the site. The area devoid of vegetation has purifier waste exposed at the surface. Upon entering the area devoid of vegetation, the sulfuric odor characteristic of purifier waste is immediately noticeable.

Purifier waste is primarily composed of wood chips that were reported in general MGP historical references to have been used in the filtration process of coal gas. The main chemicals of concern in this material are cyanide and other metals as well as some petroleum related constituents. The purifier waste observed at Site D is mixed with ash and cinders.

The main Site Investigation sampling activities consisted of the installation of soil probes, and the installation and sampling of temporary piezometers.

Securing the Site

As part of the Investigative Scope of Work for Site D it was recommended that in order to prevent unauthorized persons from entering the site, the fence that was present on three sides of the site (west, north, and south) would have large holes repaired and/or new fencing installed. But as the site investigation proceeded Con Edison, which has a utility easement traversing the northern part of the site, required that there be open access to the site and a large gate remain open in the north east corner. Therefore, the site securing stated in the Scope of Work was not done.

Ground Penetrating Radar Survey

As part of the investigation, a Ground Penetrating Radar (GPR) Survey was conducted on May 19 and 21, 2004 at site D. The purpose of the survey was to identify any structures present below the ground surface, the investigation of coal tar, and the thickness of purifier wastes within the site.

The geophysical survey was performed by Sub-Surface Informational Surveys, Inc. The method of the survey involved a SIR-3000 (sub-surface interface radar) computer, power supply, graphic recorder, video monitor, and a transmitting/receiving antenna. The antenna transmits electromagnetic signals into the sub-surface and detects and amplifies the reflection of the signal into the graphic recorder and video monitor. The antenna is moved along the surface being surveyed and a radar image of that surface is produced. This equipment is limited by the amount of plastic soils and/or clay and RCP pipes present under the surface as their signatures blend into the surrounding geology. Penetration also decreases as the conductivity of the soils increase.

Due to the large amount of vegetation and debris on the parcel, select traverses had to be cleared to maintain an approximate 20' grid. In many instances traverses still had to be cut short (due to debris piles), but were picked up immediately on the other side of the obstruction.

Predominant through most of the waste area is a clear subsurface interface of highly conductive material found at the 4' mark. The upper 4' appear to represent the spongy portion of the purifier waste. The waste, due to its high conductivity, did not allow the GPR to penetrate to the bottom but it was estimated from the field measurements that were collected that the waste could be up to 15 ft thick.. The more sandy area of the site towards the river was scanned to a maximum reported depth of 20 ft and determined that the sand was 12'-15' thick. There is a line found near the 12.5' mark and where conductivity again increases drastically. This is deeper than the water table was expected to be but could be the base of the hydraulic sand. The precise location of these areas was recorded as part of a GPS survey.

GPS Survey

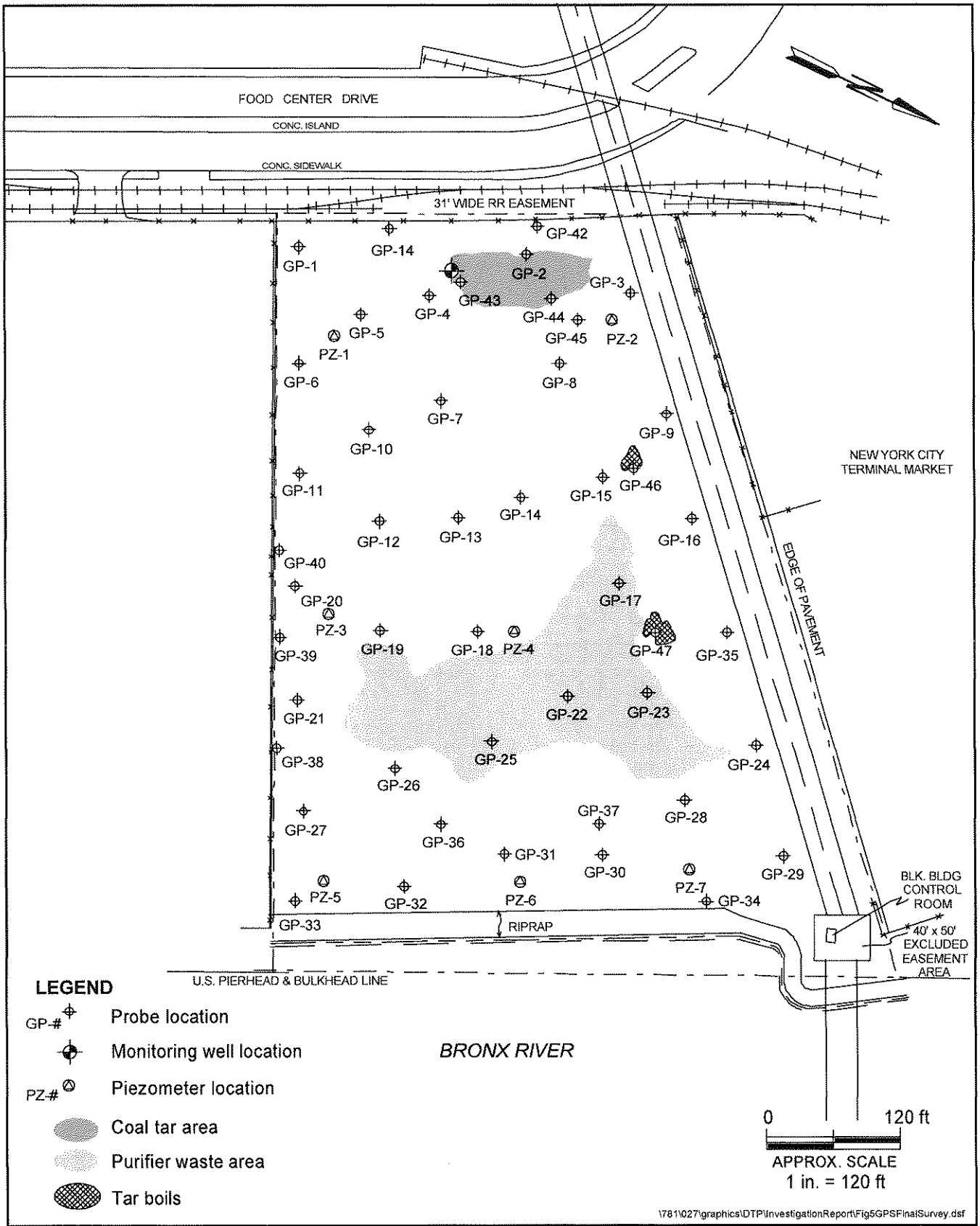
The planned locations of the soil probes were digitized using GIS and a CAD survey file as a base map. The coordinates for the locations were then downloaded into a Trimble Pathfinder Pro XRS real-time Differential Global Positioning System (DGPS) with L-band satellite differential correction. The horizontal accuracy of DGPS is usually ± 1 meter. The probe locations were staked in the field using the DGPS. Final probe locations were resurveyed with DGPS to obtain final coordinates since some probes were offset due to debris piles limiting access to the proposed location. The locations of the Monitoring well and piezometers were finalized with DGPS as well (Figure 5).

The purpose of the GPR Survey and coordination with the probe locations is to allow the cross sections and subsurface information generated for this report to be able to be followed and identified in the field at any point in the future. Any future remediation, construction or site activity may require excavation into existing waste and therefore it should be able to be identified without having to repeat the investigation. The GPS survey will allow exact locations of edges of the waste to be relocated regardless of the amount of time that passes.

Boring and Temporary Piezometer Installation and Sampling

Test probes were advanced across the site using the direct push/probe drilling method. Due to inconsistent site surface conditions the probe drill rig was mounted on an all terrain vehicle to allow for site access. Each probe was advanced approximately 5 ft into the water table or to the bottom of the waste.

Sampling was performed in continuous 4 to 5 ft intervals from grade to the bottom of the boring so that the fill material could be observed. Each soil and fill sample is described on a probe log (Attachment A). The logs detail the color, material type and composition, relative grain size and distribution, presence of free moisture, evidence of contamination, and any other distinctive characteristics. Each sample interval was also screened using PID and HCN meters and the instrument readings are recorded on the probe logs. Hydrogen Cyanide was detected in the headspace sample at two



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LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Site D GPS Final Survey** **HUNTS POINT**	**Figure 5**

probe locations (GP-10 and GP-23) during field screening using a Hydrogen Cyanide meter.

Following completion of each probe, the area was backfilled to grade using cuttings or clean sand. A GPS location survey was then done and a generalized probe location map was prepared (Figure 6).

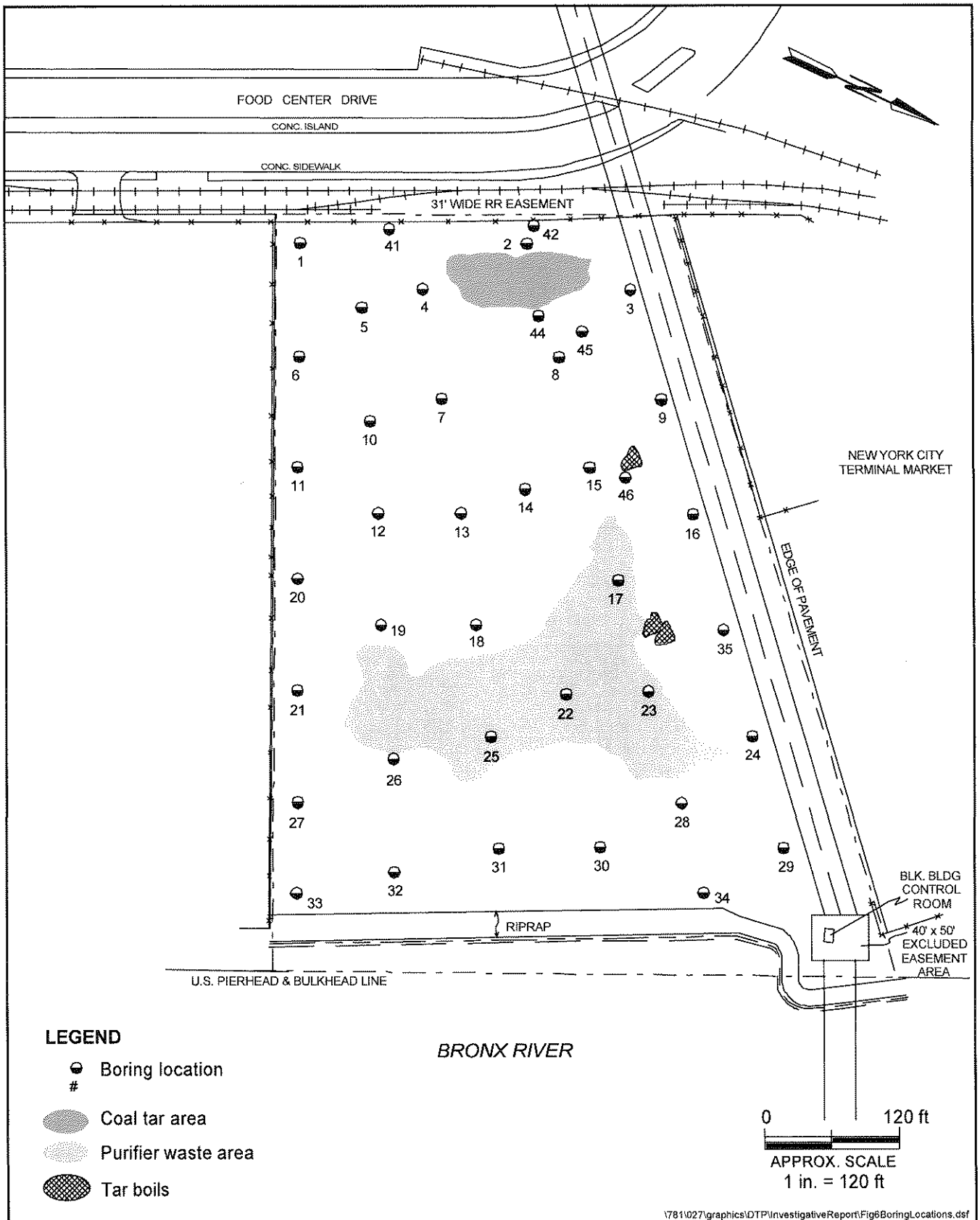
All down-hole sampling equipment was decontaminated between probes using cold wash techniques. The drill rig and all other sampling equipment was decontaminated at a designated decontamination pad using steam cleaning techniques when evidence of gross contamination was encountered and prior to leaving site.

Samples from within or adjacent to coal tar wastes were collected from probes and submitted for analysis of TCL VOCs using EPA Method 8260, SVOCs using EPA Method 8270, TAL metals, pesticides/PCBs using EPA methods 8081 and 8082, amenable cyanide, total cyanide, mercury, total organic halide, diesel range organics, and ammonia. All soil samples collected from probes were shipped under chain of custody protocol, at 4°C via overnight courier to a NYSDOH certified laboratory.

Samples containing purifier waste were collected in 2 ways. The first method included sampling the upper 5 ft of purifier waste (GP-11, -15, -19, -23, and -25) to evaluate the upper portion of material that most likely be disturbed by construction activity initiated at the site. VOCs were collected as a grab sample from the interval exhibiting the highest PID, FID or HCN reading (Figure 7). The remaining sample parameters included analyses for SVOCs, metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver), PCBs, mercury, Ammonia, total organic halide as Cl, amenable cyanide, total cyanide, and diesel range organics were composited from that 5 ft interval.

Samples were also collected from the ground surface to the overall bottom depth of the purifier waste (GP-2, -4, -8, -10, -21, and -22) to evaluate the overall site condition (Figure 8). Samples for VOCs were collected from the interval exhibiting the highest PID readings. The remaining analyses came from a composite of the entire sampling interval and included analyses for SVOCs, metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver), PCBs, mercury, Ammonia, total organic halide as Cl, amenable cyanide, total cyanide, and diesel range organics.

Four samples were collected from probe locations (GP-9, -35, 41, and -42) that contained coal tar. These samples consisted of sandy material with coal tar or thin layers of coal tar exhibiting a strong petroleum odor. Samples for VOCs were collected from the interval exhibiting the highest PID and FID readings. The remaining analyses came from the entire sampling interval and included analyses for SVOCs, TAL metals, PCBs, mercury, Ammonia, total organic halide as Cl, amenable cyanide, total cyanide, and diesel range organics.



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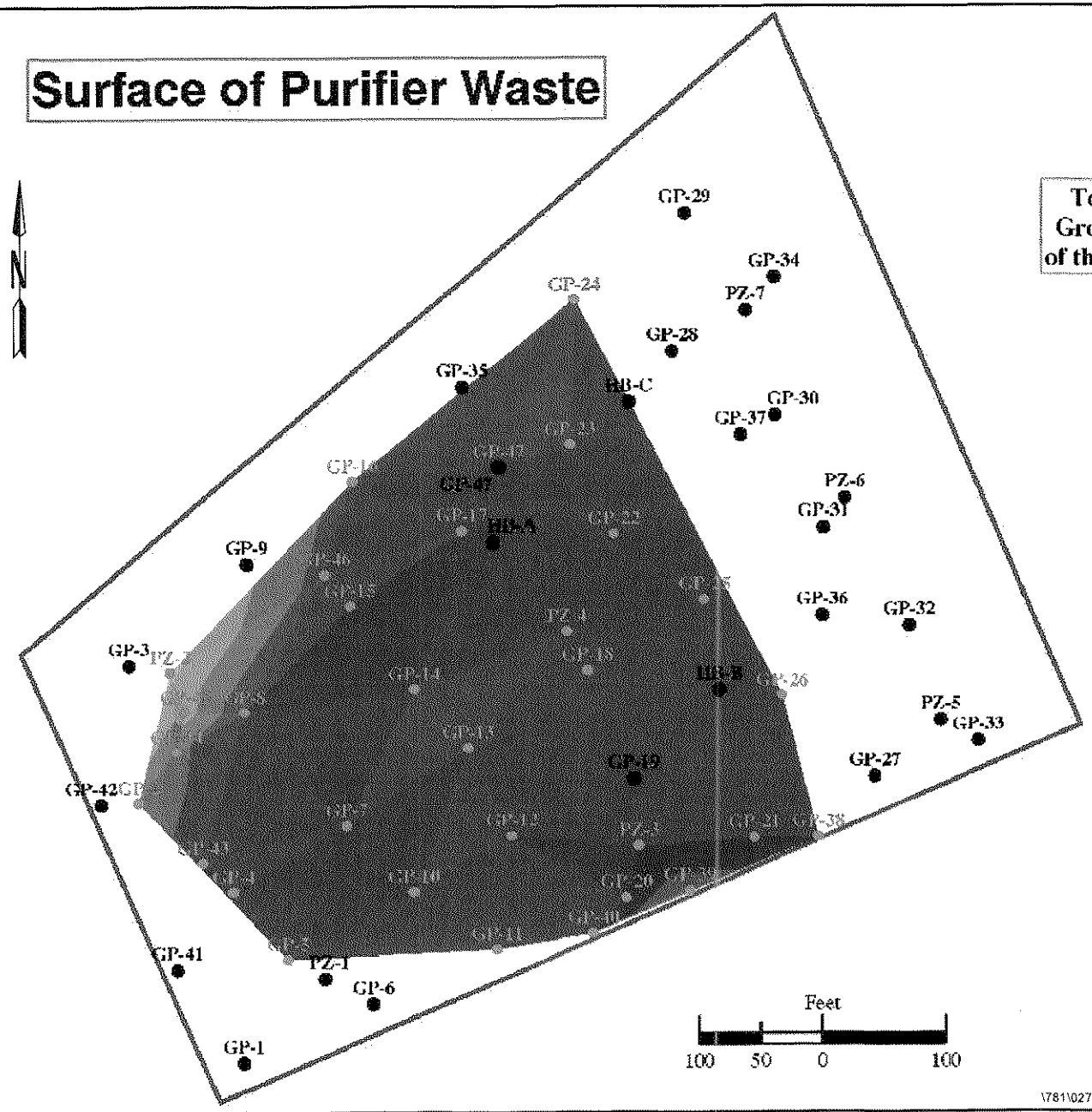
LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Site D Boring Locations** **HUNTS POINT**	**Figure 6**

Surface of Purifier Waste



Total Dredge Volume between Ground Surface and the Surface of the Purifier Waste ~ 3102 cu.yds

Depth below ground (ft)

- -0.5 - 0.0
- -1.0 - -0.5
- -1.5 - -1.0
- -2.0 - -1.5
- -2.5 - -2.0
- -3.0 - -2.5
- -3.5 - -3.0
- -4.0 - -3.5
- -4.5 - -4.0
- -5.0 - -4.5
- -5.3 - -5.0
- Other Wastes/Clean
- Property Boundary

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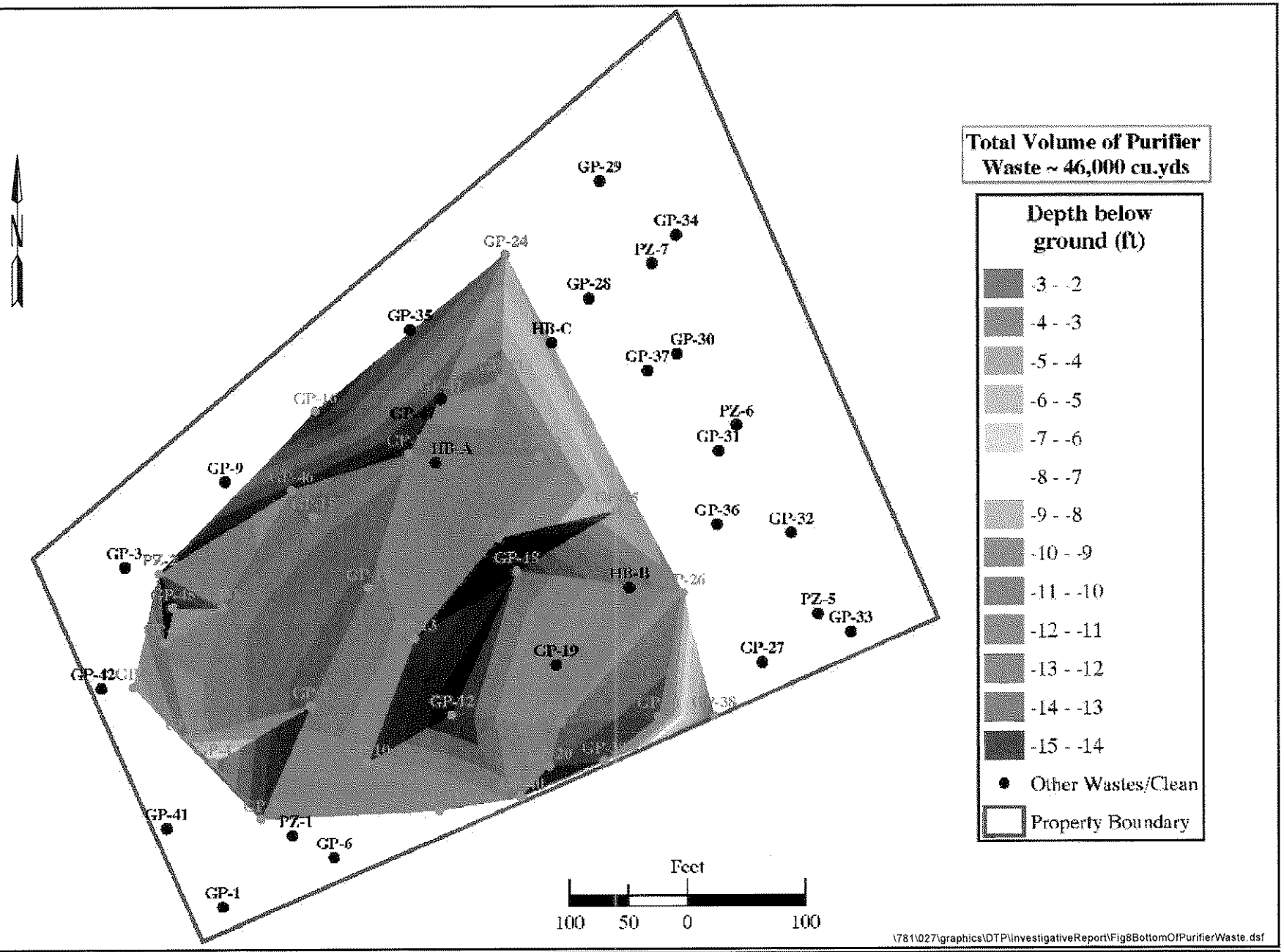
Surface of Purifier Waste

Figure 7



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Bottom of Purifier Waste

Figure 8

A large area devoid of vegetation was paid particular attention due to the large amount of purifier waste material at the surface. Probes were placed in and around the waste area to evaluate the thickness, total volume, physical, and chemical consistency of the material.

Site D area devoid of vegetation.

Groundwater quality was monitored by 7 temporary piezometers. The piezometers were spread around the Site to cover as much of the area as possible. In addition, their locations were determined by site conditions observed in the GPR survey and test probes.

Piezometers were also installed using direct push/probe drilling methods and tools. Since the purpose was to be able to measure and sample the shallow groundwater, they were advanced approximately 5 ft into the water table as it was identified during the installation. Sampling of fill material was continuous from grade to the bottom of the probe in order to identify both the fill native material interface as well as groundwater depth in relation to both. Samples were collected and described in detail on probe logs (Attachment B). The description includes color, material type and composition, relative grain size and distribution, presence of free moisture, evidence of contamination, and any other distinctive observations.

The piezometers were each constructed using 5 ft of 2-in inside diameter (I.D.) Schedule 40 PVC with 0.010 in. slot screen and solid riser to grade. The piezometers were back filled using #2 Morie sand to 2 ft above the top of the screen with a 2 ft

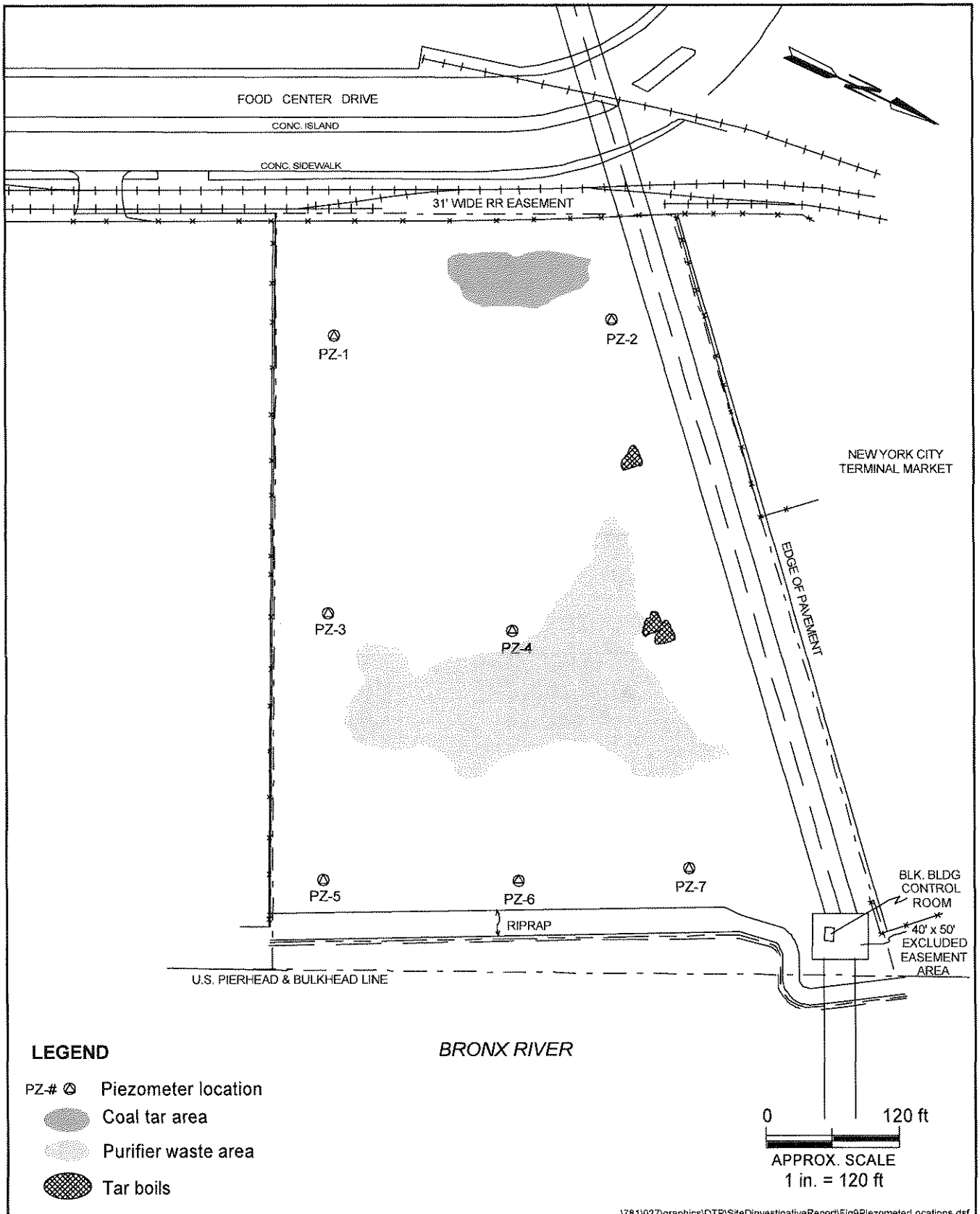
bentonite seal, the remainder of the annulus of the probe was backfilled with cuttings from the probe or clean sand to grade. Each point was then located using GPS and a site map prepared (Figure 9).

The piezometers were purged after completion to remove loose sediment that was resulting from the installation. This purging process could also be considered as a light development similar to what monitoring wells are subjected to. The piezometer was permitted to stabilize for a week after purging/development to allow groundwater to stabilize. Low flow sampling techniques were used to collect groundwater samples from the piezometers to minimize turbidity. The procedure included using dedicated tubing and a low pump to limit turbulence. Groundwater samples were collected from each Piezometer and analyzed for VOCs using EPA method 8260, SVOCs using EPA method 8270, TAL Metals, and Pesticides/PCBs. Results of this analysis are discussed later in this report.

After completion, the elevation at the top of casings for each piezometer was surveyed. Static water level measurements were taken at 5 of the 7 piezometers during sampling as PZ-6 and PZ-7 were found to have been tampered with. Samples were collected from those locations but the elevations were not believed to be valid with the survey. A groundwater contour map illustrating the direction of groundwater flow was created from the measurements of those piezometers that were able to be accurately measured. Piezometers 6 & 7 are believed to be in such close proximity to the Bronx River that they would have somewhat fluctuating water levels that are impacted by the tide. Figure 10 illustrates that the groundwater across the site flows generally towards the river. Although the contours appear to show pronounced undulations, they are based solely on measurements and factors that could impact the minor differences. These include depth to impermeable lenses, subsurface structures (bowls or domes) that would increase or decrease shallow drainage.

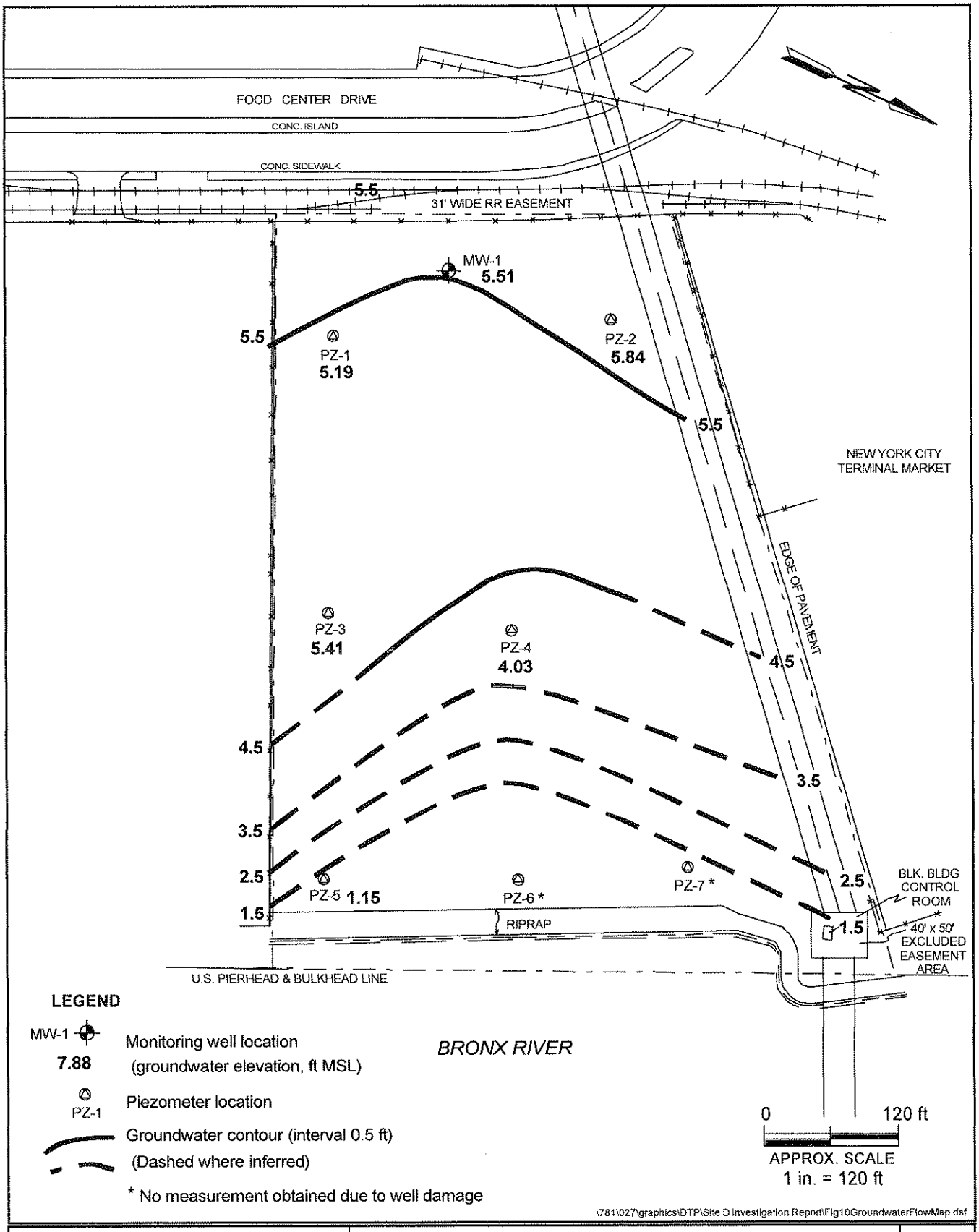
Daily Inspection of the Bulkhead

During the site investigation daily inspections were made of the bulkhead adjacent to the Bronx River along the East side of site D. Specific attention was paid to look for any signs of sheens, seeps, or staining observed on the water surface. This was checked within an hour of both low and high tides and at no time was anything spotted.



\781\027\graphics\DTP\SiteDinvestigativeReport\Fig9PiezometerLocations.dsf

Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Site D Piezometer Locations** **HUNTS POINT**	**Figure 9**



\781\027\graphics\DTP\Site D Investigation Report\Fig10GroundwaterFlowMap.dsf

Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Site D Groundwater Flow Map** **HUNTS POINT**	**Figure 10**

Site D Bulkhead

SAMPLING RESULTS

Soil Samples

Soil samples submitted for laboratory analyses were collected from probes that contained coal tar waste and/or purifier type waste. Samples were collected in laboratory-supplied containers, labeled with the appropriate sample identification, date and time of sampling, and analysis required.

The analytical results for the soil probe samples (identified by the prefix GP) are included as Table 2. The samples were composites of fill collected from the most visually contaminated layers of selected probe locations with the exception of the sample for VOC analysis that was collected from the portion of the probe exhibiting the highest PID reading, visual staining, or odor. A description of some of the results follows.

Volatile Organic Compounds (VOCs): Soil/fill samples that were submitted for analysis for VOCs were fairly typically found to contain concentrations of aromatic volatile organics (principally BTEX compounds) well above NYSDEC TAGM 4046 (New York State Department of Environmental Conservation Technical Administrative Guidance Memorandum 4046) cleanup goals. This is completely expected given the type and quality of the waste material and the fact that the

Hunt's Point Site D
Table 2
Soil Sampling Results (VOCs)

LMS Sample ID Sampling Date Matrix Units	GP-2 (2') 6/3/2004 Soil mg/kg	GP-4 (5') 6/2/2004 Soil mg/kg	GP-8 (7.5') 6/2/2004 Soil mg/kg	GP-9 (6') 6/3/2004 Soil mg/kg	GP-10 (6') 6/2/2004 Soil mg/kg	RECOMMENDED SOIL CLEANUP OBJECTIVE (a) mg/kg
VOLATILE ORGANIC COMPOUNDS (mg/kg)						
Acetone	ND	ND	**2.6 J**	ND	ND	0.2
Carbon Disulfide	ND	0.43 J	**50**	2.1	**9**	2.7
Benzene	**110 D**	**22**	ND	**0.87 J**	ND	0.06
Toluene	**360 D**	**30**	0.45 J	0.6 J	ND	1.5
Ethylbenzene	**160 D**	3.6	ND	0.47 J	0.29 J	5.5
Styrene	130	ND	ND	ND	ND	NS
Xylene (Total)	**620 D**	**41**	**1.5 J**	**1.4 J**	**1.4 J**	1.2
Total VOCs:	**1380**	**97.03**	**54.55**	5.44	**10.69**	10[1]

1 - As per TAGM #4046, total VOCs < 10 ppm, total SVOCs < 500 ppm, total pesticides < 10 ppm.

(a) - NYSDEC Technical Administrative Guidance Memorandum, January 1994.

j - Estimated concentration; compound present below quantitation limit

ND - Not detected at analytical detection limit

NS - No standard guidance value

LMS Sample ID Sampling Date Matrix Units	GP-11 (5') 6/1/2004 Soil mg/kg	GP-15 (1.5') 6/3/2004 Soil mg/kg	GP-19 (3.5') 6/7/2004 Soil mg/kg	GP-21 (6.0') 6/1/2004 Soil mg/kg	GP-22 (5.5') 6/3/2004 Soil mg/kg	RECOMMENDED SOIL CLEANUP OBJECTIVE (a) mg/kg
VOLATILE ORGANIC COMPOUNDS (mg/kg)						
Acetone	ND	ND	ND	**2.1 J**	ND	0.2
Carbon Disulfide	1.2 J	ND	**2.9**	**21**	**21**	2.7
Benzene	ND	ND	ND	ND	ND	0.06
Toluene	0.34 J	ND	ND	ND	0.25 J	1.5
Ethylbenzene	0.25 J	ND	ND	ND	0.28 J	5.5
Styrene	ND	ND	ND	ND	ND	NS
Xylene (Total)	**2.7**	ND	ND	ND	**2.1 J**	1.2
Total VOCs:	4.49	0	2.9	**23.1**	**23.63**	10[1]

1 - As per TAGM #4046, total VOCs < 10 ppm, total SVOCs < 500 ppm, total pesticides < 10 ppm.

(a) - NYSDEC Technical Administrative Guidance Memorandum, January 1994.

j - Estimated concentration; compound present below quantitation limit

ND - Not detected at analytical detection limit

NS - No standard guidance value

Hunt's Point Site D
Table 2
Soil Sampling Results (VOCs)

LMS Sample ID Sampling Date Matrix Units	GP-23 (1.5') 6/3/2004 Soil mg/kg	GP-25 (2.5') 6/3/2004 Soil mg/kg	GP-35 (2.0') 6/3/2004 Soil mg/kg	GP-41 (9') 6/7/2004 Soil mg/kg	GP-42 (7') 6/7/2004 Soil mg/kg	RECOMMENDED SOIL CLEANUP OBJECTIVE (a) mg/kg
VOLATILE ORGANIC COMPOUNDS (mg/kg)						
Acetone	ND	**0.670 J**	ND	ND	ND	0.2
Carbon Disulfide	1.1 J	**22**	0.28 J	ND	ND	2.7
Benzene	ND	ND	**50 D**	**8.5**	**19**	0.06
Toluene	ND	0.2 J	**67 D**	**7.2**	**3.9**	1.5
Ethylbenzene	ND	ND	**15**	2.6	**180 D**	5.5
Styrene	ND	ND	15	3.4	ND	NS
Xylene (Total)	ND	0.41 J	**110 D**	**10**	**170 D**	1.2
Total VOCs:	1.1	**23.28**	**257.28**	**31.7**	**372.9**	10[1]

1 - As per TAGM #4046, total VOCs < 10 ppm, total SVOCs < 500 ppm, total pesticides < 10 ppm.

(a) - NYSDEC Technical Administrative Guidance Memorandum, January 1994.

j - Estimated concentration; compound present below quantitation limit

ND - Not detected at analytical detection limit

NS - No standard guidance value

LMS Sample ID	GP-2 (0-10')		GP-4 (0-10')		GP-8(0-10.5')		GP-9(0-10')		GP-10 (1-15.5')		RECOMMENDED SOIL CLEANUP OBJECTIVE (a)
Sampling Date	6/3/04		6/2/04		6/2/04		6/2/04		6/2/04		
Matrix	Soil		Soil		Soil		Soil		Soil		
Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
Diesel Range Organics (mg/kg)	5900		7500		2000		36000		3100		
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)											
Phenol	ND		ND		ND		**4.1**	J	ND		0.03 or MDL
2-Methylphenol	ND		**3.5**	J	ND		**3.5**	J	ND		0.100 or MDL
4-Methylphenol	ND		**9.9**	J	ND		**4.2**	J	ND		0.9
2,4-Dimethylphenol	ND		2	J	ND		12	J	ND		
Naphthalene	**2200**	D	**410**	D	**180**	D	**2100**	D	**39**		13
2-Methylnaphthalene	**1200**	D	**110**		**49**		**600**		**11**	J	36
Acenaphthylene	30		23		3.8	J	**120**		3.3	J	41
Acenaphthene	8.9	J	12	J	1.6	J	**280**		4.3	J	50 ***
Dibenzofuran	**16**		**66**	J	**7.1**	J	**280**		**18**		6.2
Fluorene	**59**		**100**		14		**530**		24		50 ***
Phenanthrene	**2100**	D	**360**	D	29		**1500**	D	**140**	D	50 ***
Anthracene	47		**84**		4.3	J	**430**	D	26		50 ***
Fluoranthene	**1400**	D	**270**	D	16		**1000**	D	**86**		50 ***
Pyrene	**1600**	D	**230**	D	15		**800**	D	**61**		50 ***
Benzo(a)anthracene	**75**		**110**		**8.9**	J	**380**	D	**36**		0.061 or MDL
Chrysene	**82**		**92**		**11**	J	**420**	D	**37**		0.4
Benzo(b)fluoranthene	**770**	D	**120**	D	**9.5**	J	**350**	D	**42**		1.1
Benzo(k)fluoranthene	**28**		**40**		**5**	J	**130**		**15**		1.1
Benzo(a)pyrene	**70**		**95**		**8.1**	J	**360**	D	**29**		0.061 or MDL
Indeno(1,2,3-cd)pyrene	**27**		**35**		2.4	J	**150**	J	**11**	J	3.2
Dibenzo(a,h)anthracene	**3.7**	J	**5.6**	J	ND		**22**	J	**1.6**	J	0.014 or MDL
Benzo(ghi)perylene	28		32		2.3	J	**160**		9.4	J	50 ***
Total SVOCs:	**9744.6**		**2210.0**		**367.0**		**9635.8**		**593.6**		500[1]

MDL - Method Detection Limit

b - Indicates compound also detected in sample blank.

j - Estimated concentration; compound present below quantitation limit.

ND - Not detected at analytical reporting limit.

1 - As per TAGM #4046, total VOCs <10 ppm. Total SVOCs <500 ppm, total pesticides <10 ppm.

LMS Sample ID Sampling Date Matrix Units	GP-11 (0.5') 6/2/04 Soil mg/kg		GP-15 (0-5') 6/3/04 Soil mg/kg		GP-19 (0-5') 6/7/04 Soil mg/kg		GP-21 (0-11.8') 6/2/04 Soil mg/kg		GP-22 (0-10.5') 6/3/04 Soil mg/kg		RECOMMENDED SOIL CLEANUP OBJECTIVE (a) mg/kg
Diesel Range Organics (mg/kg)	1600		870		4800		500		1100		
SEMIVOLATILE ORGANIC COMPOUNDS (mg/kg)											
Phenol	ND		ND		ND		ND		ND		0.03 or MDL
2-Methylphenol	ND		ND		ND		**0.65**	J	ND		0.100 or MDL
4-Methylphenol	ND		ND		ND		ND		ND		0.9
2,4-Dimethylphenol	ND		ND		ND		ND		ND		
Naphthalene	**28**		**19**		7.9		**66**	D	**70**	D	13
2-Methylnaphthalene	**8.2**		3.8	J	2.2	J	**9.3**		10		36
Acenaphthylene	1.7	J	3.7	J	2.1	J	3.6	J	2.2	J	41
Acenaphthene	ND		ND		ND		0.98	J	ND		50 ***
Dibenzofuran	1.5	J	1.6	J	3	J	**18**		**7.5**		6.2
Fluorene	1.2	J	1.9	J	7.3	J	24		13		50 ***
Phenanthrene	3.7	J	8.4		14		**67**	D	30		50 ***
Anthracene	0.94	J	2.5	J	1.6	J	13		9.3		50 ***
Fluoranthene	5.8	J	18		13		26		20		50 ***
Pyrene	6.3	J	18		16		22		18		50 ***
Benzo(a)anthracene	**4.4**	J	**15**		**9.9**		**13**		**11**		0.061 or MDL
Chrysene	**7.9**		**19**		**14**		**14**		**13**		0.4
Benzo(b)fluoranthene	**15**		**26**		**17**		**14**		**17**		1.1
Benzo(k)fluoranthene	**5.8**	J	**15**		**6.6**	J	**7**		**6.6**	J	1.1
Benzo(a)pyrene	**3.8**	J	**12**		**6.7**	J	**11**		**9**		0.061 or MDL
Indeno(1,2,3-cd)pyrene	**3.9**	J	**7.3**	J	**4**	J	**3.8**	J	**4.5**	J	3.2
Dibenzo(a,h)anthracene	ND		**1.5**	J	**1.9**	J	**0.62**	J	ND		0.014 or MDL
Benzo(ghi)perylene	3	J	6.2	J	3.7	J	3.2	J	3.7	J	50 ***
Total SVOCs	**101.14**		**178.9**		**130.9**		**317.15**		**244.8**		500[1]

MDL - Method detection limit

b - Indicates compound also detected in sample blank.

j - Estimated concentration; compound present below quantitation limit.

ND - Not detected at analytical reporting limit.

1 - As per TAGM #4046, total VOCs <10 ppm. Total SVOCs <500 ppm, total pesticides <10 ppm.

LMS Sample ID	GP-23 (0-5')		GP-25 (0-5')		GP-35 (0-5')		GP-41 (8-11')		GP-42 (7-11')		RECOMMENDED SOIL CLEANUP OBJECTIVE (a)
Sampling Date	6/3/04		6/3/04		6/3/04		6/7/04		6/7/04		
Matrix	Soil		Soil		Soil		Soil		Soil		
Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg
Diesel Range Organics (mg/kg)	2300		1400		26000		2300		3700		
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)											
Phenol	ND		ND		**3.4**	J	ND		ND		0.03 or MDL
2-Methylphenol	ND		ND		**14**	J	ND		ND		0.100 or MDL
4-Methylphenol	ND		ND		**15**	J	ND		ND		0.9
2,4-Dimethylphenol	ND		ND		14	J	ND		ND		
Naphthalene	**45**		**18**		**1300**	D	**44**		**64**	D	13
2-Methylnaphthalene	8.5		3.3	J	**320**	D	8.9		25	D	36
Acenaphthylene	5.1	J	1.8	J	**190**	D	10		3.8	D	41
Acenaphthene	ND		ND		37		6.1	J	23	D	50 ***
Dibenzofuran	**9.6**		3.9	J	**200**	D	**8.5**		5.4	D	6.2
Fluorene	15		5.2	J	**340**	D	14		21	D	50 ***
Phenanthrene	40		13		**900**	D	46		**61**	D	50 ***
Anthracene	10		1.4	J	**270**	D	14		17	D	50 ***
Fluoranthene	28		6.5	J	**650**	D	33		31	D	50 ***
Pyrene	34		8.1	J	**490**	D	24		31	D	50 ***
Benzo(a)anthracene	**21**		**6**	J	**250**	D	**12**		**13**	D	0.061 or MDL
Chrysene	**26**		**7.8**	J	**250**	D	**12**		**15**	D	0.4
Benzo(b)fluoranthene	**34**		**6.9**	J	**220**	D	**12**		**11**	D	1.1
Benzo(k)fluoranthene	**14**		**3.1**	J	**86**		**4.7**	J	**4**	D	1.1
Benzo(a)pyrene	**20**		**5.9**	J	**220**	D	**11**		**12**	D	0.061 or MDL
Indeno(1,2,3-cd)pyrene	**11**		2.1	J	**96**		**3.8**	J	**3.8**	D	3.2
Dibenzo(a,h)anthracene	**1.9**	J	ND		**14**	J	**1.2**	J	**2.9**		0.014 or MDL
Benzo(ghi)perylene	9.4		2.1	J	**93**		3.7	J	3.9	D	50 ***
Total SVOCs	**332.5**		**123**		**5972.4**		**268.9**		**347.8**		500[1]

MDL - Method detection limit

b - Indicates compound also detected in sample blank.

j - Estimated concentration; compound present below quantitation limit.

ND - Not detected at analytical reporting limit.

1 - As per TAGM #4046, total VOCs <10 ppm. Total SVOCs <500 ppm, total pesticides <10 ppm.

Hunt's Point Site D
Table 2
Soil Sampling Results (Metals)

LMS Sample ID Sampling Date Matrix Units	GP-2 (0-10') 6/3/04 Soil mg/kg	GP-4 (0-10') 6/2/04 Soil mg/kg	GP-8(0-10.5') 6/2/04 Soil mg/kg	GP-9 (0-10') 6/3/04 Soil mg/kg	GP-10 (1-15.5') 6/2/04 Soil mg/kg	RECOMMENDED SOIL CLEANUP OBJECTIVE (a) mg/kg
METALS(mg/kg)						
Aluminum	NA	NA	NA	4130	NA	SB
Arsenic	**36.3**	**10.1**	**46.5**	**17.3**	**21.2**	7.5 or SB
Barium	55.5	ND	ND	123	ND	300 or SB
Calcium	NA	NA	NA	12600	NA	SB
Chromium	ND	**16.5**	**72.9**	**27.4**	**49**	10 or SB
Copper	NA	NA	NA	**96.6**	NA	25 or SB
Iron	NA	NA	NA	**54700**	NA	2000 or SB
Lead	185	100	151	220	79.7	SB****
Magnesium	NA	NA	NA	3420	NA	SB
Manganese	NA	NA	NA	240	NA	SB
Mercury	**7**	NA	NA	**2.9**	NA	0.1
Nickel	NA	NA	NA	**27.9**	NA	13 or SB
Potassium	NA	NA	NA	629	NA	SB
Selenium	ND	**4.2**	ND	ND	ND	2 or SB
Sodium	NA	NA	NA	ND	NA	SB
Vanadium	NA	NA	NA	40.8	NA	150 or SB
Zinc	NA	NA	NA	**177**	NA	20 or SB
Sulfur	75300	101000	151000	14900	107000	N/A
Cyanide, Total	170	1010	1240	99.4	345	***
Cyanide, Amenable to Cl	ND	ND	ND	ND	ND	***

*** - Site specific forms of Cyanide should be taken into consideration when establishing soil cleanup objective.

**** - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.

(a) - NYSDEC Technical Administrative Guidance Memorandum, January 1994.

ND - Not detected at analytical detection limit.

NA - Not analyzed

SB - Site background.

N/A - Not Available

LMS Sample ID Sampling Date Matrix Units	GP-11 (0.5') 6/2/04 Soil mg/kg	GP-15 (0-5') 6/3/04 Soil mg/kg	GP-19 (0-5') 6/7/04 Soil mg/kg	GP-21 (0-11.8') 6/2/04 Soil mg/kg	GP-22 (0-10.5') 6/3/04 Soil mg/kg	RECOMMENDED SOIL CLEANUP OBJECTIVE (a) mg/kg
METALS(mg/kg)						
Aluminum	NA	NA	NA	NA	NA	SB
Arsenic	ND	6.9	5.4	**49.4**	**13.7**	7.5 or SB
Barium	ND	ND	104	ND	ND	300 or SB
Calcium	NA	NA	NA	NA	NA	SB
Chromium	6.6	**19.3**	**11.5**	**134**	**26**	10 or SB
Copper	NA	NA	NA	NA	NA	25 or SB
Iron	NA	NA	NA	NA	NA	2000 or SB
Lead	34.4	22.5	132	147	49.7	SB****
Magnesium	NA	NA	NA	NA	NA	SB
Manganese	NA	NA	NA	NA	NA	SB
Mercury	NA	**4.2**	**1.4**	NA	**2.6**	0.1
Nickel	NA	NA	NA	NA	NA	13 or SB
Potassium	NA	NA	NA	NA	NA	SB
Selenium	**4.4**	**7**	**7.2**	ND	**7.1**	2 or SB
Sodium	NA	NA	NA	NA	NA	SB
Vanadium	NA	NA	NA	NA	NA	150 or SB
Zinc	NA	NA	NA	NA	NA	20 or SB
Sulfur	73600	98800	110000	131000	94100	N/A
Cyanide, Total	209	964	2950	468	715	***
Cyanide, Amenable to Cl	ND	ND	ND	ND	ND	***

*** - Site specific forms of Cyanide should be taken into consideration when establishing soil cleanup objective.

**** - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.

(a) - NYSDEC Technical Administrative Guidance Memorandum, January 1994.

ND - Not detected at analytical detection limit.

SB - Site background.

Hunt's Point Site D
Table 2
Soil Sampling Results (Metals)

LMS Sample ID Sampling Date Matrix Units	GP-23 (0-5') 6/3/04 Soil mg/kg	GP-25 (0-5') 6/3/04 Soil mg/kg	GP-35 (0-5') 6/3/04 Soil mg/kg	GP-41 (8-11') 6/7/04 Soil mg/kg	GP-42 (7-11') 6/7/04 Soil mg/kg	RECOMMENDED SOIL CLEANUP OBJECTIVE (a) mg/kg
METALS(mg/kg)						
Aluminum	NA	NA	6430	9760	8550	SB
Arsenic	**88.1**	**57**	**10.9**	ND	ND	7.5 or SB
Barium	ND	ND	52	57.5	58.7	300 or SB
Calcium	NA	NA	5100	1310	3040	SB
Chromium	**55.9**	**79.1**	**26.9**	**25.5**	**24.5**	10 or SB
Copper	NA	NA	**141**	17.5	24.4	25 or SB
Iron	NA	NA	**26300**	**16900**	**16100**	2000 or SB
Lead	221	148	217	10.5	57	SB****
Magnesium	NA	NA	1950	2990	3430	SB
Manganese	NA	NA	132	439	284	SB
Mercury	**5.2**	**0.23**	0.059	ND	ND	0.1
Nickel	NA	NA	**21.1**	**14.5**	**16**	13 or SB
Potassium	NA	NA	945	1030	1580	SB
Selenium	ND	ND	ND	ND	**2.5**	2 or SB
Sodium	NA	NA	ND	122	182	SB
Vanadium	NA	NA	51.2	28.1	32.2	150 or SB
Zinc	NA	NA	**127**	**40.8**	**65.6**	20 or SB
Sulfur	133000	142000	ND	ND	2030	N/A
Cyanide, Total	489	61.5	19.6	NA	NA	***
Cyanide, Amenable to Cl	ND	ND	ND	NA	NA	***

*** - Site specific forms of Cyanide should be taken into consideration when establishing soil cleanup objective.

**** - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.

(a) - NYSDEC Technical Administrative Guidance Memorandum, January 1994.

ND - Not detected at analytical detection limit.

SB - Site background.

Hunt's Point Site D
Table 2
Soil Sampling Results
(PCBs, Ammonia, Organic Halide)

LMS Sample ID Sampling Date Matrix Units	GP-2 (0-10') 6/3/04 Soil mg/kg	GP-4 (0-10') 6/2/04 Soil mg/kg	GP-8(0-10.5') 6/2/04 Soil mg/kg	GP-9 (0-10') 6/3/04 Soil mg/kg	GP-10 (1-15.5') 6/2/04 Soil mg/kg	RECOMMENDED SOIL CLEANUP OBJECTIVE (a) mg/kg
Ammonia	638	ND	386	219	174	
Total Organic Halide	ND	ND	ND	ND	ND	
PCBs						
Aroclor 1016	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1221	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1232	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1242	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1248	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1254	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1260	ND	ND	ND	**1.4**	ND	1 FOR SURFACE 10 FOR SUBSURFACE

(a) - NYSDEC Technical Administrative Guidance Memorandum, January 1994.

j - Estimated concentration; compound present below quantitation limit

ND - Not detected at analytical detection limit

P - Indicates a > 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported.

Hunt's Point Site D
Table 2
Soil Sampling Results
(PCBs, Ammonia, Organic Halide)

LMS Sample ID Sampling Date Matrix Units	GP-11 (0.5') 6/2/04 Soil mg/kg	GP-15 (0-5') 6/3/04 Soil mg/kg	GP-19 (0-5') 6/7/04 Soil mg/kg	GP-21 (0-11.8') 6/2/04 Soil mg/kg	GP-22 (0-10.5') 6/3/04 Soil mg/kg	RECOMMENDED SOIL CLEANUP OBJECTIVE (a) mg/kg
Ammonia	181	147	ND	93.3	304	
Total Organic Halide	ND	ND	ND	ND	ND	
PCBs						
Aroclor 1016	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1221	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1232	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1242	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1248	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1254	ND	ND	0.19 JP	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1260	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE

(a) - NYSDEC Technical Administrative Guidance Memorandum, January 1994.

j - Estimated concentration; compound present below quantitation limit

ND - Not detected at analytical detection limit

P - Indicates a > 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported.

Hunt's Point Site D
Table 2
Soil Sampling Results
(PCBs, Ammonia, Organic Halide)

LMS Sample ID Sampling Date Matrix Units	GP-23 (0-5') 6/3/04 Soil mg/kg	GP-25 (0-5') 6/3/04 Soil mg/kg	GP-35 (0-5') 6/3/04 Soil mg/kg	GP-41 (8-11') 6/7/04 Soil mg/kg	GP-42 (7-11') 6/7/04 Soil mg/kg	RECOMMENDED SOIL CLEANUP OBJECTIVE (a) mg/kg
Ammonia	213	440	131	ND	ND	
Total Organic Halide	ND	ND	ND	ND	ND	
PCBs						
Aroclor 1016	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1221	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1232	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1242	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1248	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1254	ND	ND	ND	ND	ND	1 FOR SURFACE 10 FOR SUBSURFACE
Aroclor 1260	ND	ND	ND	ND	.07 JP	1 FOR SURFACE 10 FOR SUBSURFACE

(a) - NYSDEC Technical Administrative Guidance Memorandum, January 1994.

j - Estimated concentration; compound present below quantitation limit

ND - Not detected at analytical detection limit

P - Indicates a > 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported.

samples were specifically collected to evaluate the material for treatment and/or disposal options.

Typical VOC compounds including BTEX were commonly found in addition to three "hits" for styrene (for which no cleanup value is available in the TAGM) and several more for carbon disulfide.

Carbon Disulfide is historically found in trace amounts in coal tar and could then be associated with both the tar and purifier waste material. It was identified in several samples principally where benzene concentrations were low or non detect. Although it is a common solvent used in laboratories for extractions, it is not believed to be reported as a cross-contaminant. Acetone was also detected in two samples in quantifiable concentrations and a third as estimated. There is no real identifiable source of acetone on the site nor have other samples from adjacent investigations on sites at Hunt's Point shown acetone to be a contaminant of concern. It is believed that the acetone that was identified and reported is related to a laboratory factor.

The remaining VOC analyses were low in comparison to coal tar samples collected from other sites where wastes (coal tar/purifier) were sampled for disposal.

Total VOC concentrations ranged from 0 to nearly 1400 mg/kg which are several orders of magnitude beneath coal tar concentrations of other samples but within a respectable comparative range of purifier type material from other sites.

Semi-Volatile Organic Compounds (SVOCs): All of the samples were reported to contain SVOCs as well as associated compounds above the recommended TAGM levels. Concentrations were however within ranges typically seen from other similar material sampled as part of projects in the vicinity.

Total concentrations ranged in the low 100's of mg/kg to just under 10,000 mg/kg (Table 2).

Diesel range organics (DRO) were also run to provide background for some potential disposal options. The analytical results did not indicate the petroleum content would be overly restrictive for material disposal.

Based on the results of other waste samples collected from sites in the Hunt's Point area, coal tar that does not contain a significant amount of fill will have increased DRO and SVOC concentrations. This particular site does not have or has not shown the significant deposits of coal tar found in other sites at Hunt's Point.

Of the probes sampled and analyzed, all had detectable levels of several compounds higher than the recommended soil cleanup objectives. The compounds exhibiting the highest concentrations include Naphthalene, 2-Methylnaphthalene, Phenanthrene, Fluoranthrene, Pyrene, Benzo(a)anthracene, and Benzo(b)fluoranthene. Table 2 list all of the SVOC compounds detected and those in excess of the NYSDEC recommended soil cleanup objectives are indicated in bold type. Three of the soil samples (GP-2, GP-9, and GP-35) exhibiting the highest

concentrations were collected from probe locations containing coal tar. A fourth soil sample (GP-4) exhibiting relatively high SVOC concentrations was collected at a probe location composed of purifier waste. GP-4 is located adjacent to the coal tar boil observed at the ground surface at the western side of the site.

Metals: Samples were collected from areas of both types of waste (purifier and coal tar). The main difference being that 4 samples collected from coal tar areas (GP-9, GP-35, GP-41, and GP-42) were analyzed for the full list of TAL metals, and the remaining eleven samples were analyzed for the shorter list of RCRA metals (in addition to Sulfur and Cyanides). The basic reason being that the treatment for coal tar is thermal adsorption or incineration and the emissions for this require a more thorough list of data. Although purifier type waste can also be thermally treated, it is not the intent at this time to recommend that.

Results for the entire set of analyses showed that the samples associated with purifier waste contained a significantly higher sulfur concentration than the coal tar samples. No amenable cyanide was reported in the sample. Table 2 lists all of the metals detected in each sample and those in excess of the NYSDEC recommended soil cleanup objectives are indicated in bold type.

Pesticides/PCBs: Three samples submitted for analysis were reported to contain concentrations of PCBs. Samples GP-19 and GP-42 contain estimated concentrations of Aroclor's well below the Residential Direct Contact Cleanup Criteria. The concentration at GP-9 was just above the recommended soil clean up objective for surface soil. The sample actually consisted of a composite from the ground surface to 10-ft below grade and therefore the direct contact concentration would not necessarily apply. Sample GP-9 consisted of sandy soil with traces of coal tar exhibiting a strong naptha odor. Soil at GP-19 consisted of purifier waste and soil at GP-42 consisted of sandy soil with some coal tar. Generally speaking, samples at other disposal sites did not have any substantial PCB issues similar to this.

Groundwater Sampling Results

The subsurface investigation at Site D also included the surficial material sampling and installation of seven (7) piezometers. One pre-existing monitoring well was located on the site from a previous investigation. The piezometers were generally screened in fill material, some of which consisted of purifier type waste, while the remainder was completed in fill material that consisted mainly of sand and other unconsolidated material.

Following their installation, the piezometers and monitoring well were sampled for VOCs, SVOCs, metals, Pesticides and PCBs. After the piezometers were sampled they were surveyed to prepare a groundwater contour map of the site. At that time, two piezometers PZ-6 and PZ-7 were found to have been damaged and therefore were not able to be surveyed. Those two were closest to the Bronx River shoreline and had the greatest potential to be tidally influenced. Since they were sampled and groundwater data was available, they were not reinstalled. The contour map uses the

data for PZ-5 (parallel to 6 and 7 along the river) and makes an assumption that they are not dissimilar in groundwater elevation. The groundwater map Figure 10 shows several feet of gradient across the site, basically trending toward the river.

Actual groundwater elevation across the site may have some variation due to the fact that the historic natural surface may have been peat or clay deposits. These may have been overlain at various points in time with fill from various sources including operation and demolition of the former manufactured gas plant, hydraulic fill from local dredging projects and other undocumented sources.

Analytical results for the piezometers vary in quality and this is believed to be dependant to a great degree on the actual sample locations. Several piezometers were installed and screened in the purifier waste material while others were screened in more "natural" sediment or fill (sands and silt). Piezometers 2, 3, 4, and MW-1 were installed and at least partially screened in saturated purifier type waste. The VOC and SVOC data is a good indicator of this in comparison to the other locations.

Groundwater samples were taken from the 7 temporary piezometers as well as an existing on-site well (MW-1). They were collected with dedicated sampling equipment and transferred to laboratory-supplied containers, labeled with the appropriate sample identification, date and time of sampling, analyses required, and sampler identification.

The results of the samples analyzed are summarized below as well as in Table 3.

Volatile Organic Compounds: Piezometers 2-4 all show levels of compounds over NYSDEC GW standards. No product was reported in any of the sampling locations but the sampling data from PZ-2, 3, 4 and MW-1 showed between 0.5 mg/l to approximately 70 mg/l of total VOCs. The main constituents (BTEX compounds) were all found in concentrations lower than the totals. Carbon disulfide which is found in trace amounts during coal processing was reported at 14 and 70 mg/l in PZ-3 and PZ-4.

In general BTEX concentrations were several hundred parts per billion in the piezometers located in the waste material.

Semi-Volatile Organic Compounds: The results of samples analyzed for SVOCs follow a similar pattern as above with the VOCs. Piezometers 2-4 show the most compounds present above the DEC GW standards. The highest of which include the compounds Naphthalene, 2,4-Dimethylphenol, and 2-Nitroaniline. Piezometers 1, 5, 6, and 7 show only one compound considerably above DEC GW standards. 2,4-Dimethylphenol is above GW standards in every location except PZ-1 and MW-1. The concentration of Naphthalene is just under 1 mg/l for even the most contaminated wells. Samples were also collected and filtered to determine if there was a substantial difference and there was not found to be any substantial difference, indicating that the low flow sampling was able to prevent significant sediment from becoming entrained in the sample.

Hunt's Point Site D
Table 3
Groundwater Sampling Results
(VOCs)

Lab Sample Number	237642-6	237708-1	237642-5	237642-4	237642-3	237642-2	237642-1	237708-3	NYSDEC
Sample ID	PZ-1	PZ-2	PZ-3	PZ-4	PZ-5	PZ-6	PZ-7	MW-1	CLASS GA
Date Collected	6/23/2004	6/24/2004	6/23/2004	6/23/2004	6/23/2004	6/22/2004	6/22/2004	6/24/2004	STANDARDS (b)
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	
Volatile Organic Compounds (ug/L)									
Acetone	ND	7.5	**500**	**220**	11	31	30	7.5 j	50 GV
Carbon Disulfide	3.1	ND	14000	70000	13	150	200	11	N/A
Benzene	ND	**320**	**73**	**67**	**4.5**	**19**	**42**	**320**	1
4-Methyl-2-Pentanone	ND	ND	ND	ND	ND	ND	6.4	ND	N/A
Toluene	ND	**33**	**24**	**26**	1.6	5	**5.5**	**33**	5
Ethylbenzene	ND	**81**	4.4	**8.5**	ND	1.1	1.5	**81**	5
Xylene (total)	ND	**76**	**43**	**77**	1.1	**6.5**	4.8	**76**	5
Total VOCs:	**3.10**	**517.50**	**14644.40**	**70398.50**	**31.20**	**212.60**	**290.20**	**528.50**	100[1]

1 - This value applies to the total of all organic substances listed in the New York State Groundwater Effluent Limitations table from the Division of Water Technical and Operational Guidance Series (1.1.1) with a groundwater effluent limitation less than 100 ug/l.

(b) - Division of Water Technical and Operational Guidance Series (1.1.1) June 1998.

d - Concentration recovered from diluted sample.

g - Value considered estimated based on data validator's report (Appendix B).

DL - Dilution factor.

GV - Guidance Value.

j - Estimated concentration; compound present below quantitation limit.

N/A - Not applicable.

ND - Not detected at analytical reporting limit.

Note - Numbers in bold exceed standard.

Hunt's Point Site D
Table 3
Groundwater Sampling Results
(SVOCs)

Lab Smple ID	237642-6	237642-6	237708-1	237708-1	237642-4	237642-4	237642-5	237642-5	237642-3	237642-3	237642-2	237642-2	237642-1	237642-1	237708-3	237708-3	NYSDEC
LMS Sample ID	PZ-1	PZ-1	PZ-2	PZ-2	PZ-3	PZ-3	PZ-4	PZ-4	PZ-5	PZ-5	PZ-6	PZ-6	PZ-7	PZ-7	MW-1	MW-1	CLASS GA
Date Collected	6/23/2004	6/23/2004	6/24/2004	6/24/2004	6/23/2004	6/23/2004	6/23/2004	6/23/2004	6/23/2004	6/23/2004	6/22/2004	6/22/2004	6/22/2004	6/22/2004	6/24/2004	6/24/2004	STANDARDS (b)
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	
		Diss		Diss		Diss		Diss		Diss		Diss		Diss		Diss	
Semivolatile Organic Compounds (ug/L)																	
Naphthalene	ND	ND	**750**	**690**	**1100**	**980**	**860**	**730**	**120**	**77**	**34**	**39**	**96**	**71**	8.2 j	5.7 j	10 GV
Phenanthrene	ND	ND	15	13	9.5 j	8.4 j	6.8 j	6.1 j	ND	ND	ND	ND	4.4 j	ND	ND	ND	50 GV
Anthracene	ND	ND	2.1 j	1.8 j	1.5 j	1.6 j	1.2 j	1.2 j	ND	ND	ND	ND	ND	ND	ND	ND	50 GV
Fluoranthene	ND	ND	2.7 j	1.9 j	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50 GV
Pyrene	ND	ND	2.5 j	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50 GV
Dimethylphthalate	ND	ND	ND	ND	1.6 j	2.2 j	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50 GV
bis (2-ethylhexyl)phthalate	ND	ND	ND	1.2	ND	ND	ND	1.5 j	ND	ND	ND	ND	1.0 j	ND	2.8 j	ND	5
Pentachlorophenol	ND	ND	**1.8**	**2.7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
Acenaphthylene	2.4	2.3	1.2 j	ND	ND	ND	1.1 j	1.2 j	ND	ND	ND	ND	ND	ND	ND	ND	N/A
Acenaphthene	7.7	8	7.6 j	7.2 j	ND	ND	ND	ND	ND	ND	ND	ND	1.5 j	1.5 j	2.0 j	1.1 j	20 GV
Dibenzofuran	2.1	2.1	ND	ND	14	15	7.1 j	6.2 j	ND	ND	ND	ND	2.6 j	2.4 j	ND	ND	N/A
Fluorene	3.4	3.5	15	14	18	19	6.0 j	5.8 j	ND	ND	ND	ND	4.2 j	4.0 j	1.1 j	ND	50 GV
2-Methylphenol (o-cresol)	ND	ND	14	16	6.0 j	8.8 j	ND	ND	ND	ND	2.0 j	3.3 j	5.0 j	5.6 j	ND	ND	N/A
4-Methylphenol (m/p-cresol)	ND	ND	28	32	16	27	21	24	2.3 j	ND	5.6 j	3.3 j	21	26	ND	ND	N/A
2,4,-Dimethylphenol	ND	ND	**23**	**28**	**5.3 j**	**7.6 j**	**5.6 j**	**6.4 j**	**1.4 j**	**1.3 j**	**3.6 j**	**4.7 j**	**19**	**18**	ND	ND	1
2-Methylnapthalene	ND	ND	17	ND	24	25	19	18	6.8 j	4.8 j	ND	ND	4.9 j	4.1 j	ND	ND	N/A
2-Nitroaniline	ND	ND	ND	16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total SVOCs	**15.6**	**15.9**	**879.9**	**823.8**	**1195.9**	**1094.6**	**927.8**	**800.4**	**130.5**	**83.1**	**45.2**	**50.3**	**159.6**	**132.6**	**14.1**	**6.8**	

j - Estimated concentration; compound present below quantitation limit.

GV - Value taken from NYSDEC Class GA Guidance Value.

N/A - Not applicable.

ND - Not detected at analytical detection limit.

Hunt's Point Site D
Table 3
Groundwater Sampling Results
(Metals)

Lab Sample ID	237642-6	237642-6	237708-1	237708-1	237642-4	237642-4	237642-5	237642-5	237642-3	237642-3	237642-2	237642-2	237642-1	237642-1	237708-3	237708-3	NYSDEC
LMS Sample ID	PZ-1	PZ-1	PZ-2	PZ-2	PZ-3	PZ-3	PZ-4	PZ-4	PZ-5	PZ-5	PZ-6	PZ-6	PZ-7	PZ-7	MW-1	MW-1	CLASS GA
Sampling Date	6/23/2004	6/23/2004	6/24/2004	6/24/2004	6/23/2004	6/23/2004	6/23/2004	6/23/2004	6/23/2004	6/23/2004	6/22/2004	6/22/2004	6/22/2004	6/22/2004	6/24/2004	6/24/2004	STANDARDS (b)
Matrix	Water	Water Diss	Water	Water Diss	Water	Water Diss	Water	Water Diss	Water	Water Diss	Water	Water Diss	Water	Water Diss	Water	Water Diss	
METALS (µg/l)																	
Aluminum	ND	ND	264	255	93800	111000	60500	47300	48500	48900	67700	66300	77200	88500	519	497	N/A
Arsenic	ND	ND	ND	ND	**199**	**190**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	25
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	**7.8**	**7.9**	ND	ND	ND	ND	ND	ND	3 GV
Calcium	10400	10400	102000	10100	312000	367000	321000	217000	250000	254000	146000	143000	419000	462000	260000	257000	N/A
Chromium	ND	ND	ND	ND	**1520**	**1820**	**2280**	**1680**	**180**	**182**	ND	**299**	**147**	**168**	14.9	14.6	50
Cobalt	ND	ND	72.5	71.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A
Copper	ND	ND	ND	ND	**573**	**354**	ND	ND	ND	ND	63.9	84	ND	ND	ND	ND	200
Iron	**6610**	**6770**	**15600**	**15300**	**1340000**	**1540000**	**973000**	**713000**	**107000**	**109000**	**331000**	**322000**	**1700000**	**1910000**	**29300**	**27300**	300
Lead	ND	12.9	5.7	5.6	**778**	**873**	**67.3**	**50.7**	9.8	9.9	**292**	**288**	**139**	**146**	ND	ND	25
Magnesium	10400	10500	13000	12800	ND	ND	ND	ND	**169000**	**169000**	**80700**	**80000**	**223000**	**249000**	**130000**	**130000**	35000 GV
Manganese	**472**	**471**	107	105	**8110**	**9450**	**4610**	**4860**	**2730**	**2780**	**3570**	**3500**	**20200**	**22800**	**26700**	**26500**	300
Mercury	ND	ND	ND	ND	0.5	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7
Nickel	ND	ND	ND	ND	**470**	**440**	**1080**	**980**	ND	ND	**104**	**108**	ND	ND	ND	ND	100
Potassium	ND	ND	ND	ND	ND	ND	ND	ND	36100	38200	39400	40100	80000	92600	9420	9470	N/A
Selenium	ND	ND	ND	ND	**152**	**196**	**119**	**81**	ND	ND	**40.6**	**34.3**	**209**	**209**	ND	ND	10
Sodium	5670	5740	5890	5470	ND	ND	ND	ND	**732000**	**760000**	**124000**	**124000**	**152000**	**175000**	**120000**	**121000**	20000
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**40.9**	**43.5**	0.5 GV
Vanadium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120	118	ND	ND	ND	ND	N/A
Zinc	ND	ND	ND	ND	**2040**	**2310**	1890	1670	52.3	54	287	288	ND	ND	20.3	ND	2000 GV
Cyanide	0.113	NA	**221**	NA	**0.69**	NA	0.109	NA	0.017	NA	0.018	NA	0.087	NA	**0.382**	NA	0.2
Total Metals:	**33552.11**	**33893.90**	**137160.20**	**44107.40**	**1759643.19**	**2033633.50**	**1364546.41**	**986621.70**	**1345579.92**	**1382133.80**	**793277.52**	**780119.30**	**2671895.09**	**3000423.00**	**576015.48**	**571825.10**	

(b) - Division of Water Technical and Operational Guidance Series (1.1.1) June 1998.

g - Value considered estimated based on data validator's report (Appendix B).

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

D - Value rejected by data validator and found to be unusable (Appendix B).

GV - Value taken from NYSDEC Class GA Guidance Value.

R - Duplicate analysis not within control limits.

N/A - Not available.

ND - Not detected at analytical detection limit.

Note - Numbers in bold exceed standard.

NA - Not Analyzed

Table 3
Groundwater Sampling Results
(Pesticides, PCBs)

Lab Sample Number	237642-6	237708-1	237642-4	237642-5	237642-3	237642-2	237642-1	237708-3	NYSDEC
LMS Sample Number	PZ-1	PZ-2	PZ-3	PZ-4	PZ-5	PZ-6	PZ-7	MW-1	CLASS GA
Sampling Date	6/23/2004	6/24/2004	6/23/2004	6/23/2004	6/23/2004	6/22/2004	6/22/2004	6/24/2004	STANDARDS (b)
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	
PESTICIDES/HERBICIDES/PCBs (ug/L)									
Pesticides	ND	ND g	ND	ND g	ND	ND	ND	ND	5
PCB Aroclors	ND	ND g	ND	ND g	ND	ND	ND	ND	0.09
Totals:	ND	ND	ND	ND	ND	ND	ND	ND	

(b) - Division of Water Technical and Operational Guidance Series (1.1.1) June 1998.

g - Value considered estimated based on data validator's report (Appendix B).

ND - Not detected at analytical detection limit.

1 - Blind Duplicate.

Note - Numbers in bold exceed standard.

In reviewing the data for class GA standard or guidance contravention, naphthalene was the primary compound above the established guidance value. 2,4-Dimethylphenol was also above in most locations at a substantially lower concentration (generally single digit concentrations).

Metals: Each sample of groundwater was collected using low flow peristaltic pumps and dedicated tubing. Purge rates were very low and this helped in keeping turbidity (suspended particulates) at a minimum. The comparison between filtered and unfiltered analyses provides a very clear indication that low flow sampling produces sample results that typically are the same or in some cases are biased just slightly higher than the dissolved fraction.

There were several metals in most of the samples that were above the Class GA standards. These typically included: chromium, iron, lead, magnesium, manganese, selenium, and sodium.

Their results are not significant in and of themselves but when a comparison is made with piezometers located in the fill (purifier type waste) material to those installed outside in more typical soil and building demo fill, a clear distinction appears. Groundwater quality outside of the fill material shows that concentrations are generally lower than piezometers within the waste material. There is some indication that inorganic contamination exists in the shallow groundwater down gradient of the fill zone.

Pesticides/PCBs: All GW samples analyzed for both pesticides and PCBs came back below the detection limit.

CONCLUSIONS AND RECOMMENDATIONS

LMS has reviewed all of the information that has been made available for Site D, and following completion of the field sampling program, has made the following observations.

The field sampling program included an extensive examination of over 45 test probes and the collection and analysis of samples from the probes that appeared to be in or adjacent to areas with the most obvious signs of contamination. Groundwater was monitored by an existing on-site monitoring well and the installation of 7 temporary piezometers which were sampled to document groundwater quality. The results of the soil and groundwater investigation at site D revealed several distinct areas of fill and contamination throughout the site (see Attachments A and B). Preliminary recommendations for addressing the contaminants, potential restrictions, and future use of the Site are discussed in this report. More detailed scenarios are identified and discussed in The Remedial Recommendations Report.

Conditions documented during the investigation indicate that residual waste related to former activities from the manufactured gas plant exist around site D. Residual coal tar wastes are present in deposits that are small in comparison to the purifier type waste that dominates the landscape. Generally, the coal tar deposits are seen

as surface boils and although they have the potential in isolated locations to extend to some depth (as seen on other sites at Hunt's Point) they have not been found in the investigation to be substantial. The largest deposit of coal tar that was identified on the site was found at the surface along the western edge of the site. This exists as a small ridge that lies in a somewhat north/south orientation. Sampling did not indicate the deposit was connected to an extensive underground area of coal tar but it is estimated that there may be several thousand yards in this area if it were excavated. Three probe borings were advanced in or adjacent to the largest surface deposit of coal tar (GP-2, GP-43, and GP-44). Other by products of coal gasification exist on the site as surface and subsurface deposits of ash and slag. The main area of contamination is related to apparent waste material that has been used as fill in a low lying area near the center and western portions of the site. The site was apparently filled in along the Bronx River edge with dredging spoils and as aerial photos and historic maps indicate, the site has not had any buildings or structures on it.

A large area of purifier type waste is present across the middle of the site (Photo 1). The waste consists of wood chips and cinders and slag with a bright blue-green color. The surface of the waste area that was visible is irregular but the entire area measures approximately 350 ft by 450 ft and is located a little east of the center of the site. Probes advanced through this area showed that the waste varies but was found to extend to a depth of 14 ft below grade.

Following a review of the boring logs and a comparison to the analytical data it is apparent that the contamination on the site can be separated in two general categories; the first is the general fill material that consists of soil, dredge spoils, industrial wastes (composed specifically of coal ash, cinders, and incinerated waste) and other debris and the second; which is consistent of mgp by products and waste generated during what is believed to be actual manufacture of coal gas. These include the solid and potentially flowable coal tars as well as the multicolored purifier type wastes that are characterized with the bright blue and green wood chip, cinder and slag material.

The lab results show a fairly pronounced line of demarcation between the purifier wastes and the coal tar in the VOC and SVOC analyses. Where the waste with coal tar noted in the horizon that was included in the sample contained notably higher concentrations of BTEX and specific SVOC compounds.

Although the concentrations that were reported were higher that typical samples containing purifier waste, they were several orders of magnitude less than samples collected from the more concentrated coal tars encountered on other parcels previously investigated (sites A-ou2 and B). The difference in BTEX in this coal tar is believed to be related to the size of the deposit which is much smaller than on those other sites.

Metals concentrations would be expected to be similar, mainly due to the close proximity that the materials have with each other. The main component of the total

inorganic (total metals) concentration for the purifier material is sulfur. In each instance sulfur was greater than 90% of the total of the added inorganics. The coal tar samples contained significantly less sulfur and in several samples, none was detected. Again, this result is similar to other comparisons of coal tar and purifier waste. Cyanide (total) was present in each sample that was analyzed for it. No amenable concentrations were reported above detection limits.

There was a single sample that contained a quantifiable concentration for PCB's and this was in an area just outside (north) of the waste. The sample (GP-9) was a composite from the surface to 10 ft below grade and was slightly above the residential guidance of 1.0 mg/kg. Two other samples were reported to have estimated concentrations of PCB's, both (GP-19 and GP-42) were an order of magnitude (approximately) below the residential guidance.

The overall results indicate that the purifier waste is the prevalent material that will require some type of remedial action across the site. The issues in either treatment (in situ) or off site disposal of this will be related primarily to metals, cyanide and sulfur. The VOC levels are not significant enough in of themselves to require a specific remedy.

The coal tar exists in smaller deposits than the purifier wastes and was found in areas that could be removed for disposal more easily and completely. Concentrations of BTEX are not relatively significant (with respect to) coal tar found during previous investigations.

Groundwater contains fairly significant concentrations of dissolved inorganics but with the exception of two locations containing carbon disulfide (PZ-3 and PZ-4), not extremely high dissolved volatile organics and semi volatile organics. No free phase product was encountered in the piezometers or well. In comparison to the coal tar that was encountered in monitoring wells #1 and #3 from the perimeter investigation (up gradient and adjacent to Site D), there was no issue related to those conditions seen on Food Center Drive on site D (coal tar entering screened intervals or present at the water table). There were however, dissolved concentrations of carbon disulfide reported in two piezometers on Site D that indicated they are the result of two possible conditions. Carbon disulfide is known to be a by product found in coal tar but it is also a compound that is in a very reduced state and basically can be created under anaerobic conditions.

Carbon disulfide has not been encountered in any significant concentrations elsewhere on the former MGP facility in either coal tar or purifier type wastes. It is believed then that the carbon disulfide may be attributed to anaerobic conditions created in the large volume of purifier type waste that is comprised of wood pulp and coal cinders/slag.

The inorganics are principally heavy metals that are found in historic fill materials from former industrial areas. Typical analytes above Class GA Standards included: Chromium, iron, magnesium, manganese, nickel, and sodium.

The source of these concentrations may be from both historic fill and from purifier wastes. The cyanide concentrations which were above the Standard in several locations are all attributed to the waste material.

Based on the condition of the site, amount and thickness of buried waste material and the presence of coal tar, the groundwater exceedances are relatively mild.

The proposed future redevelopment and usage of the property will include the importation of fill material to level and grade the Site and construction of a slab on grade building across the central portion of the Site with asphalt parking areas surrounding the building and covering the remainder of the Site. This construction would not require significant excavation or removal of material off-site. Subsurface disturbances would be confined to installation of utilities, drainage, slab supports, and possible truck loading ramps. After reviewing the Site data and understanding the final proposed use of the Site, LMS has taken the following factors into account:

- The volatile organics identified in the Site fill, soils and groundwater were found in concentrations that would not be a cause for concern for normal exposure and can be mitigated using engineering and institutional controls.

- Semivolatiles present do not pose an inhalation threat, and after being capped with either additional fill, parking lots, or concrete building slabs, they will be effectively encapsulated.

- Metals present in the fill material, including cyanide will not present an exposure threat once additional filling of the Site and capping occurs.

- Pesticides and PCBs are not an issue, as any concentrations are present below subsurface cleanup criteria.

Based on the analytical results, the environmental conditions encountered on-site, and the intended future use of the Site, in brief, LMS recommends the following:

- Removal of coal tar boils, with subsequent off-site disposal of material.

- Removal of purifier bed wastes in areas where soil/fill disturbance is necessitated by redevelopment, with subsequent off-site disposal of material.

- Installation of a remediation system to address soil and groundwater in the area of petroleum contamination at the center of the Site. The remediation system will be integrated with the design of the proposed building.

- Prior to construction of building, utilities, and parking areas, an engineered barrier is placed on the surface of the remaining waste and general fill to isolate and prevent contact while providing a marker identifying this material for any future work.

- Prepare documentation regarding restrictions for the future development of the Site. Included in this will be two documents: Health and Safety Plan (HASP) and Soil Management Plan (SMP). These will describe requirements to be met during post construction for the protection of the health and safety of workers (HASP), specifications for handling potential disposal of additional material from any future excavations that may be performed (SMP), and proper procedures for such, as well as the management of soil/fill to remain on-site.

The recommendations are described in more detail in the addendum to this report entitled: Remedial Recommendations.

ATTACHMENT A

Legal Description
Of a Portion
Of
Lot 500 Block 2781
SITE "D"
Borough of the Bronx
County of the Bronx
State of New York
TRG No. 03-024

Beginning at a point, said point being the intersection of the easterly sideline of Food Center Drive with the southerly line of the New York City Terminal Market in common with the northerly line of Site "D"; thence

1. Along the southerly line of the New York City Terminal Market North 49° 46' East a distance of 717.3' to a point on the U.S. Pierhead & Bulkhead Line for the Bronx River; thence

2. Running southerly along said Bulkhead Line South 23° 14' East a distance of 562.0'; thence

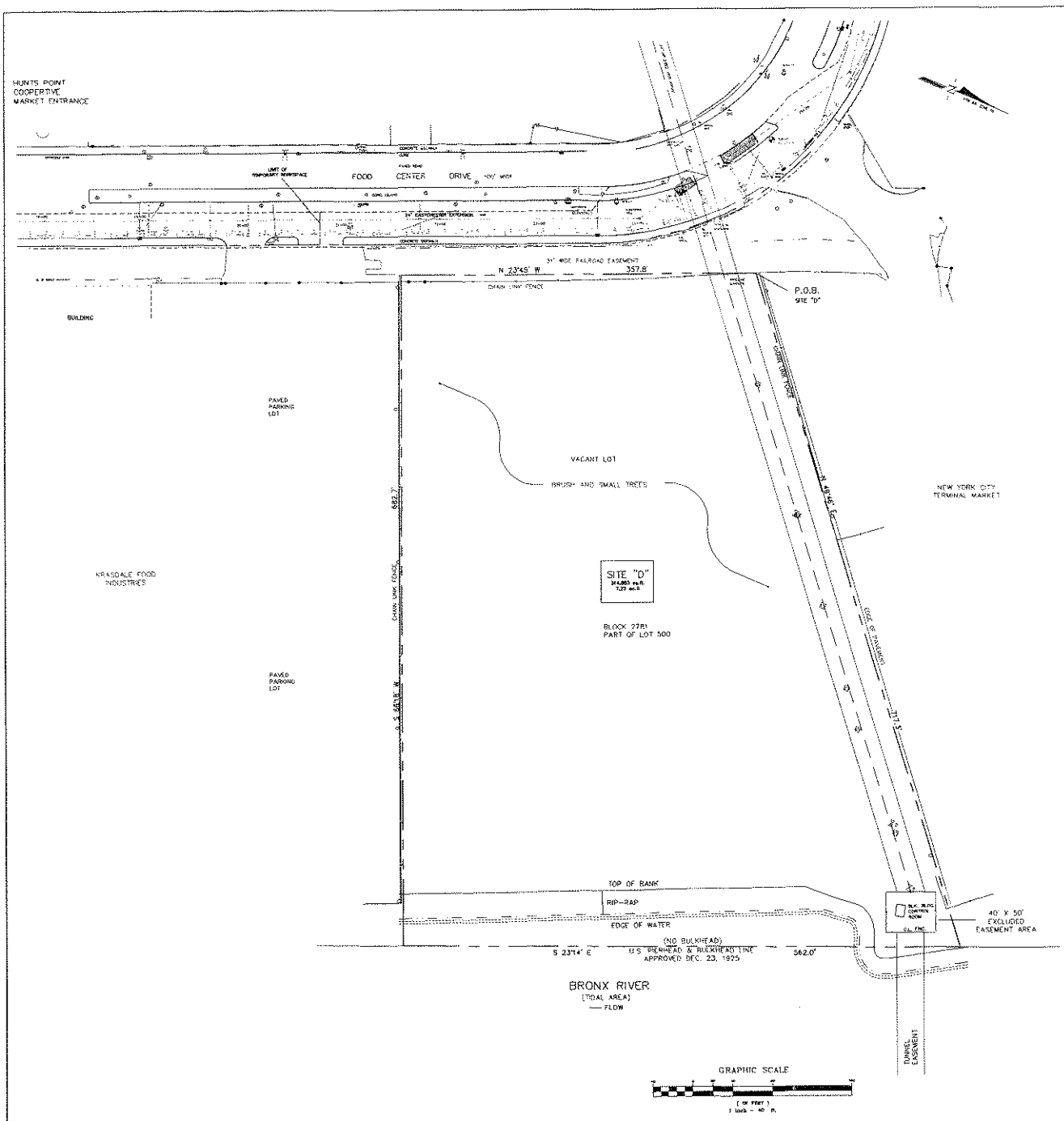
3. Leaving said Bulkhead Line and running with an existing chain link fence for Krasdale Food Industries, South 66° 18' West a distance of 682.7' to the easterly sideline of Food Center Drive; thence

4. Along said sideline North 23° 45' West a distance of 357.8' to the point and place of beginning.

Containing 314,883 square feet or 7.23 acres of land, more or less.

THE REYNOLDS GROUP, INC.
John M. Hale, PLS
N. Y. License Number 50003
August 12, 2003
Revised October 15, 2003

Block 2781, Lot 500-Site D.leg



NOTES

1. THIS SURVEY IS VALID ONLY WHEN EMBOSSED SEAL IS AFFIXED HERETO.
2. THE CERTIFICATION SHOWN HEREON IS NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
3. THE REYNOLDS GROUP, INC. AND/OR ITS EMPLOYEES ARE NOT LIABLE FOR ERRORS, WITHIN AND/OR OMISSIONS FROM ANY DOCUMENTS PROVIDED BY OTHERS.
4. HORIZONTAL DATUM IS (1983) ZONE 18 INTERNATIONAL FEET GRID, VERTICAL DATUM IS (NAVD 88) (FEET).
5. BOUNDARY INFORMATION SHOWN HEREON IS APPROXIMATE AND SUBJECT TO CHANGE.

REFERENCES

1. MAP ENTITLED CONSOLIDATED EDISON COMPANY HUNTS POINT COMPRESSOR STATION BRONX NEW YORK SITE PLAN, PREPARED BY STONE & WEBSTER ENGINEERING CORPORATION, DRAWING NUMBER 17297-FY-1A-3.
2. MAP ENTITLED CONSOLIDATED EDISON COMPANY, HUNTS POINT COMPRESSOR STATION BRONX NEW YORK COMPRESSOR STATION PIPING", PREPARED BY STONE & WEBSTER ENGINEERING CORPORATION, DRAWING NUMBER 17297-FY-1B-2
3. MAP OR PLAN OF SECTION 5, SECTION 3 OF FINAL MAPS AND PROFILES OF THE 23rd AND 24th WARDS NEW YORK CITY TOPOGRAPHICAL BUREAU, DECEMBER 8th, 1892
4. MAP DISCONTINUING AND CLOSING THE STREET SYSTEM WITHIN THE TERRITORY BOUNDED BY HALLACK ST., EDGEWATER ROAD, LAFAYETTE AVE., BRONX RIVER & EAST BAY AVE., PLAN NO. 11527, MARCH 29 1961 BY CITY OF NEW YORK ENGINEERING BUREAU, TOPOGRAPHIC DIVISION
5. MAP OF PROPERTY AT HUNTS POINT, BRONX COUNTY, NEW YORK, DATED FEB. 17, 1865 BY CHAS. J. DEARING, LAST REVISED JUNE 30, 1966
6. MAP SHOWING THE CHANGES TO LINES AND GRADES IN HALLACK STREET AT HUNTS POINT AVENUE, PLAN NO. 11659, DATED MARCH 2, 1962 BY CITY OF NEW YORK ENGINEERING BUREAU - TOPOGRAPHICAL DIVISION
7. MAP DISCONTINUING AND CLOSING HUNTS POINT AVE. FORM HALLACK STREET TO FARRAGUT ST. & VIELE AVE. AND RYAWA AVE. FROM HALLACK STREET TO HUNTS POINT AVE., PLAN NO. 11772, NOT DATED, BY CITY OF NEW YORK BUREAU OF TOPOGRAPHY

CERTIFICATION

I HEREBY CERTIFY TO THE FOLLOWING PARTIES THAT I AM A PROFESSIONAL LAND SURVEYOR LICENSED TO PRACTICE IN THE STATE OF NEW JERSEY, AND THAT THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY PERFORMED UNDER MY IMMEDIATE SUPERVISION. I FURTHER DECLARE TO THE BEST OF MY KNOWLEDGE AND BELIEF, THAT THIS PLAN IS A CORRECT AND ACCURATE REPRESENTATION OF CONDITIONS EXISTING AS OF THE DATE HEREON.

The Reynolds Group Inc.
Engineers
Landscape Architects
Land Surveyors
Planners
220 N. Bromley Street
Bartley, N.J. 08868
908-722-1900
Fax 908-722-1638
State of New Jersey
Certificate of Authorization
Number GA-278945
Harry E. Reynolds Jr., P.L.S., P.P.
F. Michael Wagner, P.E., P.P.
Richard R. Gallo, P.E., P.P.
JOHN M. HALE
PROFESSIONAL LAND SURVEYOR, N.Y. No. 50063

SITE "D"

TOPOGRAPHIC SURVEY
BLOCK 2781
PART OF LOT 500
CITY OF NEW YORK
BRONX COUNTY, NEW YORK

job number	05-024-1
drawing number	T-1
scale	1"=40'
drafted by	JMH
drawn by	RJZ
date	8/12/05
sheet 1 of 1	

ATTACHMENT B

LMS Test Boring Log

	Boring No.: PZ-1
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/4/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/4/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 5'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					3'	0		0-0.3' dark brown silt, fine-medium sand little fine-medium gravel some silt, moist 0.3-0.9' grey fine-medium sand some silt, moist 0.9-1.8' light brown fine-medium sand little silt, little fine gravel, moist 1.8-3' dark grey fine-course sand little fine gravel, ash, moist	
5-10'					1.6'	15		5-6.2' dark grey fine-course sand some fine-course gravel, little silt trace purifier waste, moist 6.2-6.6' dark grey silty fine-medium sand, trace fine-medium gravel trace coal tar, moist	
10-15'					3.8'	0		10-11.8' grey silty fine-medium sand wet 11.8-13.8' light brown silt fine-medium sand, little clay, wet E.O.B. @ 15' 2" temporary piezometer installed	

f - fine, m - medium, c - coarse

and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: PZ-2
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/4/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/4/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 6.2'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					3.5'	55		0-1' dark grey fine-course sand some fine-medium gravel, ash 1-2' coal tar 2-3.5' dark grey fine-course sand some fine-medium gravel, ash	
5-10'					1.3	23		5-5.3' coal tar 5.3-6.2' dark grey purifier waste, moist 6.2-6.3' brown fine-medium cinders wet	
10-15'					3.5'	8		10-11.2' dark grey purifier waste 11.2-13.5' dark grey silt little organic material brown fine-medium sand organic odor, wet E.O.B. @ 15' 2" temporary piezometer installed	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

Boring No.: PZ-3
Sheet 1 of 1

Project Name: NYCEDC HUNTS POINT SITE D
Project No.: 781027
Client: NYCEDC
Date: Start 6/4/04
Finish 6/4/04
Driller: Aquifer Drilling and Testing, Inc.
Drilling Method: Direct Push Probe
Total Depth: 15'
Boring Location: Site D
Depth To Water: 5'
Coordinates:
Surf. Elevation:
Logged By: E. Cozza
Hole Diameter: 2"
Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					2.6'	10		dark grey and blueish purifier waste	
5-10'					3.1'	0		dark grey and grey purifier waste moist, rods wet	
10-15'					2'	0		10-11.6' brown peat, some silt 11.6-12' grey silt, little fine sand little organic material, organic odor wet E.O.B. @ 15' 2" temporary piezometer installed	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS	Test Boring Log	Boring No.: PZ-4
		Sheet 1 of 1
Project Name: NYCEDC HUNTS POINT SITE D		**Project No.:** 781027
Client: NYCEDC		**Date:** Start 6/4/04
Driller: Aquifer Drilling and Testing, Inc.		Finish 6/4/04
Drilling Method: Direct Push Probe		**Total Depth:** 15'
Boring Location: Site D		**Depth To Water:** 10'
Coordinates:		**Surf. Elevation:**
Logged By: E. Cozza		**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter		

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					2.6'	11		grey purifier waste	
5-10'					1	0		dark grey purifier waste	HCN=6.2
10-15'								no recovery	
								E.O.B. @ 15'	
								2" temporary piezmeter installed	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: PZ-5
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/4/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/4/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 7'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					3'	0		brown fine-medium sand little silt, moist	
5-10'					3.3'	0		5-8.2' same as above 8.2-8.3' dark grey fine-medium sand little silt, wet	
10-15'					3.2'	0		brown fine-medium sand little silt, trace fine gravel, wet	
								E.O.B. @ 15' 2" temporary piezometer installed	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS **Test Boring Log**

Boring No.: PZ-6

Sheet 1 **of** 1

Project Name: NYCEDC HUNTS POINT SITE D

Project No.: 781027

Client: NYCEDC

Date: Start 6/4/04

Driller: Aquifer Drilling and Testing, Inc.

Finish 6/4/04

Drilling Method: Direct Push Probe

Total Depth: 15'

Boring Location: Site D

Depth To Water: 6.3'

Coordinates:

Surf. Elevation:

Logged By: E. Cozza

Hole Diameter: 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					2.7'	0		brown fine-medium sand little silt, moist	
5-10'					3.6	0		same as above wet @ 6.3'	
10-15'					1.2'	0		same as above bottom 0.2' little fine-medium gravel wet E.O.B. @ 15' 2" temporary piezometer installed	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: PZ-7
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/4/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/4/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 5.7'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					3.2'	0		bronwn fine-medium sand little silt, moist	
5-10'					2.4'	0		5-6.6' same as above wet @ 5.7' 6.6-7.4' dark grey peat some silt, wet	
10-15'					1.8'	0		very wet soupy fine-medium sand little silt	
								E.O.B. @ 15' 2" temporary piezometer installed	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

Boring No.: GP-1

Sheet 1 **of** 1

Project Name: NYCEDC HUNTS POINT SITE D

Project No.: 781027

Client: NYCEDC

Date: Start 6/2/04

Driller: Aquifer Drilling and Testing, Inc.

Finish 6/2/04

Drilling Method: Direct Push Probe

Total Depth: 15'

Boring Location: Site D

Depth To Water: 5.8'

Coordinates:

Surf. Elevation:

Logged By: E. Cozza

Hole Diameter: 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained		Classification Of Material	Remarks
									f - fine m - medium c - coarse and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
0-5'					1.9'	0			black fine-course sand some fine-medium gravel, cinders little silt, coal ash bottom 2" is wood	
5-10'					3.3'	0			5-5.8' fine-course sandy tar, wet 5.8-8.3' light brown fine-medium sandy silt, wet	
10-15'					4.2	0			grey silty fine-medium sand little fine-medium gravel, wet	
									E.O.B. @ 15'	

LMS Test Boring Log

	Boring No.: GP-2
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/3/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/3/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 10'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
								f - fine m - medium c - coarse and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
0-5'					2.4'	300		0-0.8' brown fine-course sand some silt, some fine-medium gravel 0.8-2.4' coal tar and sand	VOCs @ 2' SVOCs @ 0-10' Metals @ 0-10' PCBs @ 0-10'
5-10'					2.1'	4		dark grey purifier waste	
10-15'					3.8'	0		brown silty fine-medium sand trace fine-medium gravel, wet	

LMS Test Boring Log

Boring No.: GP-3

Sheet 1 **of** 1

Project Name: NYCEDC HUNTS POINT SITE D

Project No.: 781027

Client: NYCEDC

Date: Start 6/3/04

Driller: Aquifer Drilling and Testing, Inc.

Finish 6/3/04

Drilling Method: Direct Push Probe

Total Depth: 15'

Boring Location: Site D

Depth To Water: 7.5'

Coordinates:

Surf. Elevation:

Logged By: E. Cozza

Hole Diameter: 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					3.2'	0		dark grey fine-course sand some fine-medium gravel slight petroleum odor	
5-10'					3	0		dark grey and grey fine-medium sand some fine-medium gravel little cinders, trace coal	
10-15'					3.8	0		dark grey silt, trace fine-medium sand some organic material organic odor, wet	
								E.O.B. @ 15'	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-4
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/2/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/2/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 10'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained		Classification Of Material	Remarks
									f - fine m - medium c - coarse and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
0-5'					0	0			no recovery	VOCs @ 5' SVOCs @ 0-10' Metals @ 0-10' PCBs @ 0-10'
5-10'					0.9'	0			5-5.5' blueish grey purifier waste 5.5-5.9' grey purifier waste, moist	
10-15'					28"	0			brown silt and fine-medium sand, wet	
									E.O.B. @ 15'	

LMS Test Boring Log

	Boring No.: GP-5
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/2/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/2/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 10'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					1.5'	0		0-1' dark brown fine-course sand little fine to medium gravel little silt, little coal ash, little slag 1-1.5' blueish grey purifier waste very soft past 1'	
5-10'					0.1	0		same as above	
10-15'					2.8	0		brown silty fine-medium sand little fine-medium gravel, wet	
								E.O.B. @ 15'	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-6
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/2/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/2/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 9'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					3'	6.4		black fine-course sand some fine-medium gravel trace coal, little slag, moist	
5-10'					1.6'	11		5-6' same as above, wet 6-6.6' grey fine-medium sandy silt trace fine gravel, wet	
10-15'					3.4	0		10-10.5' grey silty fine-medium sand trace fine gravel, wet 10.5-13.4' brown silty fine-medium sand little fine gravel course gravel fragments in shoe E.O.B. @ 15'	

f - fine, m - medium, c - coarse

and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-7
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/2/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/2/04
Drilling Method: Direct Push Probe	**Total Depth:** 20'
Boring Location: Site D	**Depth To Water:** 10'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					2.4'	0		0-.3' brown fine-medium sand trace course gravel 0.3-2.4' blue/grey purifier waste little foreign white material	
5-10'					2.2'	15		purifier waste	
10-15'					1.5'	6		purifier waste, wet	
15-20'					2.8'	0		fine-medium brown silt and fine-medium sand trace gravel E.O.B. @ 20'	

Classification Of Material

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-8
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/2/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/2/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 8'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					1.1	0		0-0.3' brown silt and fine sand some vegetation debris 0.3-1.1' blue purifier waste	VOCs @ 7.5' SVOCs @ 0-10.5' Metals @ 0-10.5' PCBs @ 0-10.5'
5-10'					3.5	1.5		black purifier waste wet at 8'	
10-15'					2	0		10-10.5' same as above 10.5-12' dark grey silt, some organics 2" peat layer at bottom E.O.B. @ 15'	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-9
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/3/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/3/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 9'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					3.5'	0		dark grey and grey fine-medium sand little fine gravel, trace coal tar	VOCs @ 6' SVOCs @ 0-10' Metals @ 0-10' PCBs @ 6'
5-10'					2.3'	48		same as above strong naphthalene odor	
10-15'					3.5'	5		dark grey silt, some organic material	
								E.O.B. @ 15'	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-10
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/2/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/2/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 10'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					2.7	0		0-1' brown silty fine-medium sand little fine-course gravel, moist 1-1.7' bluish grey purifier waste 1.7-2.7' grey purifier waste	HCN headspace 0.4
5-10'					2'	0		same as above, moist	VOCs @ 6' SVOCs @ 1-15.5' Metals @ 1-15.5' PCBs @ 1-15.5'
10-15'					1.8'	0		same as above, wet bottom 2" grey very fine sandy silt E.O.B. @ 15'	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-11
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/1/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/1/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 9'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
								f - fine m - medium c - coarse and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
0-5'					3'	NA		0-0.8' brown fine-medium silty sand 0.8-1.5' black purifier waste 1.5-3' light grey purifier waste	PID malfunction VOCs @ 5' SVOCs @ 0-5' Metals @ 0-5' PCBs @ 0-5'
5-10'					2.2'	NA		purifier waste wet at 9'	
10-15'					0.3'	NA		top 1" purifier waste bottom 2" black silty clay E.O. B. @ 15'	

LMS Test Boring Log

Boring No.: GP-12
Sheet 1 **of** 1

Project Name: NYCEDC HUNTS POINT SITE D
Project No.: 781027
Client: NYCEDC
Date: Start 6/2/04
Driller: Aquifer Drilling and Testing, Inc. Finish 6/2/04
Drilling Method: Direct Push Probe
Total Depth: 20'
Boring Location: Site D
Depth To Water: 10'
Coordinates:
Surf. Elevation:
Logged By: J. Thornburg
Hole Diameter: 2"
Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					2.3'	0		0-1.5' blue/grey purifier waste 1.5-2.3' grey purifier waste	Instrument readings are from PID
5-10'					2.7	0		5-7.1' grey sandy silt, organic odor 7.1-7.7' black purifier waste
10-15'					1.5'	0		black purifier waste, wet
15-20'					2.3'	3.5		grey very fine sandy silt organic odor, wet
								E.O.B. @ 20'

f - fine
m - medium
c - coarse
and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-13
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/2/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/2/04
Drilling Method: Direct Push Probe	**Total Depth:** 20'
Boring Location: Site D	**Depth To Water:** 10'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
								f - fine; m - medium; c - coarse; and - 35-50%; some - 20-35%; little - 10-20%; trace - 0-10%	
0-5'					1.5'	0		0-0.2' dark brown silt and clay little sand, trace mica 0.2-1.5' purifier waste	
5-10'					2'	12		5-6' grey purifier waste 6-8' black purifier waste	
10-15'					1.8'	200		purifier waste	
15-20'					2.1'	8.9		dark brown silt with some organics and roots, sulfur odor	
								E.O.B. @ 20'	

LMS Test Boring Log

	Boring No.: GP-14
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/2/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/2/04
Drilling Method: Direct Push Probe	**Total Depth:** 20'
Boring Location: Site D	**Depth To Water:** 10'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					2.2'	0.6		0-0.1' dark brown fine-medium sand and silt 0.1-0.6' brick 0.6-1.5' fine-course sand, some silt little brick and mica 1.5-2.2' purifier waste	
5-10'					3.9'	11		purifier waste, moist	
10-15'					2.3'	0.6		purifier waste, wet	
15-20'					4.3'	0		dark brown silt and clay, some peat E.O.B. @ 20'	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-15
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/3/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/3/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 5'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					1.5'	0		Grey and blueish grey purifier waste	VOCs @ 1.5'
5-10'					2.2'	1.7		5-5.6' grey purifier waste, wet 5.6-7.2' dark grey purifier waste moist	SVOCs @ 0-5' Metals @ 0-5' PCBs @ 0-5'
10-15'					2.8'	0		10-10.6' dark grey purifier waste, wet 10.6-12.8' dark grey silt some organic material, wet E.O.B. @ 15'	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-16
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/3/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/3/04
Drilling Method: Direct Push Probe	**Total Depth:** 10'
Boring Location: Site D	**Depth To Water:**7.6'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained		Classification Of Material (f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	Remarks
0-5'					4.5'	1.5			0-0.9' dark grey fine-course sand little silt, trace coal 0.9-2.4' coal tar, some fine gravel fine-course sand some gravel little silt, little purifier waste, moist 2.4-4.5' grey and dark grey fine-course sand, some gravel, little silt little purifier waste, moist	
5-10'					3.2'	35			dark grey fine-course sand some fine-medium gravel little silt, trace brick wet @ 7.6' E.O.B. @ 10'	

LMS Test Boring Log

Boring No.: GP-17

Sheet 1 **of** 1

Project Name: NYCEDC HUNTS POINT SITE D | **Project No.:** 781027

Client: NYCEDC | **Date:** Start 6/3/04

Driller: Aquifer Drilling and Testing, Inc. | Finish 6/3/04

Drilling Method: Direct Push Probe | **Total Depth:** 15'

Boring Location: Site D | **Depth To Water:** 10'

Coordinates: | **Surf. Elevation:**

Logged By: E. Cozza | **Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					1'	0.7		purifier waste and ash	
5-10'					1.3'	9.2		purifier waste	
10-15'					1'			10-10.8' purifier waste 10.8-11' dark brown silt and clay wet	
								E.O.B. @ 15'	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-18
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/7/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/7/04
Drilling Method: Direct Push Probe	**Total Depth:** 16'
Boring Location: Site D	**Depth To Water:** 6'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					3.2'	0		0-2' blueish grey purifier waste 2-3.2' brownish grey purifier waste	
4-8'					0.4'	0		dark brown purifier waste wet	
8-12'					2'	51		same as above	
12-16'					2.4'	22		12-14' same as above 14-14.4' dark silty clay	
								E.O.B. @ 16'	

f - fine, m - medium, c - coarse

and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-19
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/7/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/7/04
Drilling Method: Direct Push Probe	**Total Depth:** 16'
Boring Location: Site D	**Depth To Water:** 8'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					2.1'	0		blue purifier waste	VOCs @ 3.5'
									SVOCs @ 0-5'
4-8'					3.1'	12		4-5.9' blue purifier waste	Metals @ 0-5'
								5.9-7.1' brown peat, some silt	PCBs @ 0-5'
8-12'					3'	141		dark brown purifier waste	
								wet	
12-16'					3.5'	5.5		12-13.7' brown purifier waste	
								13.7-15.5' grey sitly clay	
								E.O.B. @ 16'	

f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS **Test Boring Log**

	Boring No.: GP-20
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/1/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/1/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 7'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
								f - fine; m - medium; c - coarse; and - 35-50%; some - 20-35%; little - 10-20%; trace - 0-10%	
0-5'					3'	NA		0-1' brown silty sand 1-3' purifier waste	PID malfunction
5-10'					2.7'	NA		purifier waste	
10-15'					1'	NA		purifier waste bottom 1" grey clay	
								E.O.B. @ 15'	

LMS Test Boring Log

	Boring No.: GP-21
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/1/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/1/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 6.5'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
								f - fine; m - medium; c - coarse; and - 35-50%; some - 20-35%; little - 10-20%; trace - 0-10%	
0-5'					3'	0		purifier waste	VOCs @ 6'
5-10'					3.7'	0		purifier waste	SVOCs @ 0-11.8'
10-15'					3.5'	0		10-10.8' purifier waste	Metals @ 0-11.8'
								10.8-13.3 grey silt clay	PCBs @ 0-11.8'

LMS Test Boring Log

	Boring No.: GP-22
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/3/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/3/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 5'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
								f - fine; m - medium; c - coarse; and - 35-50%; some - 20-35%; little - 10-20%; trace - 0-10%	
0-5'					1.3'	0		0-0.5' dark grey purifier waste	
								trace coal tar, little coke	VOCs @ 5.5'
								0.5-1.3' grey purifier waste	SVOCs @ 0-10.5'
									Metals @ 0-10.5'
5-10'					1.6'	0		dark grey purifier waste, wet	PCBs @ 0-10.5'
10-15'					1.9'	41		10-10.6' dark grey purifier waste, wet	
								10.6-11.9' dark grey silt, organic odor	
								E.O.B. @ 15'	

LMS Test Boring Log

	Boring No.: GP-23
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/3/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/3/04
Drilling Method: Direct Push Probe	**Total Depth:** 10'
Boring Location: Site D	**Depth To Water:** 5'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material (f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	Remarks
0-5'					2.1'	2		0-1.5' brown purifier waste 1.5-2.1' blue grey purifier waste	HCN=4.4
5-10'					1.1'	16		purifier waste	HCN=13
								E.O.B @ 10'	VOCs @ 1.5' SVOCs @ 0-5' Metals @ 0-5' PCBs @ 0-5'

LMS Test Boring Log

Boring No.: GP-24
Sheet 1 **of** 1

Project Name: NYCEDC HUNTS POINT SITE D
Project No.: 781027
Client: NYCEDC
Date: Start 6/3/04
Driller: Aquifer Drilling and Testing, Inc. Finish 6/3/04
Drilling Method: Direct Push Probe
Total Depth: 15'
Boring Location: Site D
Depth To Water: 7'
Coordinates:
Surf. Elevation:
Logged By: E. Cozza
Hole Diameter: 2"
Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					1.7'	0		0-1.6' brown fine-course sand little fine-medium gravel, cinders some silt, ash 1.6-1.7' black purifier waste	
5-10'					2'	0		0-1' black purifier waste, wet 1-2' black fine-mdeium sand and silt	
10-15'					1.3'	0		grey silt, some organics organic odor	
								E.O.B. @ 15'	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS **Test Boring Log**

Boring No.: GP-26

Sheet 1 **of** 1

Project Name: NYCEDC HUNTS POINT SITE D

Project No.: 781027

Client: NYCEDC

Date: Start 6/7/04

Finish 6/7/04

Driller: Aquifer Drilling and Testing, Inc.

Drilling Method: Direct Push Probe

Total Depth: 9.5'

Boring Location: Site D

Depth To Water: 7'

Coordinates:

Surf. Elevation:

Logged By: E. Cozza

Hole Diameter: 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					3.2'	0		dark brown purifier waste moist	
4-8'					3'	44		4-5.2' brown fine-medium sand some fine gravel, little silt 5.2-6.6' purifier waste 6.6-7' fine-course sand some fine gravel, little silt wet	
8-9.5'					1'	27		8-8.2' purifier waste 8.2-9.5' silty fine-medium sand some gravel, little mica refusal @ 9.5' E.O.B. @ 9.5'	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-27
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/1/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/1/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 6.2'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained		Classification Of Material (f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	Remarks
0-5'					1.1	0			0-0.3' blue/grey silt, some sand 0.3-1.1' crushed concrete, brown silty sand some fine-medium gravel	
5-10'					1.8'	0			5-5.4' brown fine-medium sand little fine gravel 5.4-5.7' crushed rock 5.7-6.2' grey fine-medium sand fine-medium gravel 6.2-6.8' dark grey fine-course sand little silt, little coal, little ash, wet	
10-15'					0.4'	0			same as above	
									E.O.B. @15'	

LMS Test Boring Log

	Boring No.: GP-28
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/3/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/3/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 5'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					1.5	0		0-0.6' brown fine-course sand fine-medium sand and fine-medium gravel, ash moist. 0.6-1.5' grey silty fine-medium sand moist	
5-10'					2.4'	0		grey fine-medium sand some silt little fine-medium gravel, wet	
10-15'					1.5'	10		dark grey fine-medium sand little medium gravel, wet	
								E.O.B. @ 15'	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-29
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/3/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/3/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 5'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					2.1	0		0-1.7' dark grey fine-medium sand some fine-medium gravel, little silt moist 1.7-2.1' grey silt, little fine sand trace organic material	
5-10'					2.3'	0		dark grey fine-medium sand some silt, organic odor, trace wood wet	
10-15'					1.2'	0		grey silt, some fine sand wet E.O.B. @ 15'	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-30
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/1/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/1/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 6'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					2'	0		brown fine-medium sand trace silt, trace gravel	
5-10'					2.4'	0		5-6.6' same as above 6.6-6.9' light brown coarse sand 6.9-7.4' dark grey silt with trace organic material	
10-15'					0.8'	0		10-10.4' fine sandy silt dark grey trace clay, organic odor 10.4-10.8' dark grey silt trace fine sand, trace fine clay organic odor E.O.B. @ 15'	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-31
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/1/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/1/04
Drilling Method: Direct Push Probe	**Total Depth:** 20'
Boring Location: Site D	**Depth To Water:** 5.8
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
								f - fine m - medium c - coarse and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
0-5'					2.3'	0		light brown fine-medium sand trace silt	
5-10'					2.8'	189		5-6.6' brown fine-medium sand 6.6-7' fine-medium sand, trace gravel 7-7.8' black fine-medium sand trace gravel, organic odor	
10-15'					2.3'	26		10-11.2 black fine-medium sand little course grave, little silt, wet 11.2-12.3' brown fine-medium sand fine-course trace gravel little silt, trace brick	
15-20'					2.5'	0		black sand with tan course gravel wet, likely wash from hole caving in	
								E.O.B. @ 20'	

LMS **Test Boring Log**

	Boring No.: GP-32
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/1/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/1/04
Drilling Method: Direct Push Probe	**Total Depth:** 20'
Boring Location: Site D	**Depth To Water:** 7.3'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
								f - fine m - medium c - coarse and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
0-5'					2.5'	0		brown fine-medium sand trace fine gravel, little silt	
5-10'					3.5'	0		same as above wet at 7.3'	
10-15'					1.5'	59		10-11.2' same as above 11.2-11.5' black fine-medium sand trace fine gravel, organic odor, wet	
15-20'					4'	81		15-17' brown fine-medium sand 17-19' black fine-medium sand likely wash from hole caving in E.O.B. @ 20'	

LMS Test Boring Log

	Boring No.: GP-33
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/1/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/1/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 6.5'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					3.4'	0		dark brown fine-medium sand trace silt	
5-10'					2.7'	0		same as above wet at 6.5'	
10-15'					3'	0		same as above E.O.B. @ 15'	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-34
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/1/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/1/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:** 5.3'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					26"	0		brown fine-medium sand trace gravel, moist	
5-10'					3'	0		5-7.6' same as above 7.6-8' black fine-medium sand with little silt, little fine gravel, organic odor wet @ 5.3'	
10-15'					1.3'	0		light grey fine-medium sandy silt trace clay, trace roots, organic matter siltier at bottom E.O.B @ 15'	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-35
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/3/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/3/04
Drilling Method: Direct Push Probe	**Total Depth:** 15'
Boring Location: Site D	**Depth To Water:**
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					3.5'	80		0-1' brown fine-course sand some fine-medium gravel, cinders little silt, moist 1-2.3' coal tar some fine-medium gravel 2.3-3.5' brown and grey fine-medium gravel, cinders, ash moist	VOCs @ 2' SVOCs @ 0-5' Metals @ 0-5' PCBs @ 0-5'
5-10'					3.0'	2		grey silty fine-medium sand trace fine gravel, wet	
10-15'					1'	0		same as above E.O.B. @ 15'	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-36
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/7/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/7/04
Drilling Method: Direct Push Probe	**Total Depth:** 12'
Boring Location: Site D	**Depth To Water:** 8'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					3.1'	0.4		0-0.8' dark grey fine-medium sand some silt, some fine gravel 0.8-1.7' light brown pulverized concrete 1.7-2.5' dark grey fine-course sand fine-medium gravel, little silt 2.5-3.1' grey silt with some organics	
4-8'					3.7'	1.2		4-4.6' silty fine sand some fibrous wood chips 4.6-7.5' fine-medium sand little silt, little fine-medium gravel 7.5-7.7' grey fine-medium sandy silt little fine-medium gravel	
8-12'					2'	0		8-9.5' dark grey fine-medium sand some gravel 9.5-10' grey silt with some organics E.O.B. @ 12'	

f - fine, m - medium, c - coarse

and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

Boring No.: GP-37
Sheet 1 of 1

Project Name: NYCEDC HUNTS POINT SITE D
Project No.: 781027
Client: NYCEDC
Date: Start 6/7/04
Finish 6/7/04
Driller: Aquifer Drilling and Testing, Inc.
Drilling Method: Direct Push Probe
Total Depth: 12'
Boring Location: Site D
Depth To Water: 7'
Coordinates:
Surf. Elevation:
Logged By: E. Cozza
Hole Diameter: 2"
Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					2.7'	0		0-0.4' dark grey fine-course sand some fine-medium gravel little silt, coal ash 0.4-1.3' yellowish brown fine sand silt, little cinder block 1.3-1.9' dark grey fine-course sand and fine-medium gravel trace silt, trace coal ash 1.9-2.7' grey fine sandy silt trace fine gravel	
4-8'					3.6'	0		4-6.6' grey fine sandy silt trace fine gravel 6.6-7.6' fine-course sand and fine-course gravel wet @ 7'	
8-12'					2.8'	57		8-9.7' grey silt, little fine-medium sand trace organics, trace fine gravel 9.7-10.8' fine-medium sand little silt, trace fine gravel trace cement E.O.B. @ 12'	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-38
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/7/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/7/04
Drilling Method: Direct Push Probe	**Total Depth:** 16'
Boring Location: Site D	**Depth To Water:** 10'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					2.4'	0		0-0.2' grey wood chips 0.2-2' blue purifier waste 2-2.4' brown fine-medium silty sand with organics	
4-8'					2.8'	0		grey fine-medium sand some silt, little fine gravel	
8-12'					1'	0		same as above	
12-16'					1'	0		grey silty fine-medium sand trace fine-medium gravel trace brick	
								E.O.B. @ 16'	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-39
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/7/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/7/04
Drilling Method: Direct Push Probe	**Total Depth:** 16'
Boring Location: Site D	**Depth To Water:** 8'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					3'	0		0-2' grey silt some fine-medium sand, trace fine gravel, trace mica 2-2.6' yellowish brown silt some fine-medium sand, trace fine gravel, trace mica 2.6-3' purifier waste	
4-8'					0.8'	5		purifier waste	
8-12'					0.4'	0		purifier waste	
12-16'								no recovery E.O.B. @ 16'	

f - fine, m - medium, c - coarse

and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-40
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/7/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/7/04
Drilling Method: Direct Push Probe	**Total Depth:** 16'
Boring Location: Site D	**Depth To Water:** 7'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					2.1'	0		0-0.6' grey fine-medium sand 0.6-1' silty fine-medium sand trace fine gravel 1-2.1' blueish grey purifier waste	
4-8'					2.5'	28		purifier waste wet ~7'	
8-12'					0.5'	1.3		purifier waste	
12-16'					1.4	17		12-12.4' purifier waste 12.4-13.4' grey silty fine sand with trace gravel, organic odor E.O.B. @ 16'	

f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-41
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/8/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/8/04
Drilling Method: Direct Push Probe	**Total Depth:** 12'
Boring Location: Site D	**Depth To Water:** 8'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					3.4'	0		0-1.2' brown fine-medium silty sand with trace gravel 1.2-2' brown fine-medium sand with little silt, trace organics trace gravel	VOCs @ 9' SVOCs @ 8-11' Metals @ 8-11' PCBs @ 8-11'
4-8'					0.2'	0		dark grey fine-medium sand with silt, petroleum odor	
8-12'					3.9'	0		8-8.8' dark brown silty fine-medium sand with trace coal tar strong petroleum odor 8.8-10' grey silty sand wet, trace mica, trace gravel 10-11.9' brown fine-medium silty sand E.O.B. @ 12'	

f - fine, m - medium, c - coarse

and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-42
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/8/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/8/04
Drilling Method: Direct Push Probe	**Total Depth:** 12'
Boring Location: Site D	**Depth To Water:** 7'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					3'	0		0-0.8' brown fine-medium silty sand with trace gravel 0.8-3.0' dark brown fine-medium silty sand with trace coal tar, some gravel	VOCs @ 7' SVOCs @ 7-11' Metals @ 7-11' PCBs @ 7-11'
4-8'					2.4'	0		4-4.8' grey/brown silty fine-medium sand with some mica, trace gravel 4.8-5.9' dark grey silty sand with some coal tar, some gravel 5.9-6.4' coal tar wet @ 7'	
8-12'					3.8'	0		8-10.5' black fine-course silty sand with coal tar 10.5-11.8' brown fine-medium silty sand, wet E.O.B. @ 12'	

f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-43
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/8/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/8/04
Drilling Method: Direct Push Probe	**Total Depth:** 12'
Boring Location: Site D	**Depth To Water:** 7'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					3'	0		0-1' weathered coal tar 1-2' blue purifier waste	
4-8'					2.8'	0		blueish brown purifier waste	
8-12'					2'	0		8-9.6' purifier waste 9.6-10' brown silty fine-medium sand trace gravel	
								E.O.B. @ 12'	

f - fine, m - medium, c - coarse

and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-44
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/8/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/8/04
Drilling Method: Direct Push Probe	**Total Depth:** 12'
Boring Location: Site D	**Depth To Water:** 8'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					3'	196		0-2' black fine-medium sand with coal tar 2-3' dark brown purifier waste	
4-8'					3.2'	0		purifier waste	
8-12'					2.5'	0		8-10.1' purifier waste 10.1-10.5' brown organic silt with roots wet	
								E.O.B. @ 12'	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-45
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/8/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/8/04
Drilling Method: Direct Push Probe	**Total Depth:** 16'
Boring Location: Site D	**Depth To Water:** 7'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					2.7'	0		brown silty fine-medium sand with some weathered coal tar some gravel	
4-8'					2'	0		blue purifier waste wet @ 7'	
8-12'					2.5'	0		purifier waste	
12-16'					3.6'	0		12-14' purifier waste 14-15.6' grey silty fine-medium sand with clay, roots and organics	
								E.O.B. @ 16'	

f - fine, m - medium, c - coarse

and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

Boring No.: GP-46

Sheet 1 **of** 1

Project Name: NYCEDC HUNTS POINT SITE D

Project No.: 781027

Client: NYCEDC

Date: Start 6/8/04

Driller: Aquifer Drilling and Testing, Inc.

Finish 6/8/04

Drilling Method: Direct Push Probe

Total Depth: 12'

Boring Location: Site D

Depth To Water: 8'

Coordinates:

Surf. Elevation:

Logged By: E. Cozza

Hole Diameter: 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					2'	0		0-1' brown fine-medium sand with trace weathered coal tar 1-2' brown purifier waste	
4-8'					2.5'	0		brown purifier waste	
8-12'					3.5	0		8-9.5' black purifier waste 9.5-11.5' dark brown silty clay with organics, wet E.O.B. @ 12'	

f - fine, m - medium, c - coarse

and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-47
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/8/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/8/04
Drilling Method: Direct Push Probe	**Total Depth:** 12'
Boring Location: Site D	**Depth To Water:** 8'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"
Monitoring Instrument(s): PID, CGI, HCN meter	

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-4'					1.5'	0		0-0.6' weathered coal tar 0.6-1.5' purifier waste	
4-8'					2'	0		purifier waste	
8-12'					3.8'	0		8-9' purifier waste 9-11.8' brown silty clay E.O.B. @ 12'	

f - fine, m - medium, c - coarse
and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LMS Test Boring Log

	Boring No.: GP-25
	Sheet 1 **of** 1
Project Name: NYCEDC HUNTS POINT SITE D	**Project No.:** 781027
Client: NYCEDC	**Date:** Start 6/8/04
Driller: Aquifer Drilling and Testing, Inc.	Finish 6/8/04
Drilling Method: Direct Push Probe	**Depth To Water:** 8'
Boring Location: Site D	**Total Depth:** 12'
Coordinates:	**Surf. Elevation:**
Logged By: E. Cozza	**Hole Diameter:** 2"

Monitoring Instrument(s): PID, CGI, HCN meter

Depth (ft)	Blows On Sampler 0"-6"	6"-12"	12"-18"	18"-24"	Recovery	Instrument Reading	Sample Retained	Classification Of Material	Remarks
0-5'					3.0'	0		dark grey purifier waste	VOCs @ 2.5' SVOCs @ 0-5' Metals @ 0-5' PCBs @ 0-5'
5-10'					2.9'	0		dark grey purifier waste, wet	
10-15'					0.8	0		grey silt , trace organic material organic odor wet	
								E O B @ 15'	

f - fine, m - medium, c - coarse

and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%