

**Final Remedial Investigation
Report
Rockaway Park Former
Manufactured Gas Plant Site
Rockaway Park, New York
Volume 2 of 2
Appendices A through F
AOC Index No. D2-0001-98-11**

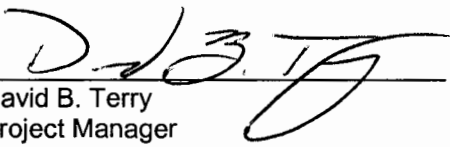
PREPARED BY

GEI Consultants, Inc.
188 Norwich Avenue - P.O. Box 297
Colchester, CT 06415
(860) 537-0751

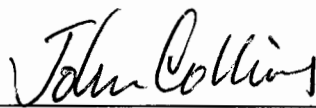
Vanasse Hangen Brustlin, Inc.
54 Tuttle Place
Middletown, CT 06457
(860) 632-1500

SUBMITTED TO

KeySpan Corporation
One MetroTech Center
Brooklyn, NY 11201-3850



David B. Terry
Project Manager
GEI Consultants, Inc.



John Collins, Ph.D.
Chief Scientist, Environmental Risk Management
Vanasse Hangen Brustlin, Inc.

January 30, 2004
982482-9-1817

Appendix A

Supplemental Remedial Investigation Work Plans and NYSDEC Approval Letters



KeySpan Corporation
Environmental Asset Management
175 East Old County Road
Hicksville, NY 11801

July 10, 2002

Douglas MacNeal, Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Western Remedial Action, 11th Floor
625 Broadway
Albany, New York 12233-7010

Re: Rockaway Park
Former Manufactured Gas Plant (MGP) Site
Supplemental Remedial Investigation
Site No. 2-41-029

Dear Mr. MacNeal:

This letter presents the revised work plan for the supplemental remedial investigation at the Rockaway Park former MGP site. The scope of work described in this work plan is based on:

- The New York State Department of Environmental Conservation (NYSDEC) comment letter dated April 16, 2002, regarding the draft Rockaway Park Remedial Investigation (RI) Report (herein referred to as the "draft RI report");
- The NYSDEC comment letter dated June 26, 2002 and the KeySpan Energy (Keyspan) comment response letter dated July 3, 2002, regarding the Rockaway Park Supplemental Remedial Investigation (SRI) Work Plan; and
- KSE's assessment of existing data concerning the nature and extent of BTEX/PAHs and NAPL at the Rockaway Park site.

Supplemental Remedial Investigation Objectives

The objectives of the supplemental remedial investigation include:

- Further delineate the presence of benzene, toluene, ethylbenzene and xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAHs) in subsurface soil and groundwater in suspected source areas;
- Define the horizontal and vertical extent of nonaqueous phase liquid (NAPL) within suspected source areas;

Douglas MacNeal
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
July 10, 2002

Page 2

- Provide additional data as to the potential mobility and recoverability of identified NAPL;
- Define the nature and extent of off-site BTEX and PAH migration to the east and west of the site;
- Determine the potential impacts from the site to the shallow sediments in Jamaica Bay adjacent to the site; and
- Obtain additional data needed to evaluate the potential applicability/effectiveness of various remedial technologies under a Remedial Action Plan (RAP).

Areas Requiring Additional Investigation

Based on the review of the NYSDEC's technical comments received on April 16, 2002, and the recommendations presented in the draft RI report, the areas requiring additional investigation are summarized below:

- Define the horizontal extent of NAPL-impacted subsurface soil in the areas within and to the north of the former Gas Works;
- Define the vertical extent of NAPL-impacted subsurface soil in the vicinity of the former electric substation;
- Define the horizontal and vertical extent of BTEX and PAHs as well as NAPL in on-site groundwater;
- Define the extent of off-site BTEX and PAH migration to the east of the site in the vicinity of RPSB-61 and RPMW-17S (NYSDEC Comment 48); and
- Define the potential off-site BTEX migration to the west of the site from RPMW-08S.

Investigation Approach

The following is a summary of the major elements of the supplemental remedial investigation:

Soil Borings

At each soil boring location, soil samples will be collected continuously utilizing the roto sonic drilling technique from ground surface to the planned soil boring termination depth. Two shallow soil borings (~12 feet below grade) will be completed using direct push technology. If NAPL is encountered at the soil boring locations, the borings will be continued until at least 10 feet of visibly "clean" soil has been sampled.

Surface Soil Sampling

At each surface soil sample location, soil samples will be collected from 0 to 2-inches below grade in the area of the former substation.

Groundwater Probes

Groundwater probes, using direct push sampling technologies, will be completed off-site to further delineate off-site migration of BTEX and PAHs. The selection of groundwater sample intervals at each probe location will be determined in the field and will be based on the current understanding of BTEX/PAHs and NAPL distribution at the probe location, as well as field observations of subsurface soil recovered from soil probes completed in the vicinity of the groundwater probe.

Groundwater Monitoring Well Installation

A number of permanent groundwater monitoring wells are to be installed as part of the supplemental remedial investigation. All monitoring wells will be installed by the roto sonic drilling method. Actual well locations and screen settings will be determined in the field. The NYSDEC will be consulted prior to finalizing the location and depth of the proposed monitoring wells. As part of the completion of each groundwater monitoring well, soil samples will be described in the field continuously. Well construction and development will be in accordance with the approved work plan.

The installation and sampling of contingent monitoring wells identified on Tables 1 and 2 will be determined, in coordination with the NYSDEC, based upon a review of new and existing groundwater data.

After installation and development, all newly installed and existing wells will be sampled for BTEX, PAHs and total cyanide. If a measurable layer of NAPL is identified within a well, attempts will be made to collect a sample for laboratory analysis.

Synoptic Water Levels and NAPL Measurements

After installation and development of all monitoring wells to be completed as part of the supplemental remedial investigation, two rounds of synoptic water level measurements (high and low tides) will be collected from all newly installed and existing monitoring wells. During the collection of water levels, all on-site wells and any off-site wells suspected of containing NAPL will be measured for LNAPL using an oil/water interface probe and for DNAPL using a dedicated weighted bailer.

Hydraulic Conductivity

It is recommended to conduct slug tests at monitoring well clusters RPMW-07, RPMW-09 and RPMW-10 to estimate the hydraulic conductivity at the site. This data will be necessary for evaluating remedial alternatives that involve hydraulic control, containment, and/or dewatering.

Jamaica Bay Sediment Sampling

A limited shallow sediment sampling program utilizing a PONAR sampler deployed from a boat will be conducted to characterize potential impacts from the site. Shallow sediment samples will be collected in a transect at five (5) predetermined locations. In addition, one sediment sample will be collected east of the site and one will be collected west of the site. The sample points along the transect will be spaced approximately 50 feet apart with the center sample point being oriented opposite the "center" of the site, off-shore from the location of the former concrete tunnel and the location of the RPMW-02 monitoring well cluster. Survey crews will survey a number of transects in Jamaica Bay opposite the location of the former MGP site. The findings from this survey will provide detailed information on the depth and configuration of the channel bottom opposite the site. This information will be used to determine the distance from the shoreline the sampling transect shall be placed. The results of the channel survey along with a proposed sediment sampling scope of work detailing the sample collection methods and the proposed distance offshore for the PONAR sampling transect will be provided for NYSDEC review and approval prior to collection of the sediment samples.

Each sediment sample collected will be analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), semivolatile organic compounds (SVOCs), and total cyanide using laboratory methods specified in the June 6, 2002 supplemental RI work plan

Chemical Analysis of Samples

Based on investigations completed to date, chemical analysis of selected subsurface and groundwater samples will be limited to BTEX, PAHs, and total cyanide given they have been

determined to be the chemical constituents of concern. In addition, the extract of subsurface soil samples utilizing the Synthetic Precipitation Leaching Procedure (SPLP) will be analyzed for BTEX and PAH constituents. The SPLP analyses are intended to provide a relative evaluation of the potential leachability of various materials at the site. The results of the analyses will be used during preparation of the feasibility study (FS) to evaluate the potential applicability of monitored natural attenuation. If measurable NAPL is identified in a monitoring well, a sample will be collected and submitted for laboratory analysis to determine hydrocarbon composition, as well as basic physical properties, such as density and viscosity, given this data would be useful in the selection of remedial technologies.

Baseline natural attenuation parameters (i.e., pH, temperature, dissolved oxygen, conductivity, redox potential, alkalinity, total and dissolved manganese, dissolved ferrous iron and total iron, sulfate, and nitrate) will be measured for groundwater collected from the following monitoring wells: PZ-8; RPMW-09I, D, and D2; RPMW-12D and D2; RPMW-07S, I, and D; RPMW-02S, I, and D; MW-A; RPMW-06I; RPMW-10S and I; PZ-3; and RPMW-15I. In addition, it is also recommended to analyze groundwater collected from monitoring wells PZ-8 and RPMW-09I, D, and D2 for major inorganic ions (i.e., phosphate, chloride, bromide, iodide, sodium, potassium, calcium, magnesium, and dissolved iron and speciation for ferric and ferrous ions) to support treatability analyses.

Supplemental Remedial Investigation Scope of Work

In order to meet the objectives stated above, the proposed scope of work for the supplemental remedial investigation will include the collection of soil and groundwater samples from soil borings, groundwater probes and groundwater monitoring wells. Unless specified otherwise, all field investigation activities to be completed as part of the supplemental remedial investigation will be conducted in accordance with the NYSDEC-approved Generic Work Plan, Volume II, for the Investigation of the Rockaway Park former MGP Site, dated November 1999 (herein referred to as the "approved work plan").

The supplemental remedial investigation scope of work has been organized into the following investigation areas:

- On-Site Investigation; and
- Off-Site Investigation;

The following is a description of the specific scope of work.

On-Site Investigation

The scope of work for the Rockaway Park Site will include soil borings and groundwater monitoring well installation and sampling. Groundwater monitoring wells will be installed in source areas where NAPL is encountered during the completion of soil borings. Given that the primary objective of the additional on-site wells is to identify zones of NAPL, final well locations and screen settings will be determined in the field and will be based on:

- The current understanding of BTEX/PAHs and NAPL distribution; and
- Observations of subsurface soil recovered from completed soil borings.

Table 1 summarizes the number of proposed sample points, the objective of each sample point, proposed depths of soil borings and monitoring wells as well as the number of samples to be selected for laboratory analysis at each location. In addition, **Table 1** (see **Attachment A**), summarizes the planned chemical analysis of each sample and the laboratory data turnaround time. The proposed sample locations for the Rockaway Park Site are shown on **Plate 1** (see **Attachment B**). Note that all proposed sample locations shown on **Plate 1** are approximate and that the actual location of each sample point will be determined in the field based on field conditions, equipment access and utility clearance. As discussed, the location of each proposed monitoring well will be selected based on the review of existing soil and groundwater quality data.

Off-Site Investigation

A soil boring and groundwater probes are to be completed to the east of the Rockaway Park site in order to delineate the horizontal and vertical extent of BTEX and PAHs identified at soil boring RPSB-61, groundwater probe RPGP-17 and monitoring well RPMW-17S completed as part of the initial site characterization. In addition, a groundwater probe is to be advanced to the west of the Rockaway Park site in order to delineate the horizontal and vertical extent of BTEX identified at monitoring well RPMW-08S. **Table 2** (see **Attachment A**) summarizes the depth of each proposed soil boring and groundwater probe, the number of samples to be selected for laboratory analysis, the constituent to be analyzed for and laboratory analytical turnaround time, as well as the objective of each sample point. The proposed location of each sample point is shown on **Plate 1**. It should be noted that the proposed groundwater monitoring well RPMW-02D2 is contingent upon the findings of the on-site supplemental investigation.

Douglas MacNeal
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
July 10, 2002

Page 7

Quality Assurance/Quality Control Plan

QA/QC samples will be collected as part of the supplemental remedial investigation as summarized in **Table 3**. One set of QA/QC samples, consisting of a matrix spike, matrix spike duplicate and field blank will be collected and analyzed for every 20 environmental samples collected in the field.

All sample analysis and data validation will be conducted in accordance with the New York State Department of Environmental Conservation June 2000 Analytical Services Protocol (ASP). All other information not provided in this scope of work, such as detailed sampling procedures and protocols, is included in the approved work plan.

Health and Safety Plan

All field work will be conducted in manner consistent with the provisions of the site-specific health and safety plan provided with this revised work plan.

Field Program Schedule

It is anticipated that the Supplemental Remedial Investigation field program will commence in July 2002. Upon approval of the supplemental investigation scope of work included as part of this work plan, a detailed field program schedule will be provided to KSE and the NYSDEC.

Supplemental Investigation Summary Report

A report will be prepared documenting the findings of the supplemental investigation. The report will include the following:

- A summary of completed field work and boring logs;
- Updated sample location maps;
- Updated geologic cross sections and groundwater contour maps to reflect the additionally acquired data;
- Boring logs and well completion logs;
- Updated graphics depicting source areas and the extent of NAPL;

Douglas MacNeal

Project Manager

New York State Department of Environmental Conservation

Division of Environmental Remediation

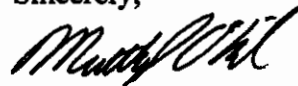
July 10, 2002

Page 8

- Analytical data summary tables including comparison to appropriate standards, criteria and guidance values (SCGs);
- Data validation findings;
- Findings and recommendations.

If you have any questions, feel free to contact me at (516) 545-2555.

Sincerely,



For Thomas J. Campbell
Project Manager

Attachments

cc: T. Leissing (KSE)
S. Selmer (NYSDOH)
S. Sellinger (NYSDEC)
B. Pagdanganan (KSE)
D. Terry (GEI)
K. Frantzen (VHB)

ATTACHMENT A

**SUPPLEMENTAL INVESTIGATION
FIELD PROGRAM SUMMARY TABLES (TABLES 1 AND 2)
AND
QA/QC SAMPLE SUMMARY TABLE (TABLE 3)**

TABLE 1
Rockaway Park Former MGP Site
Supplemental Remedial Investigation
SUMMARY OF SUPPLEMENTAL REMEDIAL INVESTIGATION AT THE ROCKAWAY PARK SITE - ON SITE

Investigation Method/Technology	Sample Point ID	Estimated Maximum Depth (ft)	No. of Samples Selected for Analysis	Analysis					Laboratory Data Turnaround	Sample Point Objectives/Comments
				BTEX ¹	PAHs ²	Total CN ³	BTEX and PAH by SPLP ⁴	Field Parameters ⁵		
Former Gas Works Area (Including areas north of Former Gas Works)										
Rotasonic Soil Borings	RPSB-117	TBD	3	X	X	X	X	—	2 weeks	Contingent upon the results of RPSB-118.
	RPSB-118	60	3	X	X	X	X	—	1 week	Delineate the vertical and horizontal extent of BTEX/PAHs and NAPL in subsurface soil north of the Former Gas Works.
	RPSB-119	TBD	3	X	X	X	X	—	2 weeks	Contingent upon the results of RPSB-118 & 120.
	RPSB-120	60	3	X	X	X	X	—	1 week	Delineate the vertical and horizontal extent of BTEX/PAHs and NAPL in subsurface soil north of the Former Gas Works.
	RPSB-121	60	3	X	X	X	X	—	2 weeks	Delineate the vertical and horizontal extent of BTEX/PAHs and NAPL in subsurface soil in the vicinity of the Former Purifiers in the northern portion of the Former Gas Works.
	RPSB-122	75	4	X	X	X	X	—	2 weeks	Delineate the vertical and horizontal extent of BTEX/PAHs and NAPL in subsurface soil in the vicinity of the Former Coke Pile.
	RPSB-123	125	4	X	X	X	X	—	2 weeks	Delineate the vertical and horizontal extent of BTEX/PAHs and NAPL in subsurface soil in the center of the Former Gas Works area.
	RPSB-124	75	4	X	X	X	X	—	2 weeks	Delineate the vertical and horizontal extent of BTEX/PAHs and NAPL in subsurface soil in the vicinity of the Former Generator House.
Geoprobe Boring	RPSB-08A	12	2	X	X	X	—	—	2 weeks	Further characterize the observations of purifier waste in the shallow subsurface soil.
Former Two-Million Cubic Foot Holder Area										
Geoprobe Boring	RPSB-128	12	2	X	X	X	—	—	2 weeks	Further delineate the vertical and horizontal extent of BTEX/PAHs and NAPL in shallow subsurface soil.
Former Electric Substation										
Rotasonic Soil Borings	RPSB-125	60	3	X	X	X	X	—	2 weeks	Further delineate the vertical and horizontal extent of BTEX/PAHs and NAPL in subsurface soil.
	RPSB-126	60	3	X	X	X	X	—	2 weeks	Further delineate the vertical and horizontal extent of BTEX/PAHs and NAPL in subsurface soil.
Surface Soil Samples	RPSS-17	2-inches	1	X	X	X	—	—	2 weeks	Further characterize the surface soil conditions in the vicinity of the former substation.
	RPSS-18	2-inches	1	X	X	X	—	—	2 weeks	Further characterize the surface soil conditions in the vicinity of the former substation.
	RPSS-19	2-inches	1	X	X	X	—	—	2 weeks	Further characterize the surface soil conditions in the vicinity of the former substation.

TABLE 1
Rockaway Park Former MGP Site
Supplemental Remedial Investigation
SUMMARY OF SUPPLEMENTAL REMEDIAL INVESTIGATION AT THE ROCKAWAY PARK SITE - ON SITE

Investigation Method/Technology	Sample Point ID	Estimated Maximum Depth (ft)	No. of Samples Selected for Analysis	Analysis					Laboratory Data Turnaround	Sample Point Objectives/Comments
				BTEX ¹	PAHs ²	Total CN ³	BTEX and PAH by SPLP ⁴	Field Parameters ⁵		
Groundwater Investigation										
Monitoring Well Installation and Sampling	RPMW-07D2	107	1	X	X	X	--	X	2 weeks	Monitor zones of identified NAPL. Location will be determined in the field.
	RPMW-08D	77	1	X	X	X	--	X	2 weeks	Monitor zones of identified NAPL. Define PAHs in deep groundwater from RPMW-08I. Location will be determined in the field.
	RPMW-08D2	107	1	X	X	X	--	X	2 weeks	Monitor zones of identified NAPL. Define PAHs in deep groundwater from RPMW-08I. Location will be determined in the field.
	RPMW-14D2	107	1	X	X	X	--	X	2 weeks	Monitor zones of identified NAPL. Location will be determined in the field.
	RPMW-15D	77	1	X	X	X	--	X	2 weeks	Monitor zones of identified NAPL. Define BTEX in deep groundwater from RPMW-15I. Location will be determined in the field.
	RPMW-18I	TBD	1	X	X	X	--	X	2 weeks	Monitor zones of identified NAPL in the vicinity of the former substation. Location will be determined in the field.
	RPMW-19	TBD	TBD	X	X	X	--	X	2 weeks	Contingent monitoring well cluster located south of the Office Building.
	RPMW-20	TBD	TBD	X	X	X	--	X	2 weeks	Contingent monitoring well cluster located in the vicinity of the former Store House.
	RPMW-21	TBD	TBD	X	X	X	--	X	2 weeks	Contingent monitoring well cluster located north of former 1912 Bulkhead north of the former Gas Works area.
Monitoring Well Installation and Sampling	RPMW-22	TBD	TBD	X	X	X	--	X	2 weeks	Contingent monitoring well cluster located north of former 1912 Bulkhead north of the former Gas Works area.
	RPMW-23	TBD	TBD	X	X	X	--	X	2 weeks	Contingent monitoring well cluster located north of the former Gas Works area.
	RPMW-24	TBD	TBD	X	X	X	--	X	2 weeks	Contingent monitoring well cluster located north of the former Gas Works area.
	RPMW-25	TBD	TBD	X	X	X	--	X	2 weeks	Contingent monitoring well cluster located in the center of the former Gas Works area.
Notes: TBD: To be determined. ¹ BTEX via USEPA Method 8021. ² PAHs via USEPA Method 8270. ³ Total CN via USEPA Method 9012. ⁴ Sample extract resulting from the Synthetic Precipitation Leaching Procedure (SPLP) will be analyzed for BTEX and PAHs. ⁵ Field Parameters include Temperature, pH, Conductivity, Dissolved Oxygen and Oxidation-Reduction Potential.										

TABLE 2
Rockaway Park Former MGP Site
Supplemental Remedial Investigation
SUMMARY OF SUPPLEMENTAL REMEDIAL INVESTIGATION AT THE ROCKAWAY PARK SITE - OFF SITE

Investigation Method/Technology	Sample Point ID	Estimated Maximum Depth (ft)	No. of Samples Selected for Analysis	Analysis					Laboratory Data Turnaround	Sample Point Objectives/Comments
				BTEX ¹	PAHs ²	Total CN ³	BTEX and PAH by SPLP ⁴	Field Parameters ⁵		
Subsurface Soil Investigation										
Rotosonic Soil Boring	RPSB-127	60	3	X	X	X	X	—	2 weeks	Delineate the vertical and horizontal extent of BTEX/PAHs and NAPL in subsurface soil to the east of the Rockaway Park Site.
Groundwater Investigation										
Groundwater Probes	RPGP-25	75	5	X	X	—	—	X	1 weeks	Determine groundwater quality southeast of the Rockaway Park Site.
	RPGP-26	75	5	X	X	—	—	X	1 weeks	Determine groundwater quality southeast of the Rockaway Park Site.
	RPGP-27	75	5	X	X	—	—	X	2 weeks	Determine groundwater quality east of the Rockaway Park Site.
	RPGP-28	75	5	X	X	—	—	X	2 weeks	Determine groundwater quality west of the Rockaway Park Site based on elevated BTEX observed in RPMW-08S.
	RPGP-29	75	5	X	X	—	—	X	2 weeks	Contingent groundwater probe to determine groundwater quality west of the Rockaway Park Site based on the results of RPGP-25 & RPGP-26.
Monitoring Well Installation and Sampling	RPMW-02D2	TBD	1	X	X	—	—	X	2 weeks	Contingent monitoring well based on the results of RPSB-118, RPSB-120, RPSB-121, RPSB-122 and any contingent borings (RPSB-117 and RPSB-119).
Jamaica Bay Sediment Investigation										
PONAR Sediment Samples	RPSD-01	5	2	X	X	X	—	—	2 weeks	Determine potential impacts from the site on Jamaica Bay.
	RPSD-02	5	2	X	X	X	—	—	2 weeks	Determine potential impacts from the site on Jamaica Bay.
	RPSD-03	5	2	X	X	X	—	—	2 weeks	Determine potential impacts from the site on Jamaica Bay.
	RPSD-03	5	2	X	X	X	—	—	2 weeks	Determine potential impacts from the site on Jamaica Bay.
	RPSD-04	5	2	X	X	X	—	—	2 weeks	Determine potential impacts from the site on Jamaica Bay.
	RPSD-05	5	2	X	X	X	—	—	2 weeks	Determine potential impacts from the site on Jamaica Bay.
	RPSD-06	5	2	X	X	X	—	—	2 weeks	Determine sediment quality upstream of the site on Jamaica Bay.
	RPSD-07	5	2	X	X	X	—	—	2 weeks	Determine sediment quality downstream of the site on Jamaica Bay.
Notes: TBD: To be determined. — : Not Applicable. ¹ BTEX via USEPA Method 8021. ² PAHs via USEPA Method 8270. ³ Total CN via USEPA Method 9012. ⁴ Sample extract resulting from the Synthetic Precipitation Leaching Procedure (SPLP) will be analyzed for BTEX and PAHs. ⁵ Field Parameters include Temperature, pH, Conductivity, Dissolved Oxygen and Oxidation-Reduction Potential.										

Table 3

**ROCKAWAY PARK FORMER MGP SITE
SUPPLEMENTAL INVESTIGATION
QA/QC SAMPLE SUMMARY**

PROGRAM ELEMENT	Environmental Media	Location/Depth	Number of Samples	Equipment	Laboratory Analysis*
<u>On-Site Investigation</u> Subsurface Soil Sampling	Soil	Collect 2 sets of QA/QC samples from 2 different sampling locations.	2 MS 2 MSD 2 FB	Decontaminated split spoon sampler	BTEX (Method 8021), PAHs (Method 8270), and total cyanide (Method 9012).
Groundwater Monitoring Well Sampling (5 new wells plus 30 existing wells)	Groundwater	Collect 2 sets of QA/QC samples from 2 different wells.	2 MS 2 MSD 2 FB 2 TB	Decontaminated polyethylene bailer	BTEX (Method 8021); PAHs (Method 8270); total cyanide (Method 9012); geochemical parameters including: total iron (Method 6010); dissolved ferrous iron (Standard Method 3500 Fe D modified); total and dissolved manganese (Method 200.7); sulfate and nitrate (IC Method E300), and major inorganic ions.**

Table 3 (continued)

**ROCKAWAY PARK FORMER MGP SITE
SUPPLEMENTAL INVESTIGATION
QA/QC SAMPLE SUMMARY**

PROGRAM ELEMENT	Environmental Media	Location/Depth	Number of Samples	Equipment	Laboratory Analysis*
<u>Off-Site Investigation</u>					
• Subsurface Soil Sampling	Soil	Collect 1 set of QA/QC samples from 1 sampling location.	1 MS 1 MSD 1 FB	Decontaminated split spoon sampler	BTEX (Method 8021), PAHs (Method 8270), and total cyanide (Method 9012).
• Groundwater Probe Sampling	Groundwater	Collect 1 set of QA/QC samples from 1 sampling location.	1 MS 1 MSD 1 FB 1 TB	Decontaminated Geoprobe screen point sampler	BTEX (Method 8021), PAHs (Method 8270), and total cyanide (Method 9012).
• Groundwater Monitoring Well Sampling (14 existing wells)	Groundwater	Collect 1 set of QA/QC samples from 1 sampling location.	1 MS 1 MSD 1 FB 1 TB	Decontaminated polyethylene bailer	BTEX (Method 8021), PAHs (Method 8270), and total cyanide (Method 9012).

Notes:

*Trip blanks are to accompany each shipment of groundwater samples sent to the laboratory.

** Major anions include: phosphate, chloride, bromide, iodide, sulfate, nitrate by IC Method E300.

Major cations include: sodium, potassium, calcium, magnesium, total iron (dissolved iron analysis and speciation of ferric and ferrous ions), and manganese.

MS: Matrix Spike
MSD: Matrix Spike Duplicate
FB: Field Blank
TB: Trip Blank

ATTACHMENT B

PLATE 1



KeySpan Corporation
Environmental Asset Management
175 East Old County Road
Hicksville, NY 11801

September 20, 2002

Douglas MacNeal, Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Western Remedial Action, 11th Floor
625 Broadway
Albany, New York 12233-7010

Re: Rockaway Park
Former Manufactured Gas Plant (MGP) Site
Supplemental Remedial Investigation
Site No. 2-41-029

Dear Mr. MacNeal:

This letter presents an addendum to the work plan for the supplemental remedial investigation (SRI) currently being implemented at the Rockaway Park former MGP site. The scope of work is intended to address the New York State Department of Environmental Conservation's (NYSDEC) request to collect sediment samples in Jamaica Bay adjacent to the former MGP site. The scope of work described in this work plan is based on:

- The New York State Department of Environmental Conservation (NYSDEC) comment letter dated April 16, 2002, regarding the draft Rockaway Park Remedial Investigation (RI) Report (herein referred to as the "draft RI report");
- The NYSDEC comment letter dated June 26, 2002 and the KeySpan comment response letter dated July 3, 2002, regarding the Rockaway Park Supplemental Remedial Investigation (SRI) Work Plan; and
- KeySpan's assessment of existing data concerning the nature and extent of BTEX/PAHs and NAPL at the Rockaway Park site.
- NYSDEC's September 3, 2002 email Comments to KeySpan on the August 28, 2002 Sediment Work Plan
- September 17, 2002 conference call between KeySpan, NYSDEC, and GEI Consultants, Inc. (GEI)

Douglas MacNeal
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
September 20, 2002

Page 2

Sediment Investigation Objectives

As stated in NYSDEC's June 26, 2002 comment letter on the Supplemental Investigation Work Plan the "work plan must include at least a limited study of the adjacent sediments in the bay to determine what, if any, impact the site may be having on the overall environmental quality of the bay". As you indicated during our conference call on June 26, 2002 with Mr. David Terry of GEI Consultants, Inc. (GEI), NYSDEC's objective is to evaluate the shallow sediments in the Jamaica Bay adjacent to the site.

Investigation Approach

To achieve the objective of evaluating shallow sediments and determining whether the site has had an impact on sediment quality in Jamaica Bay, the following investigation approach and rationale is proposed. This approach incorporates requests made via email by NYSDEC on September 3, 2002. The approach also includes decisions and requests made during the September 17, 2002 conference call with NYSDEC.

Jamaica Bay Sediment Sampling

In July 2002, KeySpan's Engineering and Survey group conducted a hydrographic survey of Jamaica Bay adjacent to the former MGP site to determine the bathymetry of the channel. Figure 1 includes the bathymetric contours of the channel as determined by the survey. As Figure 1 shows, the channel slopes rather steeply from the bulkhead at Beach Channel Drive toward the center of the channel approximately 300 feet offshore. The maximum depth of the channel is approximately 44 to 48 feet below mean sea level. Along the bulkhead the channel slopes from about 12 feet to about 30 feet deep within approximately 150 feet offshore.

Shallow (3-foot deep) sediment samples will be collected using vibracore sampling methods along three transects oriented perpendicular to the shore (Figure 1). Sample cores RPSED02-1 through RPSED02-6 will be collected along two transects at the western and central portions of the site. These sample cores will be collected approximately 10, 75, and 150 feet from the bulkhead, respectively. Sample Cores RPSED02-7 through RPSED02-9 will be collected along a transect at the eastern portion of the site, approximately 10, 60, and 120 feet from the bulkhead, respectively. The distances from shore for the eastern transect differ from the other two transects because initially, the sampling approach was to focus on areas where the channel "flattened out". NYSDEC's September 3, 2002 comments revised the approach and recommended collection of sediments where initially proposed in the August 28, 2002 scope, at the bulkhead, and halfway between these points.

At each proposed sediment core location, a vibracore sampler will be deployed from a boat equipped with GPS navigation equipment to record the location of each sample point. The GPS coordinates will be tied into the survey coordinate system used for the on-site investigations. The vibracore will be used to obtain sediment samples from nominally the upper 3 feet of the sediment. The sediment samples will be examined and described by the GEI field staff representative. Photographs of the cores will be taken to document the findings.

A maximum of two samples from each core will be analyzed for BTEX by EPA Method 8260, SVOCs by EPA Method 8270, total cyanide by CLP methods, Total Organic Carbon (TOC), pH by CLP Methods, and hardness by method SM2340.B. The cores will also be submitted for grain size analyses. Within each core, the top 6-centimeters will be collected and analyzed for the above parameters. The remainder of the core will be homogenized and submitted for laboratory analysis. If discrete textural layers greater than 10 centimeters thick are encountered that appear visually or otherwise impacted, these layers would be submitted for discrete laboratory analysis in lieu of the homogenized remainder of the core sample.

Background surficial sediment samples will be collected at up to 8 locations (RPSEDBG-A through RPSEDBG-H) east and west of the site using a PONAR sampler of similar device. Figure 1 presents the approximate proposed sample locations. Each background surficial sediment sample will be submitted for laboratory analysis of BTEX by EPA Method 8260, SVOCs by EPA Method 8270, total cyanide by CLP methods, Total Organic Carbon (TOC), pH by CLP Methods, hardness by method SM2340.B, and grain size.

One duplicate sample and one MS/MSD sample will be collected as QA/QC samples. An equipment rinsate blank will also be collected.

Equipment Decontamination

Any non-dedicated sampling equipment that contacts the sediments will be decontaminated prior to each use by the following procedure:

- Wash with a tap water and non-phosphate detergent solution
- Tap water rinse
- Distilled water rinse
- 10% nitric acid rinse
- Methanol rinse
- Distilled/deionized water rinse

All decontamination fluids used on the sampling boat will be contained and brought back to the MGP site for proper disposal along with other site investigation derived wastes.

Douglas MacNeal
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
September 20, 2002

Page 4

Health and Safety Plan

All fieldwork will be conducted in manner consistent with the provisions of the site-specific health and safety plan previously provided to NYSDEC. Personnel working on the sampling boat will be required to wear personal floatation devices at all times. In addition a throwable buoyant life ring will be on board the sampling boat.

Field Program Schedule

It is anticipated that the sediment-sampling program can be conducted following NYSDEC approval of this document. KeySpan anticipates that the sampling program can be completed in one to two days of fieldwork, depending on weather and tidal conditions. Upon approval, KeySpan will notify NYSDEC of the anticipated start date for the sediment-sampling program. The start date may be subject to change based on weather conditions and availability of a sampling vessel.

Supplemental Investigation Summary Report

The findings of the sediment-sampling program will be incorporated into the supplemental investigation report to be prepared following completion of the supplemental investigation scope. If you have any questions, feel free to contact me at (516) 545-2555.

Sincerely,

Thomas J. Campbell
Project Manager

Attachments

cc: T. Leissing (KSE)
S. Selmer (NYSDOH)
D. Terry (GEI)

Appendix B

Soil Boring Logs, Monitoring Well Construction Logs, and Test Pit Logs



Site Id: RPSB-IRM-01

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/04/02 - 03/04/02

Total Depth: 16.00'

Remarks:

Elevation: 7.26'

Datum: Mean Sea Level

Logged By: William J. Ryon

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, medium sandy FILL, loose, dry Black, fine-medium sandy FILL, gravel, ash, fill debris
4-8'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
8-12'			0.0 ppm 7.2 ppm 17.3 ppm 10.9 ppm 8.8 ppm 9.2 ppm		Orange, medium SAND, loose, moist Black to charcoal gray, fine-medium SAND, loose, possible hydrocarbon-like odor, moist (wet at 8.75')
12-16'			0.0 ppm 2.6 ppm 7.7 ppm 52.5 ppm 6.4 ppm 8.7 ppm 7.9 ppm 9.0 ppm		Black (12-13.5') to gray (13.5-15.75'), fine-medium SAND w/trace coarse sand, loose, mild hydrocarbon-like odor, wet
					Base of boring - 16 ft.



Site Id: RPSB-IRM-02

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/04/02 - 03/04/02

Total Depth: 16.00'

Remarks: Boring in same location as RPSB-83.

Elevation: 7.33'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'		0-4'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Light brown, medium sandy FILL w/trace fine gravel, loose, dry (wet at 2.5')
4-8'		4-8'	0.9 ppm 0.4 ppm 0.7 ppm 0.6 ppm 0.8 ppm		Tan-light brown-orange (4-6') to brown-black (6-6.5'), medium sandy FILL, black staining in bottom .5', hydrocarbon-like odor, dry (wet at 6')
8-12'		8-12'	1.0 ppm 1.1 ppm 2.6 ppm 2.4 ppm 3.7 ppm 29.1 ppm		Brown, medium sandy FILL, loose, wet Black, fine-medium sandy FILL, loose, mild hydrocarbon-like odor, wet
12-16'		12-16'	0.0 ppm 0.0 ppm 0.2 ppm 1.2 ppm 2.1 ppm 0.9 ppm 0.3 ppm		Gray, fine-medium sandy FILL, loose, possible organic (H2S-like)/hydrocarbon-like odor but undetermined, wet Bk, FILL, clinker, coal fragments, gravel, loose, odor as above but mild, wet Base of boring - 16 ft.



Site Id: RPSB-01

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/07/99 - 02/07/99

Total Depth: 40.00'

Remarks: Samples selected for analysis at 5-7' and 38-40'.

Elevation: 2.63'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Hollow Stem Auger

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm		Dark brown, fine SAND, loose
			0.0 ppm		Tan-gray, fine SAND, loose
		4-8'	0.0 ppm		Tan, fine SAND, w/isolated yellow & black bands, dry, loose, clam shells
5			0.0 ppm		Same as above
		8-10'	0.0 ppm		Tan, fine SAND, crushed clam/oyster shells, medium dense, wet
10		10-12'	0.0 ppm		Tan/gray, fine SAND, crushed shells, wet
		12-14'	0.0 ppm		Gray, fine SAND, isolated black bands, dense, wet
		14-16'	0.0 ppm		Gray fine SAND, medium dense, wet
15		16-18'	0.0 ppm		Gray to black fine SAND, medium dense, wet
		18-20'	0.0 ppm		Gray, fine-coarse SAND, medium dense, wet
20		20-22'	0.0 ppm		Gray, fine to med SAND w/crushed clam shells, medium dense, wet
		22-24'	0.0 ppm		Gray, medium SAND w/clam shells, isolated black stains, loose, wet
		24-26'	0.0 ppm		Gray, medium-fine SAND w/crushed shells, wet
25		26-28'	0.0 ppm		Gray, fine SAND, medium dense, wet
		28-30'	0.0 ppm		Gray, fine SAND, crushed clam shells, medium dense

Location: Rockaway Park				Site Id: RPSB-01	
Purpose: Soil Boring				Total Depth: 40.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-40		30-32'	0.0 ppm		Gray, fine SAND, slight naphthalene-like odor, loose, moist
		32-34'	0.0 ppm		Same as above
		34-36'	0.0 ppm		Same as above, w/no odor
		36-38'	0.0 ppm		Same as above, but dense
		38-40'	0.0 ppm		Same as above
		38-40'	0.0 ppm		Same as above
40					Base of boring- 40 ft.
45					
50					
55					
60					
65					



Site Id: RPSB-02

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/09/00 - 02/09/00

Total Depth: 42.00'

Remarks: Sample selected for analysis at 20-22' and 40-42'

Elevation: 8.26'

Dotum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	0.1 ppm		Tan, fine, sandy FILL, loose
10		10-12'	165 ppm 80 ppm		Black, fine sandy FILL, heavy tar staining, naphthalene-like odor, shale fragments, med dense, wet
15		15-17'	8.0 ppm 1.8 ppm		Gray, fine SAND w/band of soft gray clay, light tar staining, naphthalene-like odor, wet
20		20-22'	1.0 ppm 0.9 ppm		Gray, med-coarse SAND, slight naphthalene-like odor, stains, med dense, shells, wet
25		25-27'	0.9 ppm 2.0 ppm		Gray, fine-coarse SAND, naphthalene/hydrocarbon-like odor, shells, med dense, wet

Location: Rockaway Park					Site Id: RPSB-02
Purpose: Soil Boring					Total Depth: 42.00'
Consulting Firm: Dvirka & Bartilucci					Borehole Dia.: 2.00in
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30-32'	6.8 ppm 8.3 ppm		Gray, fine SAND, trace stain, naphthalene-like odor, crushed shells, med dense, wet
35		35-37'	19.0 ppm 18.5 ppm		Gray, fine SAND, slight naphthalene-like odor, med dense, moist
40		40-42'	2.4 ppm 1.8 ppm		Gray, med-fine SAND, slight naphthalene-like odor, med dense, wet
					Base of boring- 42'
45					
50					
55					
60					
65					



Site Id: RPSB-02A

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/17/00 - 02/18/00

Total Depth: 57.00'

Remarks: Samples selected for analysis at 30-32' and 55-57'.

Elevation: 9.93'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	0.0 ppm		Brown-tan, fine sandy FILL, med dense
10		10-12'	33.1 ppm		Block, fine sandy FILL, tar stains, naphthalene-like odor, loose, wet
15		15-17'	33.1 ppm		Same as above
20		20-22'	50.3 ppm		Black, fine sandy FILL, naphthalene-like odor, tar stained, clinker, dense, moist
25		25-27'	13.7 ppm		Same as above

Location: Rockaway Park				Site Id: RPSB-02A	
Purpose: Soil Boring				Total Depth: 57.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	3.5 ppm		Gray, medium SAND, w/shell fragments, tar staining, naphthalene-like odor, dense, moist
35		35-37'	19.2 ppm		Gray, med-fine SAND, naphthalene-like odor, loose, moist
40		40-42'	55.0 ppm		Same as above
45		45-47'	34.7 ppm		Same as above
50		50-52'	12.5 ppm		Same as above
55		55-57'	0.0 ppm		Gray, med-fine SAND, w/shell fragments, wet Base of boring - 57 ft.
60					
65					



Site Id: RPSB-03

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/10/00 - 02/11/00

Total Depth: 57.00'

Remarks: Samples selected for analysis at 5-7', 30-32'
Couldn't complete probe to targeted end point due to refusal.

Elevation: 9.93'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'			0.0 ppm		Gray/brown, mix topsoil, FILL, w/concrete, clinker
4-8'			0.0 ppm		Brown, med-coarse sandy FILL, w/concrete, clinker, tar
8-10'			0.0 ppm		Tan-orange, fine-med SAND, iron oxide staining, loose, wet
10-12'			0.0 ppm		Orange-green-black, fine SAND, iron oxide/black staining, loose, wet
12-14'			0.0 ppm		Gray, fine SAND, slight naphthalene-like odor, crushed shells, loose, wet
14-16'			0.0 ppm		Some as above
16-18'					No Recovery (16-18')
18-20'					No Recovery (18-20')
20-22'			0.0 ppm		Gray, fine SAND, slight naphthalene-like odor, crushed shells, loose, wet
22-24'					No Recovery (22-24')
24-26'			0.0 ppm		Gray, fine SAND, hydrogen sulfide/organic-like odor, crushed shells, medium dense, wet
26-28'			0.4 ppm		Gray, fine SAND, organic odor, medium dense, wet
28-30'			32.0 ppm		Gray, CLAY to fine SAND, light stain, tar-like odor, medium dense, wet

Location: Rockaway Park	Site Id: RPSB-03
Purpose: Soil Boring	Total Depth: 57.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-32'			38.0 ppm		Black, fine SAND w/clay bands, heavy tar stain, organic/naphthalene-like odor
32-34'			10.9 ppm		wood chunks, blue sheen, crushed shells
34-36'			21.5 ppm		Same as above
36-38'			13.0 ppm		Gray, fine SAND, naphthalene-like odor, crushed shells, loose, wet
38-40'			13.5 ppm		
40-42'			9.0 ppm		Gray, fine SAND, naphthalene-like odor, loose, wet
42-44'			13.5 ppm		
44-46'			13.5 ppm		Same as above, but medium dense
46-48'			9.2 ppm		
48-50'					
50-52'			50.0 ppm		Same as above
52-54'			21.0 ppm		
54-56'			144 ppm		Gray, fine SAND, strong naphthalene/organic-like odor, medium dense, moist
56-57'			64.0 ppm		
			175 ppm		Same as above, w/crushed shells
			127 ppm		
			24.0 ppm		Same as above
			21.3 ppm		
					Base of boring- 57 ft.



Site Id: RPSB-04

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/14/00 - 02/15/00

Total Depth: 47.00'

Remarks: Samples selected for analysis at 25-27', 45-47'

Elevation: 11.09'

Datum: Mean Sea Level

Lagged By: Ian Davidson

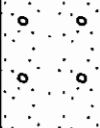
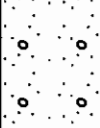
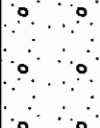
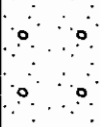
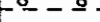
Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	0.0 ppm		Gray-black, fine SAND, shells, loose
10		10-12'	0.0 ppm		Brown-gray, fine SAND, organic-like odor, shells, loose, wet
15		15-17'	5.0 ppm		Black, fine SAND, organic/naphthalene-like odor, shells, medium dense, wet
20		20-22'			No recovery (20-22')
25		25-27'	10.0 ppm 10.2 ppm		Gray, fine SAND, naphthalene-like odor, medium dense, shells, moist

Location: Rockaway Park	Site Id: RPSB-04
Purpose: Soil Boring	Total Depth: 47.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-32'			2.0 ppm 2.4 ppm		Gray, fine-med SAND, naphthalene-like odor, shells, medium dense, moist
35-37'			8.3 ppm 1.8 ppm		Gray, coarse-med SAND, lt. stain, organic/naphthalene-like odor, shells, med dense, moist
40-42'			0.0 ppm 0.0 ppm		Gray, fine SAND, light organic/naphthalene-like odor, shells, medium dense, moist
45-47'			8.8 ppm 10.1 ppm		Same as above, no shells
					Base of boring- 47 ft.



Site Id: RPSB-05

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/16/00 - 02/17/00

Total Depth: 67.00'

Remarks: Samples selected for analysis at 4-6', 24-26', and 65-67'.

Elevation: 9.26'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm 4.0 ppm		Brown-tan, med-fine sandy FILL, organics, clinker, loose
5		4-8'	3.2 ppm 4.2 ppm 8.6 ppm		Brown-light tan, fine-med sandy FILL, iron oxide stain, clinker, shells, loose, moist
		8-10'			No recovery (8-10')
10		10-12'	1.5 ppm		Gray, fine SAND, shells, medium dense, wet
		12-14'			No recovery (12-14')
		14-16'	0.2 ppm		Gray, fine SAND, naphthalene-like odor, medium dense, wet
15		16-18'	1.6 ppm		Same as above, no odor
		18-20'	0.2 ppm		Same as above
20		20-22'	0.2 ppm 0.2 ppm		Black-gray, fine SAND, organic/naphthalene-like odor, medium dense
		22-24'	40.0 ppm		Same as above
		24-26'	15.2 ppm 34.0 ppm		Some as above, but loose
25		26-28'	18.0 ppm 28.0 ppm		Gray, fine-coarse SAND, naphthalene-like odor, shells, medium dense, wet
					Interval Skipped

Location: Rockaway Park	Site Id: RPSB-05
Purpose: Soil Boring	Total Depth: 67.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-32'			1.8 ppm 0.8 ppm 5.4 ppm	o o	Gray, fine SAND, naphthalene-like odor, dense, moist
32-34'			2.3 ppm	o o	Gray, medium SAND, loose, moist
34-36'			25.0 ppm 32.0 ppm	o o	Same as above, w/heavy hydrogen sulfide/naphthalene-like odor
36-38'			159 ppm 60.0 ppm	o o	Same as above, but medium dense
38-40'			110 ppm 111 ppm	o o	Same as above
45-47'			110 ppm 130 ppm	o o	Same as above, but fine sand, loose
50-52'			30.0 ppm 7.6 ppm	o o	Same as above
55-57'			0.0 ppm	o o	Gray, med SAND, slight organic-like odor, shells, loose, wet
60-62'			0.0 ppm	o o	Brown, fine SAND, moist, dense
65-67'			0.0 ppm	o o	Brown, fine SAND, dense, wet
					Base of boring- 67 ft.



Site Id: RPSB-07

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/13/99 - 12/13/99

Total Depth: 41.00'

Remarks: Samples selected for analysis at 15-17', 27-29' and 39-41'.

Elevation: 8.16'

Datum: Mean Sea Level

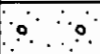
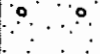
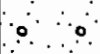
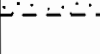
Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5					FILL (upper 15' not sampled)
10					
15		15-17'	0.0 ppm		Medium-dark gray, med-coarse, sandy FILL w/some mica and fine gravel
			0.0 ppm		Gray-black clay lense in sandy FILL w/clinker, shell fragments
		17-19'	0.0 ppm		Medium gray, med-coarse SAND, shell fragments
					Medium gray, med-coarse SAND, w/some mica, trace shells and lignite
		19-21'	0.0 ppm		Medium dark gray, med-fine SAND, some mica
20					
		21-23'	0.0 ppm		Med. gray, coarse-v. coarse SAND w/fine gravel, shell fragments, some mica
					Same as above, medium-light gray, w/subrounded fine gravel
		23-25'	0.0 ppm		Same as above, medium-dark gray
25					
		25-27'	0.0 ppm		Med-lt gray, v. coarse-coarse SAND w/fine-med rounded gravel, shell fragments
					Med gray, fine-coarse, micaceous SAND, trace shell fragments
		27-29'	0.0 ppm		Med gray, coarse-v. coarse SAND w/rounded med gravel, shell fragments
					Med-light gray, coarse-medium SAND
		29-31'	0.0 ppm		Med gray, coarse-med SAND w/mica, rounded med gravel, shell fragments

Location: Rockaway Park				Site Id: RPSB-07	
Purpose: Soil Boring				Total Depth: 41.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 4.25in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
31		31-33'	0.0 ppm		Med gray, coarse-med SAND w/some mica, fine gravel, shell fragments
33		33-35'	0.0 ppm		Med gray, medium-v. coarse SAND, w/rounded med gravel, some mica, tr. shell fragments
35		35-37'	0.0 ppm		Med gray, med-coarse SAND w/some fine gravel, shell fragments
37		37-39'	0.0 ppm		Med-dark gray, med-fine, micaceous SAND Same as above
39		39-41'	0.0 ppm		Medium dark gray, medium-v. coarse. micaceous SAND
41					Base of boring - 41 ft.
45					
50					
55					
60					
65					



Site Id: RPSB-08

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/13/99 - 12/14/99

Total Depth: 42.00'

Remarks: Samples selected for analysis 15-17', 30-32' and 40-42'.

Elevation: 7.62'

Datum: Mean Sea Level

Logged By: John Schafer

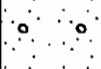
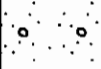
Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5					FILL (upper 15' not sampled)
10					
15					
15		15-17'	15 ppm		Gray, fine-medium SAND, dense, wet Black, soft, slightly plastic CLAY, wet
20		20-22'	178 ppm		Dark gray, fine-coarse SAND, loose, w/some clam shells
25		25-27'	0.0 ppm		Gray, fine-med SAND, medium dense, w/some clam shells

Location: Rockaway Park	Site Id: RPSB-08
Purpose: Soil Boring	Total Depth: 42.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	0.0 ppm		Gray, fine-med SAND, medium dense, w/some clam shells, wet
35		35-37'	0.0 ppm		Same as above
40		40-42'	0.0 ppm		Same as above, no clam shells
42					Base of boring- 42 ft.
45					
50					
55					
60					
65					



Site Id: RPSB-09

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/07/99 - 01/07/99

Total Depth: 42.00'

Remarks: Samples selected for analysis 2-4', 20-22', and 40-42'.

Elevation: 7.01'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
2-4'		17.4 ppm 4.1 ppm			Gray-black clayey, silty FILL, w/coarse gravel, coarse sand, wood fragments, dense, odor
5-7'		84.6 ppm			Gray-black clayey, silty FILL w/coarse-med sand, dense, w/clinker, odor, wet
10-12'		22.6 ppm 2.5 ppm 0.0 ppm			Gray-black, gravelly FILL w/clinker, wood fragments, tar Gray-black, medium-coarse SAND, odor
15-17'		11.5 ppm 0.5 ppm			Dark gray, coarse-medium SAND w/some mica, odor
20-22'		0.0 ppm			Medium gray, med-coarse SAND w/fine-med rounded gravel, shell fragments, odor
25-27'		0.0 ppm			Medium gray, coarse-v. coarse SAND w/shell fragments, little fine gravel, slight odor

Location: Rockaway Park	Site Id: RPSB-09
Purpose: Soil Boring	Total Depth: 42.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	0.0 ppm		Medium light gray, med-coarse SAND w/little mica, slight odor
35		35-37'			No recovery (35-37')
40		40-42'	0.0 ppm		Medium gray, med-fine, micaceous SAND, dense
42					Base of boring- 42 ft.
45					
50					
55					
60					
65					

Site Id: RPSB-09A



GBI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/25/02

Date Completed: 07/25/02

Remarks:

Ground Elevation: 7.61'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 12.00'

Drilling Method: Geoprobe

Logged By: Rochelle Noble

Certified By: Matt O'Neil

Soil Description

color, density, SOIL, admixture,
moisture, other notes, ORIGIN.

Lithology

Physical Observations

Elevation (ft)

0-4

Blows Per 6 Inches

Recovery %

PID

Depth (ft.)

50

202 ppm

0'-2"
2'-8"
8'-12"
1'-2'-2'-4"

Fill-ashpalt and subbase.
Clinker like material and solid phase tar.
Strong purifier odor.
Moist. Clinker like material and ash.
Moist. Clinker, ash, purifier, solid phase tar.

2'-4"-2'-9"

Moist. Clinker-like material and ash.
Stained black with strong purifier odor.

4-8

63

149 ppm

4'-8'

Wet. Fill material. Clinker like material.
SAND, sheen and Black staining at 5.5
to 6.5. Strong purifier odor.

8-12

63

242 ppm

8'-12'

Wet. Fill material: Clinker-like material,
coke, wood, chips. Material has sheen. Material
stained black. Strong purifier odor.

10

END OF BORING AT 12'.

Legend: Physical
Observations

None

Blebs, Globs, Lenses, Grain Coating, Sheens

Stoin

Tar Saturated

Solid Tar



Site Id: RPSB-10

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/28/99 - 12/29/99

Total Depth: 67.00'

Remarks: Samples selected for analysis 4-6', 18-20', 50-52', and 65-67'.

Elevation: 6.93'

Datum: Mean Sea Level

Logged By: Jeff Diomand

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
2-4'			0.0 ppm 14.3 ppm		Gray-black, med-v. coarse sandy silty FILL, tar, clinker, odor
4-6'			0.0 ppm		Green-black, silty med-fine sandy FILL, w/clinker & tar
6-8'			72.3 ppm 15.9 ppm		Gray-black, med-fine sandy FILL, w/tar, shale fragments, odor, sheen, staining, wet
8-10'			74.4 ppm 12.0 ppm		Gray-black, med-v. coarse sandy FILL, w/shale fragments, gravel, odor and staining
10-12'			35.1 ppm		Dark gray, silty med-coarse sandy FILL, w/shale fragments, odor
12-14'			1.6 ppm 85.1 ppm 2.1 ppm		Dark gray, coarse-med sandy FILL, w/shale fragments, odor
14-16'			3.7 ppm 0.3 ppm 1.1 ppm		Light gray, coarse-v. coarse sandy FILL, w/some mica, odor
16-18'			1.1 ppm 3.7 ppm 8.4 ppm		Med. dark gr., c.-v. coarse sandy FILL, w/shale frags, tr. fine gravel, odor, some mica
18-20'			0.0 ppm 0.5 ppm 9.8 ppm		Medium light gray, med-coarse SAND, w/some mica, slight odor
20-22'			0.0 ppm		Med gray, med-coarse SAND, w/mica, med gravel, slight odor
22-24'			3.2 ppm 0.6 ppm 0.1 ppm 6.0 ppm 0.0 ppm		Medium light gray, coarse-v. coarse SAND, w/shell fragments, mica, tr. fine gravel
24-26'			0.0 ppm		Medium light gray, coarse-v. coarse SAND, w/some mica, medium gravel, slight odor
26-28'			0.0 ppm 26.7 ppm		Medium gray, coarse-v. coarse SAND w/fine-med subround gravel, shell fragments
28-30'			0.0 ppm 36.7 ppm		Same as above, some mica
					Medium gray, medium-coarse, micaceous SAND, trace shell fragments
					Same as above, trace v. coarse SAND, no shells
					Med gray, coarse-v. coarse SAND w/fine-med rounded gravel, shell fragments
					Med-lt gray, medium-coarse, micaceous SAND

Location: Rockaway Park	Site Id: RPSB-10
Purpose: Soil Boring	Total Depth: 67.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-32'			0.0 ppm 6.5 ppm 15.0 ppm 2.0 ppm 2.0 ppm 4.0 ppm 12.0 ppm 35.0 ppm 7.5 ppm 11.5 ppm 7.5 ppm 5.4 ppm 3.3 ppm 10.0 ppm		Gray, fine-coarse, medium dense SAND w/tr mica, med. gravel, shell fragments, wet
32-34'					Gray, fine SAND, medium dense, trace mica, wet
34-36'					Same as above, w/some mica
36-38'					Gray, fine, micaceous SAND, medium dense, wet
38-40'			0.0 ppm 3.0 ppm 6.5 ppm		Same as above, slight odor
45-47'			0.0 ppm 1.0 ppm		Gray, fine, micaceous SAND, medium dense, wet
50-52'			0.0 ppm 30.0 ppm 8.0 ppm		Gray, fine SAND, medium dense, hydrogen sulfide-like odor, wet
55-57'			0.0 ppm		Medium gray, coarse-med, micaceous SAND
60-62'			2.1 ppm 0.1 ppm		Medium dark gray, coarse-v. coarse micaceous SAND w/shell fragments, trace fine gravel
65-67'			0.0 ppm 0.5 ppm		Medium-dark gray, medium-fine, micaceous SAND
					Base of boring - 67 ft.



Site Id: RPSB-11

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/17/99 - 12/17/99

Total Depth: 47.00'

Remarks: Samples selected for analysis 15-17', 40-42' and 45-47'. Encountered free NAPL between 17'-20' below surface. Upper 15' description from drill cuttings.

Elevation: 7.47'

Datum: Mean Sea Level

Lagged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0					Med brown/dk yellow-orange, med-coarse SAND w/some gravel
5					Dark yellow brown, silty CLAY
5					Med brown/dk yellow-orange, med-coarse SAND w/some gravel
5					Gray-orange, coarse-v. coarse SAND w/fine-medium gravel
10					Medium-medium dark gray, medium-coarse SAND w/some mica
15		15-17'	95 ppm 35 ppm 100 ppm		Brown, fine SAND, stained, naphthalene-like odor, loose, wet
15					Gray, fine SAND, naphthalene-like odor loose, wet
15					Brown, fine SAND, stain, naphthalene-like odor, loose, wet
20		20-22'	185 ppm		Gray, fine SAND, med dense, naphthalene-like odor, intermittent brown staining, wet
25		25-27'	187 ppm		Same as above, w/some free NAPL, brown staining at 25-25.25'

Location: Rockaway Park				Site Id: RPSB-11	
Purpose: Soil Boring				Total Depth: 47.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	160 ppm		Gray, fine SAND, medium dense, naphthalene-like odor, intermittent brown staining, wet
35		35-37'	35 ppm		Same as above
40		40-42'	14 ppm		Same as above, with no staining
45		45-47'	14.6 ppm		Same as above, hydrogen sulfide-like odor
					Base of boring at 47 feet
50					
55					
60					
65					

Site Id: RPSB-12

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/27/99 - 12/27/99

Total Depth: 52.00'

Remarks: Samples sent for analysis 2-4', 14-16', and 50-52'. PID ppm - headspace obtained every 1/2'.

Elevation: 7.18'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-2			0.0 ppm		FILL, slag in black-brown silty matrix w/fine orange-tan sand, loose
2-4			10 ppm 8.6 ppm 9.5 ppm		Tan-brown, fine sandy FILL, loose, w/clinker
4-6			1.2 ppm 1.0 ppm		FILL material, clinker, black, loose, wet @ 5' bgs
6-8			115 ppm 500 ppm 500 ppm		Gray, FILL, shale fragments, w/hydrocarbon-like odor, some NAPL, wet
8-10			600 ppm		Gray, silty FILL, shale fragments, loose, hydrocarbon-like odor, w/NAPL, wet
10-12			900 ppm		Gray, FILL, shale fragments, loose, coated w/NAPL, heavy hydrocarbon-like odor, wet
12-14			200 ppm 185 ppm		Gray, silty FILL, shale fragments, osh, w/black silt, heavy hydrocarbon-like odor, coated w/NAPL
14-16			1000 ppm 550 ppm 500 ppm		Black, sandy SILT, NAPL-stained, medium dense, heavy hydrocarbon-like odor, wet
16-18			170 ppm 180 ppm 110 ppm		Black, CLAY, medium stiff, plastic, heavy hydrocarbon-like odor, w/NAPL, sheen, wet
18-20			180 ppm 150 ppm 40 ppm		Gray, fine SAND, medium dense, heavy hydrocarbon-like odor, some staining, wet
20-22			150 ppm 35 ppm		Black, CLAY, medium soft, hydrocarbon-like odor, w/fine sand, wet
22-24			60 ppm 48 ppm 35 ppm 20 ppm		Gray, fine SAND, medium dense w/clam shells, hydrocarbon-like odor, wet
24-26			148 ppm 43 ppm 20 ppm		Gray, fine-coarse SAND, medium dense, brackish & hydrocarbon-like odors, intermittent blackish-brown staining
26-28			35 ppm 25 ppm 20 ppm		Black, CLAY, stiff, hydrocarbon-like odor, sheen, plastic
28-30			100 ppm 80 ppm 30 ppm 10 ppm		Gray, fine SAND, medium dense, clam shells, hydrocarbon-like odor, sheen, intermittent brown stain, wet
					Brown, fine SAND, medium dense, hydrocarbon-like odor, intermittent brown staining, sheen, w/clam shells, wet

Location: Rockaway Park				Site Id: RPSB-12	
Purpose: Soil Boring				Total Depth: 52.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32	32 ppm 16 ppm 5.0 ppm 1.3 ppm 23 ppm 140 ppm		Gray, fine SAND, med dense, hydrocarbon-like odor, intermittent brown staining, sheen, w/clam shells, wet
32		32-34			Some as above, w/brown stain 1" thick at 34'
34		34-36	110 ppm 85 ppm 130 ppm		Gray, fine-med SAND, med dense, hydrocarbon-like odor, intermittent brown stain odor, wet
36		36-38			No recovery (36-38')
38		38-40	3.8 ppm 7.1 ppm 7.5 ppm		Gray, fine SAND, medium dense, wet
40					
45		45-47	0.0 ppm 1.0 ppm 0.1 ppm		Same as above
50		50-52	0.0 ppm 0.0 ppm		Same as above
52					Base of boring -- 52 feet



Site Id: RPSB-13

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/13/00 - 01/14/00

Total Depth: 40.00'

Remarks: Samples selected for analysis at 4-6', 30-32', and 38-40'.

Elevation: 7.91'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Hollow Stem Auger

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4	0.0 ppm		Brown, topsoil, FILL, clinker, med dense
			0.0 ppm		Light brown, fine/med sandy FILL, loose
		4-8	0.0 ppm		Brown, topsoil, FILL, loose
			0.0 ppm		
		8-12	0.0 ppm		Light tan, fine SAND, loose, moist
			0.0 ppm		Light brown, fine SAND, loose, wet
		12-16	2.3 ppm		Gray, fine SAND, slight NAPL, med stiff, moist
			1.3 ppm		
			43.5 ppm		
			195.0 ppm		
		16-20	64.0 ppm		Gray, fine SAND, slight NAPL, loose, moist
			32.2 ppm		
			8.7 ppm		
					Missed Interval
		24-26	5.2 ppm		Lt gray, fine SAND, loose, wet,
			8.0 ppm		
		26-28	10.6 ppm		Gray, fine SAND, w/NAPL, loose, wet
		28-30	6.8 ppm		Same as above, medium stiff
			9.0 ppm		

Location: Rockaway Park	Site Id: RPSB-13
Purpose: Soil Boring	Total Depth: 40.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32	0.0 ppm	○ ○	Gray, fine SAND, w/slight NAPL, medium stiff, wet
32		32-34	0.0 ppm	○ ○	Gray, fine-medium SAND, medium stiff, wet
34		34-36	0.0 ppm	○ ○	Gray, fine SAND, medium stiff, moist
36		36-38	0.0 ppm	○ ○	Same as above
38		38-40	0.0 ppm	○ ○	Same as above, but stiff
40				---	Base of Boring - 40 feet
45					
50					
55					
60					
65					



Site Id: RPSB-14

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/13/99 - 12/13/99

Total Depth: 42.00'

Remarks: Samples selected for analysis at 0-2', 6-8', 30-32', and 40-42'. PID readings are presumed to be biased high due to lack of odors/staining.

Elevation: 7.10'

Datum: Mean Sea Level

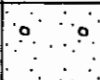
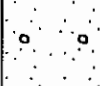
Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-1.5			151 ppm		Black, FILL, w/tar, soft
2-4			120 ppm		Orange-brown, fine SAND, some subrounded gravel, loose, dry
4-6			584 ppm		Orange-gray, fine SAND, stratified, loose, dry
6-8			600 ppm		Gray, fine SAND, loose, some brown staining at 5', wet at 5.5'
10-12			680 ppm		Gray, fine SAND, loose, wet
15-17			2000+ ppm		Gray, fine-med SAND, dense, trace of clam shells, wet
20-22			0.0 ppm		Dark gray, fine SAND, medium dense, wet
25-27			213 ppm		Same as above, but fine to coarse SAND, w/clam shells
					Same as above, but fine SAND

Location: Rockaway Park				Site Id: RPSB-14	
Purpose: Soil Boring				Total Depth: 42.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32	71 ppm		Dark gray, fine-medium SAND, some clam shells, medium dense, wet
35		35-37	185 ppm		Gray, fine SAND, trace of clam shells, medium dense, wet
40		40-42	14 ppm		Gray, fine SAND, medium dense, wet
42					Base of Boring at 42'
45					
50					
55					
60					
65					



Site Id: RPSB-15

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/15/99 - 12/15/99

Total Depth: 42.00'

Remarks: Samples selected for analysis at 3-5', 7-9', 25-27', and 40-42'. Cores from 20-22', 25-27', and 30-32' appear to be similar to cores in purifier waste - RPSB - 16 and 18.

Elevation: 7.88'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hallow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0					Brown, silty, fine-medium SAND, (from drill cuttings)
3-5'			0.0 ppm		Brown, sandy SILT, soft
5-7'					Crushed GRAVEL, over orange-br, fine SAND w/some clam shells, loose, wet
7-9'			0.0 ppm		No Recovery (5'-7')
10					Brown, fine SAND, loose, wet
15			0.0 ppm		
15-17'			0.0 ppm		Black-gray, fine, micaceous SAND, loose, wet
20			3.5 ppm		
20-22'			3.5 ppm		Black, fine-coarse SAND, loose, wet
25			0.0 ppm		
25-27'			0.0 ppm		Same as above

Location: Rockaway Park				Site Id: RPSB-15	
Purpose: Soil Boring				Total Depth: 42.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	0.0 ppm	o o	Black-gray, fine SAND, medium dense, wet
35		35-37'	0.0 ppm	o o	Same as above
40		40-42'	0.0 ppm	o o	Dark gray, fine SAND, medium dense, wet
42					Base of boring - 42'
45					
50					
55					
60					
65					



Site Id: RPSB-16

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/03/99 - 12/07/99

Total Depth: 52.00'

Remarks: Samples selected for analysis at 4-6', 6-8', 30-32', and 50-52'.

Elevation: 8.12'

Datum: Mean Sea Level

Logged By: Shofer/Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		4-6'	1584 ppm		Dark brown, fine-medium silty, sandy FILL
6		6-8'	2000+ ppm		Br-black, silty fine sandy FILL, naphthalene-like odor Black, clay-like material, v. soft, heavy naphthalene-like odor, moist Brn-black, fine SAND, med dense, heavy naphthalene-like odor, moist to wet at 6.5'
10		10-12'	2000+ ppm		Black-gray, fine-med SAND, med dense, heavy naphthalene-like odor, wet
15		15-17'	2000+ ppm		Same as above, w/sheen
20		20-22'	2000+ ppm		Black, fine-coarse SAND, med dense, w/some clam shells, heavy naphthalene-like odor, sheen, wet
25		25-27'	0.0 ppm		Medium gray, coarse-v. coarse SAND, w/shell fragments, some mica

Location: Rockaway Park				Site Id: RPSB-16	
Purpose: Soil Boring				Total Depth: 52.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30-32'	0.0 ppm		Med gray, med-coarse, micaceous SAND, w/some shell fragments, slight odor
35		35-37'	0.0 ppm 3.3 ppm		Med gray, med-coarse SAND, slight odor, light staining & sheen at bottom of sampler
40		40-42'	1.9 ppm 1.7 ppm		Med gray, med-fine, micaceous SAND w/sheen, slight odor at top of sampler
45		45-47'	0.2 ppm 0.8 ppm		Same as above, no sheen or odor
50		50-52'	3.7 ppm 2.6 ppm		Same as above
					Base of boring at 52'
55					
60					
65					



Site Id: RPSB-17

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/07/99 - 12/07/99

Total Depth: 52.00'

Remarks: Samples selected for analysis at 5-7, 35-37', and 50-52'.

Elevation: 0.96'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	24.3 ppm 35.3 ppm 14.6 ppm		Dark gray/gray black, med-fine, micaceous SAND w/some fine-medium rounded GRAVEL, odor
10		10-12'	4.2 ppm 7.5 ppm 8.6 ppm		Dark gray, medium-very coarse SAND w/some mica
15		15-17'	23.7 ppm 15.1 ppm		Dark gray, coarse-med SAND w/some mica, odor, sheen & staining
20		20-22'	137 ppm 8.1 ppm		Brn/gry, med-v. coarse SAND w/shell frags, fine gravel, hvy stains, odor, sheen Med dark gray, med-v. coarse SAND w/fine-medium rounded gravel, odor
25		25-27'	77.7 ppm 62.3 ppm 13.4 ppm		Med gray, coarse-v. coarse SAND w/fine-med gravel, shell frags, odor, staining Med-light gray, med-fine SAND, slight odor

Location: Rockaway Park	Site Id: RPSB-17
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30-32'	12.0 ppm 1.2 ppm 12.2 ppm		Med gray, med-v. coarse, micaceous SAND, w/some fine and trace coarse gravel, odor
35		35-37'	11.3 ppm 1.1 ppm 11.8 ppm		Med gray, med-coarse, micaceous SAND, slight odor
40		40-42'	0.0 ppm		Medium light gray, med-fine, micaceous SAND
45		45-47'	0.6 ppm 0.0 ppm 5.4 ppm		Same as above
50		50-52'	0.0 ppm		Same as above
					Base of boring - 52'



Site Id: RPSB-18

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/08/99 - 12/09/99

Total Depth: 87.00'

Remarks: Samples selected for analysis 4-6', 10-12', 80-82' & 85-87'.

Elevation: 6.33'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

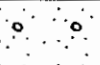
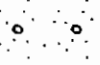
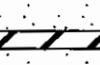
Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					Cement FILL with wood debris
5		4-6'	500 ppm		Black, fine SAND, loose, heavy naphthalene-like odor, wet
		6-8'	650 ppm		Same as above
10		10-12'	200 ppm		Black-gray, fine-coarse SAND, loose, naphthalene-like odor, sheen
15		15-17'	113 ppm		Dark gray, fine SAND, medium dense, slight naphthalene-like odor, wet
20		20-22'	1000 ppm		Gray, fine-med SAND w/some clam shells, med dense, naphthalene-like odor, intermittent brown staining, wet
25		25-27'	85 ppm		Gray, fine-coarse SAND, trace clam shells, dense, slight brown staining at 27' w/naphthalene-like odor, wet

Location: Rockaway Park				Site Id: RPSB-18	
Purpose: Soil Boring				Total Depth: 87.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	260 ppm		Gray, fine SAND, dense, naphthalene-like odor, sporadic brown staining, wet
35		35-37'	11 ppm		Gray, fine SAND, loose, wet
40		40-42'	56 ppm		Gray, fine SAND, med dense, slight intermittent brown staining, slight naphthalene-like odor, wet
45		45-47'	7.0 ppm		Gray, fine SAND, med dense, slight sheen, wet
50		50-52'	45 ppm		Gray, fine SAND, med dense, hydrogen sulfide-like odor, wet
55		55-57'	370 ppm		Gray-black, fine-med SAND w/tr med rounded gravel & clam shells, med dense, naphthalene-like odor, sheen, sporadic brown staining, wet
60		62-64'	720 ppm		Black-gray to brown, fine SAND, med dense, naphthalene-like odor, 1/2" black staining at 63', wet
65		65-67'	110 ppm		Brown, fine-med SAND w/mica flakes, loose, naphthalene-like odor, wet

Location: Rockaway Park	Site Id: RPSB-18
Purpose: Soil Boring	Total Depth: 87.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
70		70-72'	60 ppm		Brown, fine SAND w/mica flakes, med dense, naphthalene-like odor, wet
75		75-77'	55 ppm		Same as above with 3/4" black SAND w/naphthalene-like odor at 76'
80		80-82'	17 ppm		Brown, fine SAND w/mica flakes, med dense, wet
85		85-87'	17 ppm		Light brown, very soft CLAY, wet top 5" Black-dark brown, fine SAND, med dense w/mica flakes Base of boring at 87'



Site Id: RPSB-19

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/30/99 - 01/03/00

Total Depth: 47.00'

Remarks: Samples selected for analysis at 4-6', 30-32' and 45-47'.

Elevation: 7.56'

Datum: Mean Sea Level

Logged By: Jeff Diamond

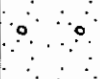
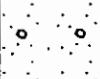
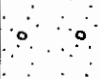
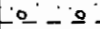
Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
2-4'		2-4'	0.0 ppm		FILL, w/black tar, clinker
4-6'		4-6'	20.0 ppm 101.0 ppm 12.8 ppm		Black, silty FILL w/tar, ash, medium rounded gravel, NAPL, staining, odor, wet
10-12'		10-12'	10.7 ppm 0.0 ppm		Gray-black, med-fine sandy FILL w/ash, tar, coated w/NAPL, heavily stained, odor
15-17'		15-17'	6.7 ppm 0.0 ppm		Med-dark gray, med-v. coarse SAND, some mica, stains, odor, sheen Gray-black, med-v. coarse SAND, saturated w/NAPL, odor
20-22'		20-22'	0.0 ppm		Med gray, coarse-v. coarse SAND w/fine-med rounded gravel, some mica, trace shells, odor
25-27'		25-27'	0.0 ppm		Med gray, med-v. coarse SAND, w/shell fragments, medium rounded gravel, some mica

Location: Rockaway Park	Site Id: RPSB-19
Purpose: Soil Boring	Total Depth: 47.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	0.7 ppm 6.0 ppm 3.7 ppm		Med gray, med-coarse SAND w/some fine sand, mica
35		35-37'	0.0 ppm 0.0 ppm 0.6 ppm		Same as above, medium dense
40		40-42'	0.0 ppm 1.8 ppm 4.5 ppm		Med gray, med-coarse, micaceous SAND, med dense, w/some fine sand
45		45-47'	0.0 ppm		Same as above, no fine sand
			0.0 ppm		Base of boring at 47'

Site Id: RPSB-20

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/20/99 - 12/20/99

Total Depth: 42.00'

Remarks: Samples selected for analysis at 2-4', 25-27', and 40-42'.

Elevation: 6.51'

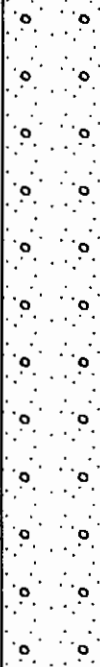
Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
2-4		2-4	0.0 ppm 8.7 ppm		Gray-black, silty, fine sandy FILL, w/red bricks, cement fragments, odor
4-6		4-6	11.1 ppm 0.0 ppm		Gray-black, silty, sandy FILL, odor, w/wood, NAPL, tar fragments & pebbles, wet
10-12		10-12	53.4 ppm 0.0 ppm		Gray-black, silty, med-coarse sandy FILL w/tar, staining, odor Dark gray, coarse-med SAND, some mica, odor
15-17		15-17	7.3 ppm 0.0 ppm		Gray-black, coarse-med SAND, odor, sheen & staining Med gray, coarse-med SAND, some mica
20-22		20-22	4.2 ppm 4.8 ppm 3.0 ppm		Dark-med gray, coarse-very coarse SAND, w/fine gravel, shell fragments
25-27		25-27	3.7 ppm 4.2 ppm 4.6 ppm 5.5 ppm		Dark gray, med-v. coarse SAND, w/trace shells, fine gravel Dark-medium gray, coarse-medium, micaceous SAND

Location: Rockaway Park	Site Id: RPSB-20
Purpose: Soil Boring	Total Depth: 42.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32	5.5 ppm 7.4 ppm 4.4 ppm		Medium-dark gray, coarse-medium, micaceous SAND
35		35-37	6.4 ppm 5.2 ppm		Medium-gray, medium-coarse, micaceous SAND
40		40-42	5.2 ppm 7.8 ppm 3.2 ppm 2.0 ppm		Medium-light gray, medium-coarse, micaceous SAND
					Base of boring at 42'

Site Id: RPSB-21

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/15/99 - 12/15/99

Total Depth: 41.00'

Remarks: Samples selected for analysis 7-9', 23-25', and 39-41'.

Elevation: 8.30'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	1.1 ppm 1.9 ppm 2.0 ppm		Gray-black, coarse-med, sandy FILL w/tar, odor
		7-9'	7.4 ppm 18.3 ppm		Light gray, coarse-med, sandy FILL w/some mica & iron staining
		9-11'	0.0 ppm 0.0 ppm		Med light gray, med-fine, micaceous SAND, w/iron staining
10		11-13'	0.0 ppm		Same as above, wet
		13-15'	0.0 ppm		Olive gray, med-coarse, micaceous SAND w/some lignite, shell fragments
		15-17'	0.3 ppm 1.0 ppm		Gray-blk/drk gry, med-fine to med-coarse SAND, w/silt & shell fragments, mica
15		17-19'	2.2 ppm 1.9 ppm 1.6 ppm		Med-drk gray, med-v. coarse, micaceous SAND, w/trace subrounded gravel
		19-21'	5.8 ppm		Medium gray, med-coarse SAND w/some mica
20		21-23'	4.4 ppm 5.8 ppm 8.2 ppm		Medium gray, coarse-v. coarse SAND w/some mica, fine gravel
		23-25'	9.5 ppm 10.2 ppm 10.0 ppm		Med gray, coarse-med, micaceous SAND
25		25-27'	9.0 ppm 7.3 ppm		Med gray, med-coarse, micaceous SAND, w/some v. coarse sand/fine gravel
		27-29'	20.3 ppm 3.1 ppm		Med-dark gray, coarse-v. coarse SAND w/shell fragments, fine-med gravel, some mica
		29-31'	8.5 ppm 58.6 ppm		Same as above
					Med gray, med-coarse, micaceous SAND
					Dark gray, v. coarse-coarse SAND w/shell fragments, fine-med gravel
					Medium-dark gray, med-coarse SAND, some mica
					Medium-dark gray, med-v. coarse SAND, w/fine-med gravel
					Med gray, coarse-med SAND, w/some mica, shell fragments, subrounded gravel
					Same as above, w/fine-med gravel

Location: Rockaway Park				Site Id: RPSB-21	
Purpose: Soil Boring				Total Depth: 41.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 4.25in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
31		31-33'	18.0 ppm 90.7 ppm 70.9 ppm		Medium-dark gray, coarse-med SAND, w/fine-med gravel, some mica and shells
33		33-35'	446 ppm 290 ppm		Med gray, v. coarse-coarse SAND w/shell fragments, some fine-med gravel Medium gray, med-coarse, micaceous SAND
35		35-37'	634 ppm 589 ppm		Medium-gray, med-v. coarse SAND, w/shell fragments, fine gravel
37		37-39'	504 ppm		Medium gray, med-coarse, micaceous SAND, trace shell fragments
39		39-41'	202 ppm 179 ppm		Some as above, no shell fragments
41					Base of boring at 41'
43					
45					
47					
49					
51					
53					
55					
57					
59					
61					



Site Id: RPSB-22

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/01/99 - 12/02/99

Total Depth: 82.00'

Remarks: Samples selected for analysis at 4-6', 8-10', 60-62', and 80-82'.

Elevation: 6.60'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		4-6'	7.5 ppm		Dark brown, fine SAND, med dense, w/NAPL, hydrocarbon-like odor, wet
		6-8'	7.3 ppm		Same as above
		8-10'	6.1 ppm		Same as above, w/NAPL, wet
10		10-12'	5.0 ppm		Gray, fine SAND, med dense, sheen, hydrocarbon-like odor, wet
		12-14'	6.5 ppm		Dark gray, fine-med SAND, med dense, trace clam shells, hydrocarbon-like odor, wet
		14-16'	15 ppm		Same as above, w/sheen
15		16-18'	5.4 ppm		Same as above, no sheen
		18-20'	4.9 ppm		Gray, fine-coarse SAND, trace oyster shells, gravel, stained at 19.5', odor, wet
20		20-22'	3.5 ppm		Same as above, intermittent staining from 21-22', slight hydrocarbon-like odor
		22-24'	2.5 ppm		Gray, fine-coarse SAND, trace clam shells, fine-med gravel, med dense, wet
		24-26'	2.3 ppm		Same as above, w/intermittent staining, hydrocarbon-like odor

Location: Rockaway Park	Site Id: RPSB-22
Purpose: Soil Boring	Total Depth: 82.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	2.6 ppm		Gray, fine SAND, trace clam shells, dense, staining at 31' hydrocarbon-like odor, wet
35		35-37'	17.0 ppm		Same as above, sporadic staining at 36'
40		40-42'	391 ppm		Gray, fine SAND, w/mica flakes, trace clam shells, naphthalene-like odor
45		45-47'	1011 ppm		Some as above, dense, no clam shells
50		50-52'	751 ppm		Some as above, slight naphthalene-like odor
55		55-57'	27 ppm		Gray, fine-coarse SAND, w/mico, dense, trace clam shells, slight odor
60		60-62'	1100 ppm		Brown-stained, fine SAND, dense, heavy hydrocarbon-like odor, free NAPL in spoon, wet
65		65-67'	170 ppm		Gray, fine SAND, w/sheen, slight sporadic staining, hydrocarbon-like odor, wet

Location: Rockaway Park	Site Id: RPSB-22
Purpose: Soil Boring	Total Depth: 82.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
70		70-72'	11.0 ppm		Gray-brn, fine SAND, w/some mica, dense, w/sheen, slight hydrocarbon-like odor, wet
75		75-77'	40 ppm		Same as above, no stain or odor
80		80-82'	35.0 ppm		Same as above
					Base of boring- 82 ft.
85					
90					
95					
100					
105					

Site Id: RPSB-23

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/04/00 - 01/06/00

Total Depth: 50.00'

Elevation: 6.55'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Remarks: Samples selected for analysis at 2-4', 12-14', 36-38', 48-50'

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
0-2		1.2 ppm 0.9 ppm 1.3 ppm 56 ppm 80 ppm 110 ppm	0.0 ppm 0.4 ppm 0.3 ppm 1.0 ppm 3.3 ppm			Tan, fine-coarse SAND, w/rounded gravel, loose, staining top 0.5' Brown, SILT w/some gravel, soft, slightly plastic Black tar-soaked, SILT, med plastic, med stiff, hydrocarbon-like odor Blk, tar-soaked sandy SILT, med plastic, med stiff, hydrocarbon-like odor, wet at 5.5' bgs
2-4		52 ppm 75 ppm 150 ppm 200 ppm 93 ppm 215 ppm 160 ppm 120 ppm 180 ppm 130 ppm 160 ppm 180 ppm 80 ppm 60 ppm	0.5 ppm 0.5 ppm 1.3 ppm 25 ppm 0.0 ppm 50+ ppm 29 ppm 2.3 ppm 0.4 ppm 0.8 ppm 3.4 ppm 27 ppm 0.0 ppm 0.5 ppm 0.6 ppm			Black, tar-soaked fine SAND, loose, heavy hydrocarbon-like odor, wet Same as above, but med dense
4-6		51 ppm 250 ppm 80 ppm	0.5 ppm 21 ppm			Gray-black, fine-coarse SAND, stained, w/rounded gravel, med dense, hydrocarbon-like odor, wet Gray-black, fine-coarse SAND, stained, gravel layer at 13' w/NAPL, med dense, heavy hydrocarbon-like odor
6-8		25 ppm 11 ppm 7 ppm	2.1 ppm 7 ppm 0.4 ppm			Black, fine-med SAND, stained, med dense, hydrocarbon odor, wet
8-10		4.8 ppm 5.9 ppm 9.3 ppm 2.5 ppm 20 ppm 6.9 ppm 7.3 ppm	0.3 ppm 0.2 ppm 0.3 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm			Blk, fine-coarse SAND, stained, w/gravel, med dense, hydrocarbon-like odor, sheen, wet Blue-gray, fine-coarse SAND, med dense, intermittent brown staining, hydrocarbon-like odor, sheen, wet
10-12		2.6 ppm 90 ppm 8.3 ppm 7.9 ppm 6.3 ppm 7.9 ppm 120 ppm	0.0 ppm 0.0 ppm			Same as above, w/subround gravel Same as above
12-14		10 ppm 275 ppm 60 ppm 45 ppm	0.0 ppm 0.0 ppm			Blue-gray, fine-coarse SAND, grades to fine, med dense, intermittent brown staining, hydrocarbon odor, wet
14-16		14.1 ppm 12.9 ppm 17.0 ppm 8.9 ppm 4.5 ppm 11 ppm 9 ppm	0.0 ppm 0.4 ppm 1.1 ppm 0.0 ppm 0.5 ppm 0.2 ppm			Light gray, fine SAND, med dense, slight hydrocarbon-like odor, wet Same as above
16-18						
18-20						
20-22						
22-24						
24-26						
26-28						
28-30						

Location: Rockaway Park	Site Id: RPSB-23
Purpose: Soil Boring	Total Depth: 50.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
		30-32				No recovery (30-32')
		32-34	4 ppm 2.8 ppm 6.0 ppm	0.4 ppm 0.4 ppm		Gray, fine, micaceous SAND, med dense, wet
		34-36	2.5 ppm 8.0 ppm 0.0 ppm 0.0 ppm 0.7 ppm 0.0 ppm	0.5 ppm 0.2 ppm 2.5 ppm 1.6 ppm 0.5 ppm 0.8 ppm 1.6 ppm		Same as above
		36-38	0.7 ppm 0.7 ppm	0.5 ppm 0.8 ppm 1.6 ppm		Same as above, dense
		38-40	0.0 ppm 14.0 ppm	0.0 ppm 0.0 ppm		Same as above
		40-42				No recovery (40-42')
		42-44	0.0 ppm 0.0 ppm 9.5 ppm 1.5 ppm 0.0 ppm 0.6 ppm 0.6 ppm	0.5 ppm 0.5 ppm 3.7 ppm 1.5 ppm 0.4 ppm 0.6 ppm 15.3 ppm 0.9 ppm 0.5 ppm 0.0 ppm 0.5 ppm 0.7 ppm 0.4 ppm 0.3 ppm 1.3 ppm		Gray, fine, micaceous SAND, dense, wet
		44-46				Same as above, slight hydrogen sulfide-like odor
		46-48	0.0 ppm 1.0 ppm 0.0 ppm	0.5 ppm 0.0 ppm 0.5 ppm 0.7 ppm 0.4 ppm 0.3 ppm 1.3 ppm		Gray, fine, micaceous SAND, dense, wet
		48-50	0.0 ppm			Dark gray, fine SAND, dense, wet
						Base of boring- 50 ft.



Site Id: RPSB-24

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/10/00 - 01/11/00

Total Depth: 52.00'

Remarks: Samples selected for analysis at 3-5', 5-7', 30-32', and 50-52'.

Elevation: 7.16'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
2-3'			1.3 ppm		Sandy FILL material
3-5'			1.2 ppm		Grayish-black, med-coarse SAND w/some fine gravel, odor
5-7'			2.0 ppm		Grayish-black, med-v. coarse SAND w/silt, gravel, loose, odor, staining
			0.3 ppm		Gray-brown/gray-blk, med-fine SAND, loose, w/silt, trace mica, odor, staining, moist
			3.2 ppm		Med dark gray/brownish-grayish-black, med-fine SAND w/some mica, odor, staining, NAPL-coated gravel
			0.7 ppm		
			0.4 ppm		
			0.7 ppm		
10-12'			0.6 ppm		Med-dark gray, med-v. coarse SAND w/some fine-med gravel, med dense, odor, wet
			94.1 ppm		
			0.0 ppm		
			0.6 ppm		
15-17'			12.6 ppm		Med dark gray, coarse-med SAND w/some fine gravel, odor, sheen
			2.9 ppm		
20-22'			19.7 ppm		Med gray, med-coarse SAND, med dense, heavily stained sand at bottom of split spoon sampler, odor & sheen, wet
			0.0 ppm		
			0.0 ppm		
			95.7 ppm		
25-27'			0.0 ppm		Med dark gray, coarse-med SAND, med dense, w/some shell fragments, staining, slight odor
			15.8 ppm		

Location: Rockaway Park	Site Id: RPSB-24
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bortilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	0.0 ppm 4.9 ppm 0.0 ppm		Med gray, med-coarse SAND, med dense, w/little mica, rounded pebbles, wet
35		35-37'	22.7 ppm 0.0 ppm 22.1 ppm 26.9 ppm		Med gray, med SAND, med dense, w/some mica, odor
40		40-42'	1.4 ppm 0.0 ppm		Med gray, med SAND, med dense
45		45-47'	0.0 ppm		Same as above, some mica
50		50-52'	0.0 ppm		Same as above
					Base of boring- 52 ft.



Site Id: RPSB-25

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/21/99 - 12/21/99

Total Depth: 52.00'

Remarks: Samples selected for analysis at 4-6', 6-8', 40-42', and 50-52'.

Elevation: 6.49'

Datum: Mean Sea Level

Lagged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		4-6'	56 ppm		Black-stained, fine SAND, loose, heavy hydrocarbon-like odor, wet
		6-8'	74 ppm		Same as above
10		10-12'	105 ppm		Same as above
15		15-17'	157 ppm		Same as above
20		20-22'	144 ppm		Same as above
25		25-27'	125 ppm		Same as above

Location: Rockaway Park	Site Id: RPSB-25
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	31 ppm		Blackish-gray, fine SAND, loose, hydrocarbon-like odor, wet
35		35-37'	25 ppm		Same as above
40		40-42'	0.0 ppm		Gray, fine SAND, w/some clam shells, med dense, wet
45		45-47'	5.0 ppm		Same as above
50		50-52'	0.9 ppm		Gray, fine SAND, w/some clam shells, med dense, wet
52					Base of boring- 52 ft.



Site Id: RPSB-26

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/19/00 - 01/19/00

Total Depth: 40.00'

Remarks: Samples selected for analysis at 4-6', 13-15', and 38-40'.

Elevation: 7.45'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'			0.0 ppm 0.0 ppm		Brown, TOPSOIL/FILL, clinker, loose Brown, fine sandy FILL, clinker, loose Gray-brown, fine sandy FILL, loose
4-8'			0.0 ppm		Gray, same as above Brown, fine-med sandy FILL, clinker, loose
8-12'			1000+ ppm 5.0 ppm 46.5 ppm 139 ppm		Light brown, fine SAND, loose Light gray, fine SAND, loose, wet Gray, fine SAND, slight NAPL-like odor, med loose, wet Block, fine SAND, possible ash stain, NAPL-like odor, med loose, wet
12-16'			60 ppm 130 ppm 205 ppm		Black, fine SAND, tar stained, NAPL-like odor, med loose, wet
16-20'			94 ppm 198 ppm 28 ppm 15.0 ppm		Black, med-coarse SAND, tar stain, slight NAPL-like odor, med loose, wet Black, fine SAND, stain, slight NAPL-like odor, med loose, wet
20-24'			5.0 ppm 12.0 ppm		Black, coarse SAND/GRAVEL, black tar stain, NAPL-like odor, loose, wet Black-gray, fine SAND, slight NAPL-like odor, med loose, wet
24-28'			10.0 ppm 8.2 ppm 3.5 ppm 3.8 ppm		Light gray, fine SAND, med stiff, wet
28-30'			3.6 ppm 4.1 ppm		Gray, fine SAND, slight NAPL-like odor, med loose, moist Gray, med-fine SAND, slight NAPL-like odor, med loose, moist

Location: Rockaway Park	Site Id: RPSB-26
Purpose: Soil Boring	Total Depth: 40.00'
Consulting Firm: Dvirko & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-32'		30-32'	2.0 ppm 2.4 ppm 0.0 ppm		Gray, fine SAND, slight NAPL-like odor, med loose, moist
32-34'		32-34'	0.0 ppm		Gray, fine SAND, med loose, moist
34-36'		34-36'	0.0 ppm		Same as above, wet
36-38'		36-38'	0.0 ppm		Same as above
38-40'		38-40'	0.0 ppm		Gray, fine SAND, trace black stain, med loose
40					Base of boring— 40 ft.
45					
50					
55					
60					
65					



Site Id: RPSB-27

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/16/99 - 12/17/99

Total Depth: 52.00'

Remarks: Samples selected for analysis at 2-4', 10-12', and 40-42'.

Elevation: 8.65'

Datum: Mean Sea Level

Logged By: Poole/Diamond

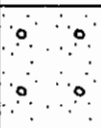
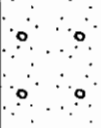
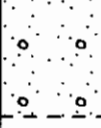
Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-2'			80.8 ppm		Black-brown, coarse SAND/GRAVEL, loose, w/some cobbles, tar, heavy staining & odor, dry to moist
2-4'			172 ppm		Black-brown, med-fine SAND, loose, little gravel & cobbles, staining, odor, moist
4-6'			102 ppm		Gray-black, silty fine SAND, med dense, some med-coarse sand, trace gravel staining & odor, moist to wet
10-12'			219 ppm		Same as above, wet
15-17'			148 ppm		Gray, silty fine SAND, med dense, w/little med sand, light staining, hydrogen sulfide-like odor, wet
20-22'			83.9 ppm		Brown, fine SAND, med dense, w/med & coarse sand, tr. gravel, sheen & odor, wet
25-27'			186 ppm 2000+ ppm 255 ppm 135 ppm		Gray-black, coarse-med SAND, w/fine gravel, shell fragments, odor, sheen, NAPL stains Grayish-black, coarse-v. coarse SAND, odor, sheen Medium gray, coarse-medium SAND, odor

Location: Rockaway Park	Site Id: RPSB-27
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	1911 ppm 599 ppm 718 ppm 155 ppm		Medium gray, coarse-med SAND, w/gravel, heavily stained sand, odor, sheen Dark gray, med-fine, micaceous SAND, sheen, odor Med gray, med-v. coarse, micaceous SAND, odor
35		35-37'	0.0 ppm 0.8 ppm 0.0 ppm		Med dark gray, coarse-medium, micaceous SAND, odor
40		40-42'	0.0 ppm 0.2 ppm 0.9 ppm		Same as above, no odor
45		45-47'	8.6 ppm 1.9 ppm 6.8 ppm		Medium-dark gray, coarse-med, micaceous SAND, slight odor & staining
50		50-52'	1.3 ppm 0.0 ppm		Medium gray, medium-coarse, micaceous SAND
52					Base of boring- 52 ft.

Site Id: RPSB-28

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/29/99 - 12/30/99

Total Depth: 50.00'

Remarks: Samples selected for analysis at 2-4', 4-6', 38-40', and 48-50'.

Elevation: 9.72'

Datum: Mean Sea Level

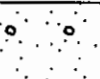
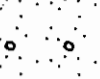
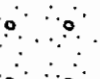
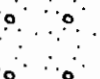
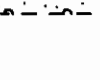
Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
0-2'			0.0 ppm	0.0 ppm		Dark yellowish-brown, silty sandy FILL, gravel
2-4'			0.0 ppm 56.9 ppm 26.2 ppm	0.0 ppm		Grayish-orange/very pale orange, silty sandy FILL Yellow-brn/gray-blk, silty sandy FILL, concrete fragments
4-6'			14.2 ppm 58.0 ppm 64.8 ppm 91.6 ppm 47.2 ppm 149 ppm 93.3 ppm	0.0 ppm		Black, med-fine silty SAND, w/some mica, odor Black, med-fine SAND w/v. coarse SAND, fine-med gravel, odor, staining, wet Block, med-fine SAND, w/v. coarse SAND, fine-med gravel, odor, staining, sheen
6-8'			173 ppm 180 ppm 131 ppm	0.0 ppm		Grayish-black, med-v. coarse SAND, w/some fine-med gravel, staining, odor & sheen
8-10'			83.3 ppm 95.9 ppm 104 ppm	0.0 ppm		Grayish-black/med gray, coarse-v. coarse SAND w/fine-med gravel, shell frags, odor, staining & sheen
10-12'			66.5 ppm	0.0 ppm		Grayish-black, coarse-med SAND w/fine gravel, odor, staining & sheen
12-14'			47.1 ppm 80.4 ppm 9.6 ppm	0.0 ppm 0.3 ppm 3.0 ppm		Grayish-black/dark med gray, coarse-v. coarse SAND w/some mica, trace fine gravel, odor, staining, sheen
14-16'			18.6 ppm 28.2 ppm 13.2 ppm	12.4 ppm 0.4 ppm 1.7 ppm		Gray-black, med-v. coarse SAND w/fine-med gravel, med dense, odor, stain, sheen Med gray, coarse-med SAND
16-18'			51.2 ppm 14.7 ppm	0.6 ppm 0.3 ppm		Gray-black, med-v. coarse SAND w/fine gravel, shells, odor, stain, NAPL, sheen Med gray, coarse-med SAND, some staining
18-20'			80.1 ppm 135 ppm 17.2 ppm	0.0 ppm		Med gray, coarse-v. coarse SAND w/some fine-med gravel, layer of heavy staining w/NAPL, odor & sheen
20-22'			48.6 ppm 44.0 ppm 43.3 ppm 0.2 ppm 11.7 ppm	0.0 ppm		Med gray, coarse-v. coarse & med SAND, w/shell frags, some fine-med gravel heavy staining at top of splitspoon, odor & sheen
22-24'			0.0 ppm 20.3 ppm 0.0 ppm 12.6 ppm 5.0 ppm 12.0 ppm	0.0 ppm		Med gray, coarse-med SAND w/little fine-med gravel, trace shell frags, staining in center of splitspoon, odor & sheen
24-26'						Med gray, v. coarse-coarse SAND w/fine-med gravel, heavy staining in middle of splitspoon, odor & sheen
26-28'						No recovery (28-30')
28-30'						

Location: Rockaway Park					Site Id: RPSB-28	
Purpose: Soil Boring					Total Depth: 50.00'	
Consulting Firm: Dvirka & Bartilucci					Borehole Dia.: 4.25in	
Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30-32'		30-32'	15.4 ppm 5.0 ppm 0.0 ppm	0.0 ppm		Med light gray, med-coarse SAND w/little mica, trace shells, light staining, sheen & odor
32-34'		32-34'	0.0 ppm	0.0 ppm		No recovery (32-34')
34-36'		34-36'	0.0 ppm	0.0 ppm		Med gray, medium-fine, micaceous SAND
36-38'		36-38'	0.0 ppm	0.0 ppm		Same as above
38-40'		38-40'	0.0 ppm	0.0 ppm		Same as above, med dense
40-42'		40-42'	0.0 ppm	0.2 ppm 0.0 ppm		Medium gray, medium-fine, micaceous SAND, trace fine-med gravel
42-44'		42-44'	0.0 ppm	0.0 ppm		Same as above
44-46'		44-46'	0.0 ppm	0.0 ppm		Medium gray, med-coarse, micaceous SAND
46-48'		46-48'	0.0 ppm	0.3 ppm 0.0 ppm		Medium gray, medium, micaceous SAND, medium dense
48-50'		48-50'	0.0 ppm	0.0 ppm		Medium gray, medium-fine micaceous SAND, medium dense
50'						Base of boring- 50 ft.



Site Id: RPSB-29

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/02/00 - 02/03/00

Total Depth: 136.00'

Elevation: 6.49'

Datum: Mean Sea Level

Lagged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Remarks: Samples selected for analysis at 5-7', 7-9', 35-37', 55-57' and 134-136'. Suspected high bias for PID values 35-47'.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	40 ppm 82 ppm 130 ppm		Black, fine SAND, NAPL-stained, loose, hydrocarbon-like odor, sheen, wet
7		7-9'	95 ppm 130 ppm 150 ppm 100 ppm		Black-gray, fine SAND, NAPL-stained, med dense, hydrocarbon-like odor, sheen, wet
9		9-11'	66 ppm 16 ppm 11 ppm		Dark gray, fine SAND, med dense, hydrocarbon-like odor, slight sheen, wet
11		11-13'	6.5 ppm 4.8 ppm 8.0 ppm		Dark gray-black, fine SAND, med dense, hydrocarbon-like odor, slight sheen, wet
13		13-15'	11 ppm 22 ppm 10 ppm 13 ppm 27 ppm 29 ppm 15.5 ppm		Same as above
15		15-17'			Dark gray-black, fine-med SAND, med dense, hydrocarbon-like odor, sheen, wet
17		17-19'	48 ppm 92 ppm 65 ppm		Dark gray-black, fine-coarse SAND w/1/4" fine rounded gravel w/NAPL at 18', med dense, hydrocarbon-like odor, intermittent staining, trace shells, wet
19		19-21'	99 ppm 110 ppm 95 ppm 90 ppm 56 ppm		Black, fine-coarse SAND, NAPL-stained, med dense, heavy hydrocarbon-like odor, w/some shells, wet
21		21-23'	100 ppm 95 ppm 115 ppm 103 ppm 123 ppm 133 ppm		Brown, fine SAND w/shells, med dense, heavy hydrocarbon-like odor, sporadic brown staining, wet
23		23-25'			Brown, fine SAND, NAPL-laden w/rounded gravel, shells, heavy hydrocarbon-like odor
25					H2S = 2.0 ppm at 24'

Location: Rockaway Park				Site Id: RPSB-29	
Purpose: Soil Boring				Total Depth: 136.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	8.0 ppm 8.8 ppm 9.6 ppm		Gray, fine SAND, dense, slight hydrocarbon-like odor, wet
35		35-37'	35 ppm 500 ppm		Light gray, fine SAND, dense, wet
40		40-42'	35 ppm 201 ppm 120 ppm		Same as above H2S = 3 ppm at 40' H2S = 4 ppm at 41'
45		45-47'	61 ppm 79 ppm 12 ppm		Same as above, med dense H2S = 2 ppm
50		50-52'	0.0 ppm 0.0 ppm		Same as above
55		55-57'	160 ppm 100 ppm 150 ppm 75 ppm		Brown, fine-coarse SAND, NAPL stained, w/shells, med dense, heavy hydrocarbon-like odor, wet H2S= 3 ppm at 55', 4 ppm at 55.5' H2S= 5 ppm at 56', 13 ppm at 56.5'
60		60-62'	57 ppm 62 ppm		Brown, fine-coarse SAND, stained, dense, heavy hydrocarbon-like odor, wet
65		65-67'	21 ppm 26 ppm 50 ppm 16 ppm 8.0 ppm		Brown, slightly plastic, micaceous SILT, soft, hydrocarbon/naphthalene-like odor, sheen, wet

Location: Rockaway Park	Site Id: RPSB-29
Purpose: Soil Boring	Total Depth: 136.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		70-72'	20 ppm 16 ppm 200 ppm		Brown, soft SILT, slightly plastic, naphthalene odor, wet Block, sandy SILT, soft, slightly plastic, sheen, naphthalene-like odor
75		75-77'	63 ppm 75 ppm		Brown, fine sandy SILT, soft, slightly plastic, naphthalene odor, slight brown staining, sheen, wet
80		80-82'	37 ppm 150 ppm		Black, fine sandy SILT, NAPL-laden, soft, plastic, sheen, naphthalene-like odor
85		85-87'	27 ppm 23 ppm 54 ppm		Brown, fine SAND, dense, slight naphthalene-like odor, sheen, sporadic brown staining to 86.75', wet, grading to red-brown, fine sandy SILT, soft plastic, w/naphthalene-like odor
90		90-92'	37 ppm 45 ppm		Brown, fine-med SAND, med dense, naphthalene-like odor, wet
95		94-96'	240.9 ppm 231.1 ppm 119 ppm 71.3 ppm		Med gray, medium, micaceous SAND, w/staining, odor & sheen
100		99-101'	192 ppm 14 ppm 3.5 ppm 1.5 ppm		Med dk gray, med-fine micaceous SAND, tr silt, stains, naphthalene-like odor, sheen Moderate brown/lt & drk yellowish-brown, med-fine/med-coarse, micaceous SAND
105		104-106'	61.6 ppm 37.6 ppm 6.8 ppm 3.0 ppm		Dk gray/br-gray, med-fine micaceous SAND, naphthalene-like odor, sheen, lt. stains Drk yellowish-orange/dark yellowish brown, med-v. coarse SAND, trace fine gravel
		109-111'	86.6 ppm 5.9 ppm		Brownish-gray, med-fine, micaceous SAND, odor, sheen

Page 3 of 4

Location: Rockaway Park				Site Id: RPSB-29	
Purpose: Soil Boring				Total Depth: 136.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	PD	Graphic Log	Material Description
			8.6 ppm		Dark yellowish-brown, med-v. coarse SAND
115		114-116'	39.4 ppm 8.2 ppm 1.1 ppm 1.1 ppm		Brownish-gray, med-fine micaceous silty SAND, sheen odor Dark yellowish-brown, fine, micaceous silty SAND w/beds of dark yellowish-brown coarse-v. coarse SAND
120		119-121'	4.3 ppm 3.2 ppm 4.6 ppm 3.5 ppm		Dark yellowish-brown, med-coarse SAND
125		124-126'	17.7 ppm 2.5 ppm 1.5 ppm		Dark yellowish-brown, coarse-v. coarse SAND
130		129-131'	26.5 ppm 36.5 ppm 23.7 ppm 1.5 ppm		Dark yellowish-brown, med-v. coarse SAND w/some fine-med gravel, mica
135		134-136'	62.1 ppm 0.0 ppm 0.0 ppm		Dark yellowish-brown, med-v. coarse SAND, trace fine gravel
					Base of boring- 136 ft.
140					
145					

Site Id: RPSB-30

Location: Rackaway Park

Purpose: Soil Boring

Date(s): 01/31/00 - 02/02/00

Total Depth: 62.00'

Remarks: Samples selected for analysis at 9-11', 19-21', and 60-62'.

Elevation: 7.68'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
						Not sampled from ground surface to depth of 9'
9-11'		135 ppm 60 ppm 100 ppm	0.0 ppm 0.8 ppm 0.7 ppm			Brown, fine SAND, NAPL-laden, loose, heavy hydrocarbon-like odor, wood at 10.25' (possible fill), wet
11-13'		32 ppm 31 ppm 110 ppm	0.0 ppm 0.0 ppm 0.5 ppm			Brown-gray, fine SAND, loose, hydrocarbon-like odor, brown staining, sheen, wet
13-15'		60 ppm 50 ppm 11 ppm	0.0 ppm 0.7 ppm 3.6 ppm			Gray, fine SAND, loose, hydrocarbon-like odor, sheen, brown NAPL, wet (upper 0.5')
15-17'		45 ppm 20 ppm 4.7 ppm	0.6 ppm 0.8 ppm 8.0 ppm			Gray, fine-med SAND, loose, hydrocarbon-like odor, sporadic brown staining, sheen, wet
17-19'		5.5 ppm 3.2 ppm	0.8 ppm 0.6 ppm			Dark gray, fine-med SAND, loose, hydrocarbon-like odor, slight sheen, wet
19-21'		0.0 ppm 0.3 ppm	0.0 ppm 0.5 ppm			Light black, fine-coarse SAND, loose, wet
21-23'		0.0 ppm 0.0 ppm 1.7 ppm	0.0 ppm 0.4 ppm 0.3 ppm			Black, fine-coarse SAND grading to fine, loose-med dense
23-25'		0.0 ppm 0.0 ppm	0.2 ppm 0.0 ppm			Light black SAND, fine grading to fine-coarse SAND, med dense, trace gravel & shells, wet
25-27'		0.0 ppm 0.3 ppm 1.0 ppm	0.0 ppm 0.3 ppm 2.1 ppm			Light black/gray, fine-coarse SAND, trace gravel & shells
27-29'		0.0 ppm	0.2 ppm			Gray, fine SAND, med dense, trace clam shells, wet
29-31'		0.0 ppm	0.0 ppm			Gray, fine SAND, trace gravel, dense, wet

Location: Rockaway Park	Site Id: RPSB-30
Purpose: Soil Boring	Total Depth: 62.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
		31-33'	0.0 ppm 2.2 ppm 17 ppm	0.4 ppm 0.0 ppm 0.0 ppm		Light gray, fine, micaceous SAND, dense, wet
		33-35'	29 ppm 23 ppm 24 ppm	0.0 ppm 0.2 ppm 0.3 ppm		Same as above
3		35-37'	10 ppm 11 ppm 6.5 ppm	0.0 ppm 0.0 ppm 0.0 ppm		Light gray-brown, fine SAND, trace shells, med dense, wet
		37-39'	0.0 ppm 0.5 ppm 0.6 ppm	0.0 ppm 0.3 ppm 0.0 ppm		Same as above, no shells
		39-41'	0.0 ppm 30 ppm	0.0 ppm 0.0 ppm		Gray, fine SAND, dense, wet
4		41-43'	0.0 ppm 20 ppm 10 ppm 11 ppm	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		43-45'	0.0 ppm 0.0 ppm 0.8 ppm	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
5		45-47'	0.0 ppm	0.0 ppm		Same as above
		47-49'	0.0 ppm	0.0 ppm		Same as above
		49-51'				No recovery
9		51-53'	6.5 ppm 1.3 ppm 0.4 ppm	0.0 ppm		Gray, fine SAND, trace shells, dense, wet
		55-57'	0.0 ppm 0.0 ppm	0.0 ppm		Grayish-black, fine-coarse SAND, medium dense, trace shells, wet
5		60-62'	0.0 ppm 0.0 ppm	0.0 ppm		Dark gray, fine-med SAND, trace rounded gravel, shells, medium dense, wet
						Base of boring- 62'

Site Id: RPSB-31A

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/04/00 - 03/10/00

Total Depth: 135.00'

Remarks: Samples selected for analysis at 2-4', 4-6', 35-37' and 133-135'. Sampled to 100' 1/4/00; drilled and sampled to 135' 3/10/00.

Elevation: 6.58'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
2-4'		32.2 ppm	0.0 ppm			Dusky yellow-brown, coarse-fine, sandy FILL w/fine-coarse gravel, some silt, bricks, wood, odor
4-6'		135 ppm	0.0 ppm			Grayish-black, med-v. coarse SAND, saturated w/NAPL, w/some fine-coarse gravel, staining, odor, wet
10-12'		92.9 ppm 150 ppm	0.0 ppm			Dark gray, med-v. coarse SAND, w/some fine-coarse gravel, staining, odor, wet
15-17'		120 ppm 258 ppm 172 ppm	0.0 ppm 0.0 ppm 3.8 ppm			Gray-black, med-coarse SAND, w/fine-coarse gravel, saturated w/NAPL, stain, odor Grayish-black, med-fine SAND, odor, sheen
20-22'		157 ppm 264 ppm 123 ppm	0.0 ppm			Grayish-black/med gray, coarse-v. coarse SAND, w/trace fine gravel, staining, odor
25-27'		123 ppm 25.0 ppm 137 ppm 148 ppm	0.0 ppm			Grayish-brown/med dark gray, coarse-med SAND, w/fine-coarse GRAVEL, shell fragments, zone of NAPL-saturated sand, staining, odor

Location: Rockaway Park					Site Id: RPSB-31A	
Purpose: Soil Boring					Total Depth: 135.00'	
Consulting Firm: Dvirka & Bartilucci					Borehole Dia.: 4.25in	
Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
		30-32'	63.2 ppm 72.0 ppm 107 ppm	0.0 ppm		Med gray, coarse-med SAND, med dense, w/some mica, trace fine-coarse gravel, odor, staining, sheen
5		35-37'	9.4 ppm 1.9 ppm 23.7 ppm	0.0 ppm		Med gray, med-fine SAND, dense, w/some mica, thin zone of staining at top of sampler, odor
10		40-42'				No recovery (40-42')
5		45-47'	182 ppm	0.0 ppm		Med gray, med-fine SAND, w/some mica, shell fragments, staining, odor, zones of NAPL-saturated sand
9		50-52'	65.7 ppm 68.0 ppm	0.0 ppm		Med gray, med-fine SAND, w/some mica, staining, odor
5		55-57'	88.4 ppm 85.2 ppm 42.9 ppm	0.0 ppm		Med dark gray, med-coarse SAND, some NAPL covered fine-coarse gravel, shell frags, staining, odor, saturated sand w/NAPL
10		60-62'	0.3 ppm 2.1 ppm	0.0 ppm		Med dark gray, coarse-med SAND w/some mica, trace shell frags, staining, odor & sheen
5		66-68'	45.6 ppm 31.6 ppm 83.9 ppm 112 ppm	0.0 ppm		Med dark gray, coarse-med SAND, w/some mica, staining, odor Grayish-brown, med-fine SAND saturated w/NAPL, odor, staining

Page 2 of 4

Location: Rockaway Park	Site Id: RPSB-31A
Purpose: Soil Boring	Total Depth: 135.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
70-72'		133 ppm 136 ppm 111 ppm	0.0 ppm			Grayish-black/brownish gray, fine-med, micaceous SAND, saturated w/NAPL, odor, staining, trace fine gravel
75-77'		53.7 ppm 69.1 ppm 38.2 ppm	0.0 ppm			Brown-black, fine-med, micaceous SAND, saturated w/NAPL, odor, stain, sheen
80-82'		5.5 ppm 10.1 ppm 23.6 ppm	0.0 ppm			Med drk gray/bm-gray, coarse-med, micaceous SAND, loose, lt. stain, sheen, odor Grayish-black, med-fine to med SAND, some mica, saturated w/NAPL, odor, sheen, staining
85-87'		57.1 ppm 67.7 ppm	0.0 ppm			Dark gray, med-fine SAND, micaceous, saturated w/NAPL, staining, sheen
88-90'		25.6 ppm 33.3 ppm 19.8 ppm 13.2 ppm	0.0 ppm			Dark gray, medium-fine SAND, tar, naphthalene-like odor, loose, wet
93-95'		54.2 ppm 64.9 ppm 36.3 ppm 8.0 ppm	0.0 ppm			Gray/black/blue, med SAND, tar waste saturated w/NAPL, odor, dense, wet
98-100'		89.1 ppm 55.8 ppm 73.4 ppm 55.1 ppm	0.0 ppm			Gray, medium SAND, tar saturated w/NAPL, strong naphthalene-like odor, sheen, dense, wet
103-105'		44.3 ppm 77.9 ppm 78.3 ppm 75.4 ppm	0.0 ppm			Same as above, but loose
108-110'		19.3 ppm 60.3 ppm 59.8 ppm 34.7 ppm	0.0 ppm			Brownish grey, medium SAND, sheen, naphthalene-like odor, dense, wet

Location: Rockaway Park					Site Id: RPSB-31A	
Purpose: Soil Boring					Total Depth: 135.00'	
Consulting Firm: Dvirka & Bartilucci					Borehole Dia.: 4.25in	
Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
15		113-115	23.7 ppm 31.8 ppm 34.0 ppm 29.8 ppm	0.0 ppm		Brown-gray, medium SAND, naphthalene/NAPL-like odor, dense, wet
12		118-120	29.5 ppm 23.8 ppm 14.5 ppm 3.2 ppm	0.0 ppm		Same as above
15		123-125	23.9 ppm 14.5 ppm 7.9 ppm 6.0 ppm	0.0 ppm		Brown, medium SAND, mild odor, medium dense, wet
13		128-130	31.7 ppm 30.2 ppm 0.7 ppm 0.9 ppm	0.0 ppm		Grey, medium SAND, odor, dense, moist (possible heave?) Brown medium SAND, medium dense, wet
15		133-135	0.2 ppm 0.1 ppm	0.0 ppm		Brown, medium-coarse SAND, loose, wet
15						Base of boring - 135 ft.
14						
15						

Site Id: RPSB-31B

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/13/00 - 01/13/00

Total Depth: 50.00'

Remarks: Samples selected for analysis at 4-6', 6-8', 22-24', and 48-50'.

Elevation: 8.25'

Datum: Mean Sea Level

Logged By: Jeff Diomond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
2-4'		0.0 ppm	0.0 ppm			Grayish-black, silty med-coarse SAND, loose, w/fine-coarse gravel
4-6'		0.0 ppm	0.0 ppm			Grayish-orange/pale orange, med-coarse to med SAND, loose
6-8'		23.7 ppm 12.8 ppm 0.0 ppm	10.3 ppm 9.8 ppm 1.9 ppm			Very lt. gray, med SAND, loose, some mica to brown, med-fine SAND, loose, w/mica
8-10'		36.5 ppm 20.1 ppm 0.0 ppm	0.0 ppm 0.3 ppm 0.0 ppm			Moderate brown, med SAND, w/some SILT
10-12'		0.0 ppm	0.0 ppm			Pale brown/moderate yellowish-brown, med-coarse SAND, some mica, staining, odor
12-14'		35.7 ppm 0.0 ppm 0.0 ppm	0.0 ppm 0.0 ppm 0.3 ppm			Drk gray, med-coarse SAND w/clay, mica, wet; med-v. coarse SAND, odor, shells
14-16'		0.0 ppm	0.0 ppm			Med drk gray, med-v. coarse SAND, med dense, w/little gravel, stains, odor, wet
16-18'		0.0 ppm	0.0 ppm			Dark gray, coarse-v. coarse SAND, w/some fine gravel, odor
18-20'		0.0 ppm	0.0 ppm			Med dark gray, coarse-v. coarse SAND w/fine-coarse gravel, slight odor
20-22'		48.9 ppm 203 ppm 353 ppm	0.0 ppm 2.2 ppm 0.0 ppm			Med gray, coarse-med SAND, med dense, w/fine-coarse gravel, odor
22-24'		218 ppm 177 ppm	0.0 ppm			Med gray, coarse-med SAND, med dense, w/trace fine gravel, wet
24-26'		2000+ ppm 2000+ ppm	0.0 ppm			Med light gray/med dark gray, coarse-med SAND, some fine gravel, med dense
26-28'		184 ppm 99.7 ppm 644 ppm	0.0 ppm			Med gray/med drk gray, coarse-med SAND, some v. coarse sand, fine-coarse gravel, med dense, wet
28-30'		24.8 ppm 21.3 ppm 62.3 ppm	0.0 ppm 0.3 ppm			Med dark gray, coarse-v. coarse SAND, med dense, little shells, odor, trace gravel
						Med gray, coarse-med SAND, med dense, trace shell fragments, slight odor
						Med dark gray, coarse-v. coarse SAND, med dense, some fine gravel, trace shell fragments, slight odor
						Med dark-med gray, coarse-v. coarse SAND, w/fine gravel
						Med gray, med SAND, med dense, w/little mica, brackish odor
						Med gray, v. coarse-med SAND, med dense, w/fine gravel, thin bed of gray silty clay
						Med gray, med SAND, med dense, w/some mica

Location: Rockaway Park	Site Id: RPSB-31B
Purpose: Soil Boring	Total Depth: 50.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
		30-32'	25.8 ppm 52.8 ppm 12.8 ppm 11.2 ppm 47.6 ppm 30.4 ppm	0.0 ppm		Med gray, med-coarse SAND, med dense, w/some mica, trace v. coarse sand/fine gravel
		32-34'		0.0 ppm		Same as above, slight odor
5		34-36'	30.9 ppm 13.7 ppm 16.6 ppm	0.0 ppm		Med gray, medium, micaceous SAND, med dense
		36-38'	0.0 ppm	0.0 ppm		Same as above, some mica
		38-40'	0.0 ppm	0.0 ppm		Same as above
4		40-42'	0.0 ppm	0.0 ppm		Same as above
		42-44'	0.0 ppm	0.0 ppm		Same as above
		44-46'	0.0 ppm	0.0 ppm		Same as above
6		46-48'	0.0 ppm	0.0 ppm		Same as above, micaceous
		48-50'	0.0 ppm	0.0 ppm		Med gray, medium, micaceous SAND, med dense, w/very thin lens of dark gray micaceous silty clay
5						Base of boring- 50 ft.
5						
4						
6						



Site Id: RPSB-32

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/21/99 - 12/21/99

Total Depth: 42.00'

Remarks: Samples selected for analysis at 2-4', 25-27', & 40-42'

Elevation: 6.62'

Datum: Mean Sea Level

Logged By: Jeff Diamond

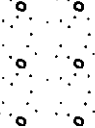
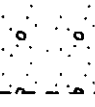
Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
2-4'		2-4'	0.0 ppm		Pale & dusky brown, med-fine SAND, w/trace fine gravel
4-6'		4-6'	0.0 ppm 40.0 ppm 88.1 ppm		Grayish-brown, med-coarse SAND, w/some fine gravel, mica Grayish-brown/grayish-black, med-fine SAND, w/wood frogs, odor & sheen, wet
10-12'		10-12'	85.9 ppm 64.3 ppm 22.3 ppm		Dark gray, coarse-med SAND, w/some coal tar, mica, odor & sheen
15-17'		15-17'	77.1 ppm 9.9 ppm		Med dark gray, coarse-med SAND, w/some mica, odor Grayish-black, coarse-v. coarse SAND, w/some fine gravel, odor
20-22'		20-22'	7.7 ppm 4.3 ppm 1.4 ppm		Med gray, coarse-v. coarse SAND, w/some mica, fine-coarse gravel, slight odor
25-27'		25-27'	2.8 ppm 1.2 ppm 0.1 ppm		Med gray, med-v. coarse SAND w/fine-coarse gravel, shell fragments Med gray, med-coarse, micaceous SAND

Location: Rockaway Park	Site Id: RPSB-32
Purpose: Soil Boring	Total Depth: 42.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	0.0 ppm		Med gray, med-coarse, micaceous SAND
35		35-37'	7.1 ppm 2.1 ppm 1.3 ppm		Med gray, coarse-med, micaceous SAND, trace fine gravel
40		40-42'	2.9 ppm 1.4 ppm 0.0 ppm		Same as above, trace shell fragments, very slight odor
42					Base of boring - 42 ft.
45					
50					
55					
60					
65					

Site Id: RPSB-33

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/22/99 - 12/22/99

Total Depth: 47.00'

Remarks: Samples selected for analysis at 2-4', 15-17', and 45-47'.

Elevation: 5.78'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-2'		0-2'	0.0 ppm		Brown, fine sandy, silty FILL, loose
2-4'		2-4'	0.0 ppm		FILL- brick, black clinker in brown silty matrix, loose
4-6'		4-6'	20.0 ppm 18.0 ppm 25.0 ppm		FILL- black clinker in black/orange-brown silty matrix, loose FILL- crushed rock, angular, loose, hydrocarbon-like odor (upper 3/4'), wet Brown, fine, sandy FILL, loose, hydrocarbon-like odor, wet
10-12'		10-12'	118 ppm 120 ppm 40.0 ppm 100 ppm		Gray, fine, sandy FILL, loose, some crushed rock, hydrocarbon-like odor, sporadic staining, wet
15-17'		15-17'	40.0 ppm 55.0 ppm 85.0 ppm 60.0 ppm		Black-stained, fine-coarse, sandy FILL, w/some clinker, heavy hydrocarbon-like odor, wet
20-22'		20-22'	57.0 ppm 100 ppm 80.0 ppm 56.0 ppm		Black-stained, fine-coarse SAND, loose, w/some clam shells, heavy hydrocarbon-like odor, wet
25-27'		25-27'	30.0 ppm 22.0 ppm 23.0 ppm 15.0 ppm		Gray-black, fine-med SAND, med dense, heavy hydrocarbon-like odor, wet

Location: Rockaway Park	Site Id: RPSB-33
Purpose: Soil Boring	Total Depth: 47.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	15.0 ppm 13.0 ppm		Blackish-gray, fine SAND, med dense, hydrocarbon-like odor, wet
35		35-37'	4.6 ppm 2.2 ppm 8.0 ppm		Gray, fine SAND, med dense, slight hydrocarbon-like odor, wet
40		40-42'			No recovery (40-42')
45		45-47'	0.4 ppm 2.6 ppm 6.0 ppm		Gray, fine SAND, med dense, no odor, wet
					Base of boring- 47 ft.

Site Id: RPSB-34

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/29/99 - 12/30/99

Total Depth: 82.00'

Remarks: Samples selected for analysis at 8-10', 40-42', & 80-82'

Elevation: 8.64'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

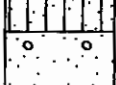
Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
2-4'					FILL, concrete No recovery (2-4')
4-6'					No recovery (4-6')
6-8'					Hydrocarbon-like odor from empty sampler
8-10'			200 ppm 200 ppm 200 ppm		Gray, fine-med SAND, loose, hydrocarbon-like odor, dark gray staining, wet
10-12'			18.0 ppm 16.0 ppm 18.0 ppm		Same as above, sporadic brown staining, slight sheen
12-14'			40.0 ppm 11.0 ppm 8.0 ppm		Dark gray, fine-coarse SAND, med dense, hydrocarbon-like odor, slight sheen, wet
14-16'			10.0 ppm 15.0 ppm 35.0 ppm 50.0 ppm 10.0 ppm		Blackish-gray, fine-coarse SAND, loose, hydrocarbon-like odor, sporadic brown staining, wet
16-18'			5.0 ppm 4.0 ppm 4.7 ppm		Gray, fine-coarse SAND, med dense, slight hydrocarbon-like odor, clam shells, trace gravel, wet
18-20'			5.1 ppm 4.7 ppm 4.6 ppm		Dark gray, fine-coarse SAND, med dense, some subrounded-subangular gravel clam shells, wet
20-22'			6.0 ppm 2.1 ppm 1.1 ppm		Dark gray, coarse SAND, w/subrounded-subangular gravel, some clam shells, black staining at 21'
22-24'			0.9 ppm 0.5 ppm 1.7 ppm 0.9 ppm		Dark gray, coarse SAND, med dense, some gravel & clam shells (top 4"), wet Gray, fine, micaceous SAND, med dense, some clam shells (bottom 8"), wet
24-26'			1.6 ppm 0.9 ppm 0.2 ppm 2.3 ppm		Gray, fine, micaceous SAND, dense, w/clam shells, wet Gray-blk, fine-coarse GRAVEL, loose, slight odor, brown stains, some clam shells

Location: Rockaway Park	Site Id: RPSB-34
Purpose: Soil Boring	Total Depth: 82.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30-32'	27.0 ppm 18.0 ppm 29.0 ppm	o o	Gray, fine SAND, med dense, sporadic brown staining, hydrocarbon-like odor
35		35-37'		o o	No recovery (35-37')
		37-39'	33.0 ppm 16.0 ppm 170 ppm	o o	Gray, fine SAND, medium dense, hydrocarbon-like odor, sporadic brown staining, wet
40		40-42'	57.8 ppm 24.0 ppm 21.0 ppm 63.0 ppm	o o	Same as above
45		45-47'		o o	No recovery (45-47')
50		50-52'	26.0 ppm 0.5 ppm 3.2 ppm	o o	Gray, fine SAND, med dense, slight sheen & hydrocarbon-like odor, wet
55		55-57'	52.0 ppm 150 ppm 50.0 ppm 100 ppm	o o	Gray, fine SAND, med dense, hydrocarbon-like odor, sporadic brown staining, wet
60		60-62'	17.0 ppm 44.0 ppm 60.0 ppm 80.0 ppm	o o	Gray, fine-coarse SAND, w/some fine gravel, med dense, sporadic brown staining, wet
65		65-67'	33.0 ppm 5.6 ppm 1.4 ppm 3.3 ppm	o o	Some as above, hydrocarbon odor Gray, fine, micaceous sandy SILT, dense, slight hydrocarbon-like odor, wet

Location: Rockaway Park	Site Id: RPSB-34
Purpose: Soil Boring	Total Depth: 82.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
70		70-72'	5.1 ppm		Dark gray, sandy SILT, soft dense, wet
75		75-77'	0.0 ppm		Brown, sandy SILT, soft, dense, wet
80		80-82'	0.5 ppm 0.8 ppm 1.6 ppm		Brown, fine, micaceous SAND, dense, wet
82					Base of boring - 82 ft.
85					
90					
95					
100					
105					

Site Id: RPSB-35

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/03/00 - 01/04/00

Total Depth: 82.00'

Remarks: Samples selected for analysis at 0-2', 10-12', 60-62', and 80-82'.

Elevation: 8.97'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-2'			17.0 ppm 0.9 ppm 1.1 ppm 11.0 ppm		Brown, FILL material-wood
2-4'					Brown, silty sandy FILL, fine, loose
4-6'			55.0 ppm		Black, FILL-slag material in silty brown-black matrix, some wood, loose
6-8'					Same as above
10-12'			250 ppm 500 ppm 700 ppm 700 ppm		Gray, fine, sandy FILL, loose, heavy hydrocarbon-like odor, sporadic staining, green antifreeze-like product, wet
15-17'			610 ppm 730 ppm 890 ppm		Brown, fine SAND, NAPL-stained, med dense, heavy hydrocarbon-like odor, sheen, wet
20-22'			339 ppm 260 ppm		Brown, fine SAND, stained, med dense, heavy hydrocarbon-like odor, wet Brown, fine-coarse SAND, stained, w/subround gravel, heavy hydrocarbon-like odor, sheen
25-27'			250 ppm 460 ppm 400 ppm		Brown, fine SAND, stained, med dense, heavy hydrocarbon-like odor, sheen, wet

Location: Rockaway Park	Site Id: RPSB-35
Purpose: Soil Boring	Total Depth: 82.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	1.9 ppm 12.8 ppm 7.0 ppm		Gray, fine SAND, dense, slight hydrocarbon-like odor, wet
35		35-37'	8.0 ppm 14.0 ppm 50.0 ppm		Same as above, med dense
40		40-42'	17.0 ppm 7.9 ppm 22.3 ppm		Dark gray, fine SAND, dense, slight hydrocarbon-like odor, wet
45		45-47'	14.0 ppm 18.0 ppm 22.0 ppm		Same as above
50		50-52'	3.5 ppm		Same as above, slight solvent-like odor
55		55-57'	14.7 ppm		Dark gray, fine-coarse SAND, dense, hydrogen sulfide-like odor, wet
60		60-62'	150 ppm 160 ppm 20.0 ppm 14.0 ppm		Dark gray, fine-coarse SAND, w/subrounded gravel, clam shells, dense, moderate brown staining, hydrocarbon-like odor
65		65-67'	51.0 ppm 150 ppm 170 ppm 170 ppm		Brown-stained, fine SAND, w/clam shells, dense, heavy hydrocarbon-like odor, sheen, wet

Location: Rockaway Park	Site Id: RPSB-35
Purpose: Soil Boring	Total Depth: 82.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
70		70-72'	35.0 ppm 15.0 ppm 9.0 ppm 8.0 ppm		Brown, micaceous SILT, slightly plastic, slight hydrocarbon-like odor & sheen, wet
75		75-77'	1.5 ppm 2.0 ppm 0.0 ppm 1.5 ppm		Brown, fine, micaceous SAND, med dense, wet
80		80-82'	4.5 ppm 1.0 ppm 3.2 ppm		Same as above
					Base of boring-- 82 ft.
85					
90					
95					
100					
105					



Site Id: RPSB-36

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/03/00 - 01/04/00

Total Depth: 57.00'

Remarks: Samples selected for analysis at 5-7', 7-9', 35-37', and 55-57'.

Elevation: 9.12'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
						Not sampled (0-5')
5-7'		32.7 ppm 58.0 ppm 146 ppm	0.0 ppm 0.0 ppm 0.2 ppm			Grayish-black, med-v. coarse SAND, w/some silt, loose, saturated w/NAPL, staining, odor
7-9'		65.2 ppm 119 ppm 57.9 ppm 67.1 ppm	7.9 ppm 4.2 ppm 26.2 ppm 8.1 ppm			Grayish-black, med-coarse SAND, loose, w/trace of v. coarse sand, medium rounded gravel saturated w/NAPL, odor, sheen, wet
10-12'		10.1 ppm 81.8 ppm 113 ppm	0.0 ppm 2.3 ppm 2.7 ppm			Med dark gray-dark gray, med-coarse SAND, loose, w/fine-coarse gravel, odor, sheen, light staining
15-17'		41.1 ppm 33.8 ppm 60.6 ppm	0.0 ppm 8.6 ppm 0.8 ppm			Grayish-black, med-fine SAND, some v. coarse SAND, mica, odor, sheen, staining, interbedded w/grayish black v. coarse-coarse SAND, fine gravel, odor, sheen, staining
20-22'		157 ppm 9.8 ppm	0.3 ppm 0.7 ppm 0.9 ppm			Gray-black, med-coarse to v. coarse SAND, odor, sheen, saturated w/NAPL Dark med gray, coarse-med SAND, med dense, sheen & odor
25-27'		45.4 ppm 55.6 ppm	0.0 ppm			Grayish-black, coarse-v. coarse SAND, w/some med sand, fine-coarse gravel, shell fragments, odor, sheen, saturated w/NAPL

Location: Rockaway Park	Site Id: RPSB-36
Purpose: Soil Boring	Total Depth: 57.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
		30-32'	16.8 ppm 15.3 ppm 3.6 ppm	0.0 ppm 0.0 ppm 0.7 ppm		Med light gray, med-fine, micaceous SAND, slight sheen, odor, med dense
35		35-37'	12.3 ppm 1.5 ppm 1.3 ppm	0.0 ppm 0.0 ppm 0.3 ppm		Med gray, med-coarse SAND w/some mica, trace shell fragments, slight odor
40		40-42'	1.6 ppm 1.3 ppm	0.4 ppm 0.4 ppm		Med gray, med-coarse, micaceous SAND, trace shell fragments
45		45-47'	2.0 ppm 1.5 ppm 1.2 ppm 1.6 ppm	0.2 ppm 0.0 ppm 1.4 ppm 3.8 ppm		Medium gray, medium-fine SAND, w/trace shell fragments, some mica, slight odor
50		50-52'	0.0 ppm 4.4 ppm	0.0 ppm		Med light gray, med-coarse SAND, some mica, trace shell fragments, med dense
55		55-57'	0.0 ppm	0.0 ppm 0.0 ppm 2.8 ppm		Medium gray, medium-coarse, micaceous SAND, medium dense, w/trace fine-coarse rounded gravel, and shell fragments
						Base of boring - 57 ft.

Site Id: RPSB-37

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/11/00 - 01/12/00

Total Depth: 52.00'

Remarks: Samples selected for analysis at 10-12', 35-37' & 50-52'

Elevation: 8.84'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
2-4'						No recovery (2-4')
4-6'						Brown, fine sandy SILT, soft, some fine-coarse rounded gravel, moist
6-8'						Blackish-brown, fine sandy SILT, soft, moist
10-12'			54.0 ppm 115 ppm 100 ppm 67.0 ppm	0.5 ppm 0.3 ppm 0.7 ppm 0.7 ppm		Gray, fine-med SAND, loose, heavy hydrocarbon-like odor, sporadic brown stains, wood at 10.75' (H2S = 1 at 11.5'), wet
15-17'			54.0 ppm 50.0 ppm 119 ppm 6.6 ppm	0.0 ppm 0.0 ppm 6.6 ppm 2.3 ppm		Dark gray, fine SAND, med dense, hydrocarbon-like odor (top 1') to hydrogen sulfide-like odor (H2S = 1 at 16.0'), wet
20-22'						No recovery (20-22')
25-27'			1.2 ppm 0.8 ppm 1.2 ppm 0.4 ppm	0.0 ppm		Dark gray, fine-coarse SAND, dense, some clam shells, wet

Location: Rockaway Park					Site Id: RPSB-37	
Purpose: Soil Boring					Total Depth: 52.00'	
Consulting Firm: Dvirka & Bartilucci					Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30-32'		30-32'	38.0 ppm 7.0 ppm 3.5 ppm	0.0 ppm		Dark gray, fine SAND, med dense, slight hydrocarbon-like odor, sporadic brown staining, wet
35-37'		35-37'	0.6 ppm 0.8 ppm 0.4 ppm	0.0 ppm		Same as above, no odor or staining
40-42'		40-42'	1.4 ppm 0.0 ppm 0.6 ppm	0.0 ppm		Gray, fine SAND, med dense, wet
45-47'		45-47'	0.0 ppm	0.0 ppm		Same as above
50-52'		50-52'	0.0 ppm	0.0 ppm		Same as above
						Base of boring- 52 ft.
55						
60						
65						

Site Id: RPSB-38

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/13/00 - 01/13/00

Total Depth: 52.00'

Remarks: Samples selected for analysis at 4-6', 10-12', 30-32', and 50-52'.

Elevation: 9.15'

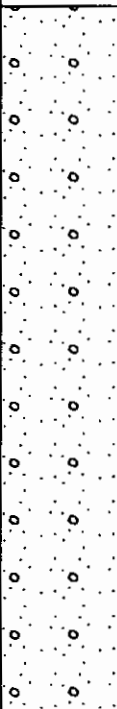
Datum: Mean Sea Level

Logged By: John Schafer

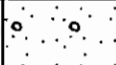
Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
2-4'		2-4'	0.0 ppm	0.0 ppm		Black, FILL-vesicular slag, fine-coarse, loose
4-6'		4-6'	0.0 ppm	0.0 ppm		Same as above
6-8'		6-8'		0.0 ppm		No recovery (6-8'), hydrocarbon-like odor in sampler
10-12'		10-12'	100 ppm 70.0 ppm 50.0 ppm	0.0 ppm		Light brown, fine-med SAND, loose, hydrocarbon-like odor, sheen, wet
15-17'		15-17'	18.0 ppm 14.0 ppm	0.0 ppm		Dark gray, fine-med SAND, loose, slight hydrocarbon-like odor, wet
20-22'		20-22'	0.0 ppm 11.6 ppm 4.0 ppm	0.0 ppm		Same as above, w/trace coarse sand
25-27'		25-27'	2.3 ppm 10.6 ppm 18.5 ppm 10.4 ppm	0.0 ppm		Dark gray-black, fine-coarse SAND, w/rounded gravel, loose, slight hydrocarbon-like odor, wet

Location: Rockaway Park	Site Id: RPSB-38
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30		30-32'	0.0 ppm	0.0 ppm		Dark gray, fine SAND, med dense, wet
35		35-37'	0.0 ppm	0.0 ppm		Dark gray, fine SAND, loose, hydrogen sulfide-like odor, wet
40		40-42'	0.0 ppm	0.0 ppm		Same as above
45		45-47'	0.0 ppm	0.0 ppm		Same as above
50		50-52'	0.0 ppm	0.0 ppm		Same as above
						Base of boring- 52 ft.

Site Id: RPSB-39

Location: Rockaway Park

Purpose: Sail Boring

Date(s): 02/01/00 - 02/01/00

Total Depth: 44.00'

Remarks: Samples selected for analysis at 2-4', 25-27', and 42-44'.

Elevation: 5.01'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
2-4'		2-4'	865 ppm 1981 ppm 2000+ ppm	0.0 ppm 0.0 ppm 3.8 ppm		Dusky yellow-brown, med-coarse silty SAND, little mica, trace fine gravel, odor Pale yellow-brown, medium-coarse SAND, odor, loose, w/thin bed dusky yellow-brown silty-sandy clay
5-7'		5-7'	2000+ ppm 1792 ppm 2000+ ppm	0.0 ppm 0.7 ppm 0.9 ppm		Dusky yellow-brown, medium SAND w/some silt, mica, odor Pale yellowish-brown, medium SAND, loose, w/some mica, wet
10-12'		10-12'	537 ppm 2000+ ppm 509 ppm 319 ppm	0.0 ppm 0.3 ppm 0.0 ppm 0.0 ppm		Pale yellowish-brown, medium-coarse SAND w/some mica Med gray, medium-coarse SAND, loose, hydrogen sulfide-like odor
15-17'		15-17'	97.4 ppm 195 ppm	0.0 ppm		Med dark gray, coarse-medium SAND, w/fine-coarse, rounded gravel
20-22'		20-22'	2.1 ppm 4.9 ppm 7.4 ppm 2.9 ppm	0.0 ppm		Dark gray-medium dark gray, v. coarse-med SAND, w/fine-coarse rounded gravel, shells
25-27'		25-27'	0.0 ppm 0.1 ppm 1.2 ppm	0.0 ppm		Medium gray, medium SAND, medium dense, w/some mica & shells

Location: Rockaway Park	Site Id: RPSB-39
Purpose: Soil Boring	Total Depth: 44.00'
Consulting Firm: Dvirka & Bortilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30-32'		30-32'	1.5 ppm 0.0 ppm 0.4 ppm 0.3 ppm	0.0 ppm		Medium gray, med-fine, micaceous SAND, med dense
35-37'		35-37'	0.0 ppm	0.0 ppm		Medium dark gray, med SAND, w/some mica
40-42'		40-42'				No recovery (40'-42')
42-44'		42-44'	5.6 ppm 0.0 ppm	0.0 ppm		Medium gray, medium SAND, w/some mica, medium dense
44 ft						Base of boring - 44 ft.



Site Id: RPSB-40

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/20/00 - 01/20/00

Total Depth: 40.00'

Remarks: Samples selected for analysis at 19-21', 26-28', & 38-40'

Elevation: 7.79'

Datum: Mean Sea Level

Logged By: Ian Davidson

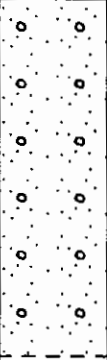
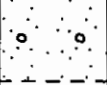
Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	1.0 ppm		Light brown, fine SAND, w/NAPL, loose
10		12-14'	303 ppm 330 ppm		Tan, fine SAND, w/NAPL, clam shells, trace tar, med loose, wet
15		19-21'	8.3 ppm 10.5 ppm		Brown, coarse SAND, w/tar/NAPL stain, NAPL-like odor, loose, wet Dark brown, fine SAND, trace tar/NAPL, med loose, wet
20		26-28'	18.2 ppm 2.0 ppm		Light gray, fine SAND, w/slight NAPL-like odor, med loose, wet
25					
30					
35					
40					

Location: Rockaway Park	Site Id: RPSB-40
Purpose: Soil Boring	Total Depth: 40.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
33		33-35'	2.0 ppm 5.0 ppm		Black-gray, fine SAND, w/clam shells, loose, trace tar stain, naphthalene-like odor, wet Gray, fine SAND, w/slight NAPL, trace tar stains, loose
38		38-40'	0.0 ppm 1.9 ppm		Gray, fine SAND, loose, wet Base of boring ~ 40 ft.
40					
45					
50					
55					
60					
65					

Site Id: RPSB-41

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/15/99 - 12/16/99

Total Depth: 47.00'

Remarks: Samples selected for analysis at 7-9', 9-11', and 45-47'.

Elevation: 10.02'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					FILL, concrete
3-5'		0.0 ppm 0.0 ppm 35.2 ppm			Grayish-brown, coarse-med SAND w/some fine gravel & tar
5-7'		0.0 ppm 83.4 ppm 113 ppm			Grayish-yellow, med-fine SAND w/tar fragments
7-9'		0.0 ppm 132 ppm 215 ppm			Gray-yellow/gray-brown, med-fine/med-coarse SAND, w/tar fragments, slight odor
9-11'		2000+ ppm 1038 ppm 94.6 ppm			Yellowish-gray/dark gray, fine-med SAND, w/little silt, odor
11-13'		136 ppm 1588 ppm			Black, coarse-med SAND, w/odor, sheen & staining
13-15'		2000+ ppm 1846 ppm			Med dark gray, med-coarse SAND, w/staining & odor
15-17'		2000+ ppm 2000+ ppm			Grayish-black, med-coarse SAND, w/trace med rounded gravel, odor, staining
17-19'		2000+ ppm 115 ppm			Med drk gray/med lt. gray, med-coarse, micaceous SAND, w/odor, staining
19-21'		231 ppm 29.2 ppm			Med light gray, coarse-v. coarse SAND w/some mica, light staining, sheen & odor, thin layer of heavy staining at bottom of spoon
21-23'		38.1 ppm 2000+ ppm			Med gray/gray-blk, coarse-v. coarse SAND, w/heavy staining, odor, sheen, fine gravel
23-25'		1529 ppm 2000+ ppm 900 ppm			Lt. med gray, coarse-med SAND w/fine-coarse gravel, some heavy staining, odor
25-27'		2000+ ppm 245 ppm			Dark med gray, coarse-med SAND, micaceous, staining, odor, sheen
27-29'		190 ppm 259 ppm 15.7 ppm			Med gray, coarse-v. coarse SAND, w/some fine gravel, mica, lt. staining, odor, sheen
29-31'		133 ppm 16.4 ppm 24.8 ppm			Grayish-black, coarse-v. coarse SAND, some mica, slight sheen & odor
					Gray-black, coarse-v. coarse, micaceous SAND, w/fine-coarse gravel, odor, sheen
					Dark med gray, coarse-v. coarse SAND w/fine-coarse gravel, shell fragments, odor, heavy staining & sheen
					Same as above
					Med gray, coarse-v. coarse, micaceous SAND, w/odor & sheen
					Gray-black, v. coarse-med SAND w/coarse gravel, heavy stains, NAPL, odor, sheen
					Med light gray, coarse-med, micaceous SAND, w/odor & sheen
					Some as above, w/shell fragments
					Med lt. gray, coarse-v. coarse SAND w/shell frags, fine-coarse gravel, slight odor
					Same as above, w/shells & sheen

Location: Rockaway Park				Site Id: RPSB-41	
Purpose: Soil Boring				Total Depth: 47.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 4.25in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
31		31-33'	215 ppm 17.6 ppm		Med gray, coarse-med, micaceous SAND, slight odor
33		33-35'	117 ppm 13.0 ppm 17.9 ppm		Same as above, w/shell fragments & some fine-coarse gravel
35		35-37'	636 ppm 515 ppm		Same as above
37		37-39	89.3 ppm 0.0 ppm		Same as above, w/shell
39		39-41	0.0 ppm		Med gray, med-coarse, micaceous SAND
41					Same as above, some shell fragments
45		45-47	0.0 ppm		Same as above
					Base of boring- 47 ft.
50					
55					
60					
65					

Site Id: RPSB-42

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/19/00 - 01/27/00

Total Depth: 126.00'

Remarks: Samples selected for analysis at 5-7', 10-12', 35-37', and 124-126'.

Elevation: 10.78'

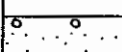
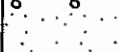
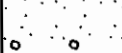
Datum: Mean Sea Level

Logged By: John Schofer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
2-4'		2-4'	0.4 ppm 0.2 ppm 0.2 ppm	0.0 ppm		Brown, fine sandy silty FILL, soft, w/fragments of vesicular slag
5-7'		5-7'	19.0 ppm 23.0 ppm 60.0 ppm	0.0 ppm 0.2 ppm		Gray, fine SAND, loose, slight hydrocarbon-like odor
10-12'		10-12'	80.0 ppm 170 ppm 115 ppm	0.0 ppm 2.6 ppm 2.8 ppm		Same as above, wet
15-17'		15-17'	24.0 ppm 13.0 ppm 13.0 ppm 8.0 ppm	0.0 ppm 0.0 ppm 0.2 ppm		Gray, fine-med SAND, med dense, w/shell fragments, slight hydrocarbon-like odor, wet
20-22'		20-22'	7.3 ppm 10.0 ppm 4.0 ppm	0.0 ppm		Same as above
25-27'		25-27'	0.0 ppm 1.5 ppm 0.0 ppm	0.0 ppm		Light gray/light brown, med, micaceous SAND, w/gravel, trace shell fragments

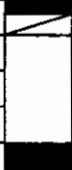
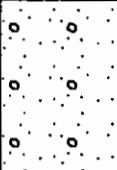
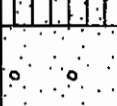
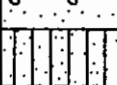
Location: Rockaway Park	Site Id: RPSB-42
Purpose: Soil Boring	Total Depth: 126.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30-32'		54.1 ppm 16.2 ppm 2.1 ppm 6.0 ppm	0.0 ppm 3.0 ppm 0.0 ppm			Med gray, coarse-v. coarse SAND, med dense, w/fine-coarse gravel, shells, staining, odor, sheen
35-37'		2.1 ppm 10.4 ppm 5.2 ppm	0.0 ppm			Dark gray, fine-med SAND, med dense, slight odor, sheen
40-42'		33.9 ppm 28.5 ppm 18.1 ppm 14.6 ppm	0.0 ppm			Med gray, med, micaceous SAND, med dense, slight odor
45-47'		9.7 ppm 9.2 ppm 7.3 ppm 0.0 ppm	0.0 ppm			Same as above
50-52'		45.1 ppm 0.6 ppm 45.8 ppm 50.1 ppm	0.0 ppm 0.0 ppm 2.2 ppm 7.6 ppm			Med gray, fine-med, micaceous SAND, med dense, odor, sheen, heavy layered staining at bottom of spoon
55-57'		71.2 ppm 69.5 ppm 81.3 ppm 143 ppm	0.0 ppm 0.0 ppm 50+ ppm 50+ ppm			Med gray/brownish-black, med-fine, micaceous SAND, w/stained zones, odor, sheen, saturated w/NAPL H2S = 8 ppm at 56' H2S = 12 ppm at 56.5'
60-62'		73.0 ppm 51.0 ppm 37.0 ppm	0.4 ppm 0.6 ppm 50+ ppm			Gray, fine-coarse SAND, med dense, hydrocarbon-like odor, staining, brown NAPL, wet
65-67'		18.0 ppm 40.0 ppm 12.0 ppm 16.0 ppm	0.8 ppm 0.6 ppm 1.1 ppm 8.0 ppm			Same as above, dense, intermittent staining

Location: Rockaway Park	Site Id: RPSB-42
Purpose: Soil Boring	Total Depth: 126.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
70-72'		12 ppm 1.6 ppm				Dark gray, fine SAND, med dense, hydrocarbon-like odor, sporadic brown stains, wet
75-77'		1.2 ppm 0.6 ppm 0.0 ppm	0.0 ppm			Brown, fine, micaceous sandy SILT, dense, wet
82-84'		200 ppm 130 ppm	21.0 ppm 0.6 ppm			Black, silty SAND, NAPL-laden, loose, hydrocarbon-like odor
84-86'		25.6 ppm 11.6 ppm 29.9 ppm 2.4 ppm	0.0 ppm			Med gray, med-fine, micaceous SAND, w/sheen, slight odor Groyish-brown, med, micaceous SAND, w/sheen, slight odor
89-91'		0.0 ppm	0.0 ppm			Dark yellowish-brown, med-fine, micaceous SAND w/some mica, oil stains, grading to fine silty SAND
94-96'		44.9 ppm 25.8 ppm 470.3 ppm 65.8 ppm	0.0 ppm 2.6 ppm 0.5 ppm			Brownish-gray, med-fine, micaceous SAND, w/odor, staining Olive-black & grayish-brown/black, fine-med, micaceous SAND, saturated w/oil, odor, staining
99-101'		315.8 ppm 49.2 ppm 11.2 ppm	0.9 ppm 0.0 ppm			Grayish-brown, fine-med, micaceous SAND, odor, staining, sheen Olive gray, fine-med, micaceous silty SAND, trace coarse sand, staining, slight odor, sheen
104-106'		69.6 ppm 42.8 ppm 0.0 ppm	0.0 ppm			Grayish-brown, fine-med, micaceous SAND, odor & sheen Light olive gray, fine-coarse, micaceous SAND
109-111'		44.5 ppm 3.3 ppm 0.0 ppm	0.0 ppm			Yellowish-gray/light olive gray, med, micaceous SAND

Location: Rockaway Park	Site Id: RPSB-42
Purpose: Soil Boring	Total Depth: 126.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
15		114-116	0.0 ppm	0.0 ppm		Olive gray, med-coarse, micaceous SAND, grading to fine micaceous silty SAND
20		119-121	0.0 ppm	0.0 ppm		Olive gray, med, micaceous SAND, w/trace silt Dark yellowish-brown, coarse-med SAND
25		124-126	3.3 ppm 0.0 ppm	0.0 ppm		Dark yellowish-brown, coarse-med SAND, trace mica Olive gray/med dark gray, fine, micaceous silty SAND Base of boring - 126'



Site Id: RPSB-43

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/01/99 - 12/03/99

Total Depth: 97.00'

Remarks: Samples selected for analysis at 5-7', 9-11', and 95-97'.

Elevation: 9.77'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PIID	Graphic Log	Material Description
3-5'			0.0 ppm 1.6 ppm		Drk yellow-brn, med-fine/med-coarse sandy FILL, gravel, concrete/brick fragments, coal Moderate yellow-brown, fine-med clayey-silty, sandy FILL, w/coal fragments
5-7'			0.0 ppm 1.6 ppm		Dusky yellow-brown, med-coarse sandy FILL, w/pebbles, brick fragments Black, med-coarse sandy FILL, w/fibrous material, odor, staining
7-9'			5.2 ppm		Same as above, w/rock fragments, wet
9-11'			1.9 ppm 3.2 ppm		Black, med-coarse sandy FILL, rock/brick frags, gravel, NAPL, odor Med gray, fine-med SAND, w/staining, odor
11-13'			18.1 ppm 11.4 ppm 3.0 ppm 33.9 ppm 21.6 ppm 22.9 ppm 12.9 ppm 36.5 ppm 17.8 ppm 9.0 ppm 28.5 ppm 3.2 ppm 10.2 ppm 2.8 ppm 40.1 ppm		Med dark-light gray, fine-med SAND, some mica, odor & staining
13-15'					Med dark gray, fine-med SAND w/fine-coarse gravel, rock fragments, staining, odor at bottom of spoon
15-17'					Dark gray, med-coarse SAND, w/NAPL, staining, odor
17-19'					Med light gray, fine-v. coarse SAND, some mica, shell fragments Med gray, coarse-fine SAND w/staining, odor Med light gray, med-v. coarse SAND w/staining, odor
19-21'			17.3 ppm 25.3 ppm 22.1 ppm 22.7 ppm 20.0 ppm 53.2 ppm 27.6 ppm 45.2 ppm 98.6 ppm 23.1 ppm		Med gray/med dark gray, med-v. coarse SAND, some fine-coarse gravel, zone of heavy staining & odor
21-23'					Med gray, med-v. coarse SAND w/some shell fragments, fine gravel
23-25'					
25-27'			102 ppm 93.2 ppm 114 ppm		Med gray, coarse-v. coarse SAND, w/some fine-coarse gravel, odor, staining Med light gray, med-fine SAND, staining & odor

Location: Rockaway Park	Site Id: RPSB-43
Purpose: Soil Boring	Total Depth: 97.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-32'		49.1 ppm 76.7 ppm			Med light gray, med-fine SAND, w/some mica, zones of light staining
35-37'		254 ppm 267 ppm			Med gray, med-fine SAND, trace coarse sand, slight sheen, some staining Gray, coarse-fine SAND, mica, w/heavy staining, odor & sheen
40-42'		47.2 ppm 283 ppm			Med gray, fine-med SAND, w/some mica, trace fine gravel, zones of heavy staining, odor & sheen
45-47'		329 ppm 209 ppm			Med gray, med-fine SAND w/some mica, trace shell fragments, light staining, sheen & odor
50-52'		436 ppm 444 ppm			Med gray, med-coarse SAND, w/some mica, staining, odor & sheen
55-57'		66.3 ppm			Med gray, med-v. coarse SAND, heavy staining, sheen & odor
60-62'		126 ppm 733 ppm			Med gray, coarse-v. coarse SAND, w/some mica, heavy staining, odor & sheen
65-67'		423 ppm 328 ppm 19.5 ppm			Med gray, med-v. coarse SAND w/some shell fragments, mica, fine gravel, thin stained zone in center of spoon, odor

Location: Rockaway Park	Site Id: RPSB-43
Purpose: Soil Boring	Total Depth: 97.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
70		70-72'	228 ppm 1074 ppm 821 ppm 482 ppm		Med dark gray, med-v. coarse SAND w/shell fragments, fine-coarse gravel Dark gray/gray-black, fine, micaceous SAND, stained, w/NAPL, odor at bottom of spoon
75		75-77'	39.2 ppm 45.0 ppm 82.3 ppm 20.5 ppm		Dark gray, med-v. coarse SAND, w/shell fragments, fine gravel, odor, sheen, NAPL
80		80-82'	2.4 ppm 5.2 ppm 10.6 ppm		Olive gray-black, med-fine, micaceous SAND, slight sheen at top of spoon
86		86-88'	115 ppm 34.3 ppm 53.0 ppm		Same as above, w/odor, heavy staining at bottom of spoon
90		90-92'	0.0 ppm 5.6 ppm 2.1 ppm 7.4 ppm		Olive-black, med-fine, micaceous SAND, slight odor & sheen
95		95-97'	0.9 ppm 0.0 ppm 0.0 ppm		Grayish-black, fine, micaceous silty SAND Grayish-brown, fine, micaceous silty SAND Brownish-gray, med-fine, micaceous SAND Base of boring- 97 ft.



Site Id: RPSB-44

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/03/99 - 03/15/00

Total Depth: 151.00'

Remarks: Samples selected for analysis at 10-12', 65-67', and 149-151'.

Elevation: 10.77'

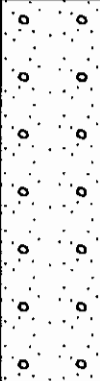
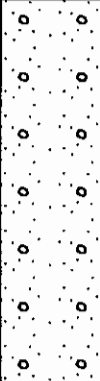
Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

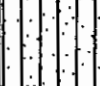
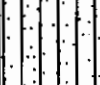
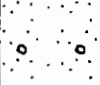
Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	39.6 ppm 114 ppm 78.5 ppm		Dark gray, fine silty sandy, FILL, w/clinker, thin layer gray/reddish-brown clay Grayish-black, med-coarse sandy FILL, saturated w/NAPL, odor
10		10-12'	117 ppm 195 ppm		Grayish-black, med-coarse sandy FILL, w/wood fragments, shale fragments, odor, saturated w/NAPL
15		15-17'	361 ppm 485 ppm 406 ppm 354 ppm		Same as above, no wood fragments, shell fragments
20		20-22'	176 ppm 274 ppm		Med dark gray, med-fine SAND w/some mica, coarse sand, saturated w/NAPL, odor
25		25-27'	86.9 ppm 296 ppm		Med gray, med-coarse SAND w/shell fragments, fine-coarse gravel, staining, sheen & odor

Location: Rockaway Park	Site Id: RPSB-44
Purpose: Soil Boring	Total Depth: 151.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	42.5 ppm 71.0 ppm 89.0 ppm 164 ppm		Med gray, med-coarse SAND w/shell fragments, fine-coarse gravel, staining, sheen, odor & NAPL
35		35-37'	18.3 ppm 68.0 ppm 0.0 ppm		Med gray, coarse-med, micaceous SAND, w/some v. coarse sand, trace shells, light staining at top of spoon
40		40-42'	16.4 ppm 53.4 ppm 37.2 ppm		Med gray, coarse-med, micaceous SAND, trace shell fragments, sheen, light staining, odor
45		45-47'	3.2 ppm		Med gray, fine-med, micaceous SAND
50		50-52'	70.0 ppm 43.9 ppm		Same as above, w/stained zone in middle of sampler, slight odor & sheen
55		55-57'	71.6 ppm		Med gray, med-v. coarse, micaceous SAND, w/trace fine-coarse gravel, staining, odor & sheen
60		60-62'	305 ppm 13.3 ppm		Med gray, med-coarse, micaceous SAND, w/some fine-coarse gravel, shell fragments, zones of heavy stains w/NAPL, odor
65		65-67'	34.2 ppm 25.0 ppm		Med gray, med-v. coarse, micaceous SAND w/fine-coarse gravel, shell frags, slight odor

Location: Rockaway Park				Site Id: RPSB-44	
Purpose: Soil Boring				Total Depth: 151.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 4.25in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
70-72'		70-72'	495 ppm 279 ppm 77.3 ppm 11.1 ppm		Brown-black, fine SAND, micaceous, w/fine-med gravel, shells, odor, heavy stains Olive gray, silty, micaceous fine SAND
75-77'		75-77'	16.1 ppm 16.6 ppm 7.8 ppm		Same as above, olive gray to olive black
80-82'		80-82'	45.4 ppm 82.9 ppm		Olive black, fine, micaceous silty SAND, w/zone of heavy staining at bottom of sampler, odor
84-86'		84-86'	1987 ppm 1465 ppm		Grey brown, medium SAND, some stain, strong NAPL/naphthalene-like odor, med dense, wet
89-91'		89-91'	426.3 ppm 219.3 ppm		Same as above, medium-fine SAND
94-96'		94-96'	134.5 ppm 131.2 ppm		Brown-black, medium-fine SAND, some stain, NAPL/naphthalene-like odor, dense, moist
99-101'		99-101'	325.7 ppm 298.6 ppm 223.7 ppm		Black, medium-fine SAND, tar waste saturated, odor, medium dense, wet
104-106'		104-106'	258.7 ppm 265.3 ppm		Same as above
109-111'		109-111'	117.2 ppm 56.8 ppm		Brown, medium-fine SAND, some stain, naphthalene-like odor, dense, sheen, wet

Location: Rockaway Park	Site Id: RPSB-44
Purpose: Soil Boring	Total Depth: 151.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
115		114-116	176.7 ppm		Brown, medium SAND, w/NAPL/naphthalene-like odor, loose, wet
120		119-121	23.4 ppm 24.9 ppm		Brown, medium SAND, w/mild naphthalene-like odor, loose, wet
125		124-126	18.7 ppm 19.6 ppm		Same as above
130		129-131	29.8 ppm 60.7 ppm		Same as above
135		134-136	68.5 ppm		Same as above
140		139-141	30.7 ppm 2.9 ppm		Same as above (top 6") over brown, fine SAND, no stain or odor, dense, wet
145		144-146	0.2 ppm 0.5 ppm		Brown, fine SAND, dense, wet
		149-151	0.4 ppm 0.5 ppm		Same as above

Location: Rockaway Park	Site Id: RPSB-44
Purpose: Soil Boring	Total Depth: 151.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
151					Base of boring -- 151 ft.
150					
149					
148					
147					
146					
145					
144					
143					
142					
141					
140					
139					
138					
137					
136					
135					
134					
133					
132					
131					
130					
129					
128					
127					
126					
125					
124					
123					
122					
121					
120					
119					
118					
117					
116					
115					
114					
113					
112					
111					
110					
109					
108					
107					
106					
105					
104					
103					
102					
101					
100					
99					
98					
97					
96					
95					
94					
93					
92					
91					
90					
89					
88					
87					
86					
85					
84					
83					
82					
81					
80					
79					
78					
77					
76					
75					
74					
73					
72					
71					
70					
69					
68					
67					
66					
65					
64					
63					
62					
61					
60					
59					
58					
57					
56					
55					
54					
53					
52					
51					
50					
49					
48					
47					
46					
45					
44					
43					
42					
41					
40					
39					
38					
37					
36					
35					
34					
33					
32					
31					
30					
29					
28					
27					
26					
25					
24					
23					
22					
21					
20					
19					
18					
17					
16					
15					
14					
13					
12					
11					
10					
9					
8					
7					
6					
5					
4					
3					
2					
1					

Site Id: RPSB-45

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/07/00 - 01/07/00

Total Depth: 52.00'

Remarks: Samples selected for analysis at 6-8', 25-27', 40-42', and 50-52'.

Elevation: 9.13'

Datum: Mean Sea Level

Logged By: John Schafer

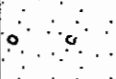
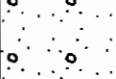
Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
2-4'						No recovery (2'-4')
4-6'						No recovery (4'-6')
6-8'			0.7 ppm 5.4 ppm	0.4 ppm 0.4 ppm		Brown, silty FILL, w/brick, soft, wet Dark gray, fine sandy FILL, med dense, wet
10-12'						Dark gray, sandy FILL, w/brick, wet
15-17'			4.4 ppm 3.5 ppm 19.9 ppm 21.5 ppm	0.5 ppm 0.6 ppm 0.8 ppm 0.6 ppm		Dark gray, FILL, brick, fine-med sand w/shells, moist, stiff
20-22'			0.3 ppm 1.5 ppm 3.1 ppm 5.8 ppm	0.0 ppm 0.4 ppm 0.5 ppm 0.4 ppm		Lt. gray, fine-med SAND, w/brown NAPL stain, moist, stiff
25-27'			0.0 ppm 13.7 ppm 82.4 ppm 52.6 ppm	0.6 ppm 0.5 ppm 0.4 ppm 0.4 ppm		Gray, fine-med SAND, w/brown NAPL stain, stiff, moist

Location: Rockaway Park	Site Id: RPSB-45
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
		30-32'	176 ppm 186 ppm 116 ppm 172 ppm	0.4 ppm 0.4 ppm 0.8 ppm 2.6 ppm		Gray, fine SAND, w/slight naphthalene-like odor, light brown tar stain, moist, stiff
35		35-37'	120.5 ppm 131 ppm 24.0 ppm 11.6 ppm	0.4 ppm 0.4 ppm 0.4 ppm 0.4 ppm		Lt. gray, fine SAND, stiff, moist
40		40-42'	0.0 ppm	0.4 ppm 0.5 ppm 0.4 ppm 0.4 ppm		Same as above
45		45-47'	0.0 ppm	0.0 ppm		Lt. gray, fine-med SAND, moist
50		50-52'	0.0 ppm	0.0 ppm		Same as above, stiff
						Base of boring - 52 ft.
55						
60						
65						

Site Id: RPSB-46

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/20/99 - 12/20/99

Total Depth: 52.00'

Remarks: Samples selected for analysis at 4-6', 8-10', 35-37', and 50-52'.

Elevation: 9.23'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		4-6'	6.1 ppm		Fine, silty sandy FILL w/crushed rock, NAPL, hydrocarbon-like odor, wet
10		8.5-10'	38.0 ppm 150.0 ppm		FILL, crushed rock & concrete, w/NAPL, hydrocarbon-like odor Brown, fine SAND, stained, loose, w/NAPL, hydrocarbon-like odor, wet
15		15-17'	169 ppm		Gray, fine-med SAND, med dense, w/hydrocarbon-like odor, sporadic brown staining, wet
20		20-22'	54.0 ppm		Gray, fine SAND, w/gravel, med dense, hydrocarbon-like odor, sporadic brown staining, sheen, wet
25		25-27'	120 ppm		Gray, fine SAND, med dense, w/hydrocarbon-like odor, sporadic staining, gravel layer at 26.25' coated w/NAPL, wet

Location: Rockaway Park				Site Id: RPSB-46	
Purpose: Soil Boring				Total Depth: 52.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	50.0 ppm		Gray, fine SAND, med dense, trace subrounded gravel, hydrocarbon-like odor, sporadic brown staining, sheen, wet
35		35-37'	0.0 ppm		Gray, fine SAND, med dense, wet
40		40-42'	0.0 ppm		Same as above
45		45-47'	0.0 ppm		Same as above
50		50-52'	0.0 ppm		Same as above
52					Base of boring- 52 ft.
55					
60					
65					

Site Id: RPSB-47

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/13/00 - 01/14/00

Total Depth: 42.00'

Remarks: Samples selected for analysis at 5-7', 25-27', and 40-42'.

Elevation: 8.57'

Datum: Mean Sea Level

Logged By: Jeff Diamond

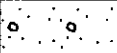
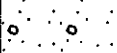
Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
5		5-7'	0.0 ppm 0.0 ppm 41.2 ppm 62.0 ppm 98.4 ppm 207 ppm 149 ppm 183 ppm	0.0 ppm 0.0 ppm 3.4 ppm 28.0 ppm 50+ ppm		Dusky yellowish-brown, med-v. coarse silty SAND, w/wood Moderate-yellowish brown, med SAND, loose, trace silt, slight staining, odor Grayish-black/med dark gray, med SAND, loose, sheen, odor, staining, wet
10		10-12'	428 ppm 843 ppm 861 ppm	0.0 ppm 0.0 ppm 1.3 ppm		Brownish gray/dark grayish black, med SAND, loose, sheen, odor & staining
15		15-17'	24.8 ppm 8.4 ppm 1.9 ppm	0.0 ppm		Dark gray, med-coarse SAND w/trace fine gravel, some mica, odor
20		20-22'	0.2 ppm 0.0 ppm	0.0 ppm		Med dark gray, coarse-v. coarse SAND w/fine-coarse gravel, shells, odor Med gray, med-coarse SAND, med dense
25		25-27'	0.0 ppm	0.0 ppm		Med gray, med-coarse SAND, trace fine gravel Med dark gray/med gray, med-v. coarse SAND w/fine-coarse gravel, some mica, odor

Location: Rockaway Park	Site Id: RPSB-47
Purpose: Soil Boring	Total Depth: 42.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30		30-32'	0.0 ppm	0.0 ppm		Med dark gray, coarse-v. coarse SAND w/fine-coarse gravel Med gray, med-coarse SAND, w/some mica
35		35-37'	0.0 ppm	0.0 ppm		Med gray, coarse-med SAND, med dense, w/some mica & v. coarse sand
40		40-42'	0.0 ppm	0.0 ppm		Med gray, coarse-med SAND, med dense, w/little mica
42						Base of boring- 42 ft.

Site Id: RPSB-48

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/18/00 - 01/24/00

Total Depth: 47.00'

Remarks: Samples selected for analysis at 4-6', 22-24', and 45-47'.

Elevation: 4.71'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 9.50in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
5		4-6'	799 ppm 2000+ ppm 2000+ ppm 2000+ ppm 1494 ppm 2000+ ppm 2000+ ppm 2000+ ppm 2000+ ppm	0.0 ppm 9.3 ppm 0.3 ppm 14.3 ppm 13.1 ppm 10.2 ppm 1.0 ppm 18.6 ppm 15.2 ppm		Pale yellowish-brown/med gray, med SAND, med dense, w/little mica, odor, sheen some staining Med gray, coarse-med SAND, med dense, odor, sheen Med dark gray, coarse-med SAND, med dense, trace mica, odor
11		8-10'	235 ppm 232 ppm	1.5 ppm		Dark gray, coarse-v. coarse SAND w/fine gravel, odor
12		10-12'	2000+ ppm 335 ppm 333 ppm 159 ppm 111 ppm 45.6 ppm 14.5 ppm 4.9 ppm 0.4 ppm 7.4 ppm 0.0 ppm 5.5 ppm 13.7 ppm 8.1 ppm 0.0 ppm 0.0 ppm 9.4 ppm 2.6 ppm 0.0 ppm 0.0 ppm 1.6 ppm 0.0 ppm 0.0 ppm	0.0 ppm 1.5 ppm 0.0 ppm 0.3 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Med dark gray, coarse-med SAND, med dense, w/little fine gravel, odor Med dark gray, coarse-med SAND, med dense w/some fine-coarse gravel, shell fragments, brackish odor Dark gray, coarse-v. coarse SAND, med dense, w/fine-coarse gravel, slight odor
16		14-16'	0.0 ppm 0.0 ppm	0.0 ppm 0.0 ppm		Med-dark gray, coarse-v. coarse SAND, med dense, w/fine-coarse gravel, trace mica & shell fragments, slight odor Med gray, coarse-v. coarse SAND, med dense, w/fine-coarse gravel, shell frags
22		16-18'	0.0 ppm 0.0 ppm	0.0 ppm 0.0 ppm		Same as above, dark gray Medium-drk gray, med-v. coarse SAND grading to fine, micaceous silty SAND w/some clay
24		18-20'	0.0 ppm 0.0 ppm	0.0 ppm 0.0 ppm		Medium gray, medium, micaceous SAND, medium dense, slight odor
26		20-22'	0.0 ppm 0.0 ppm	0.0 ppm 0.0 ppm		
28		22-24'	0.0 ppm 0.0 ppm	0.5 ppm 0.7 ppm 0.4 ppm		
30		24-26'	0.0 ppm 0.0 ppm	0.4 ppm 0.4 ppm		

Location: Rockaway Park					Site Id: RPSB-48	
Purpose: Soil Boring					Total Depth: 47.00'	
Consulting Firm: Dvirka & Bartilucci					Borehole Dia.: 9.50in	
Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30		30-32'	7.1 ppm 6.6 ppm 10.3 ppm	0.0 ppm		Medium gray, medium, micaceous SAND, medium dense
35		35-37'	0.0 ppm	0.0 ppm		Same as above
40		40-42'	0.0 ppm	0.0 ppm		Same as above
45		45-47'	0.0 ppm	0.0 ppm		Same as above
						Base of boring - 48 ft.
48						
50						
55						
60						

Site Id: RPSB-49

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/08/99 - 12/08/99

Total Depth: 52.00'

Remarks: Samples selected for analysis at 2-4', 8-10', 40-42', and 50-52'.

Elevation: 10.73'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-2'		0-2'	4.7 ppm 4.7 ppm		Dusky brown, med-v. coarse, sandy TOPSOIL, grass, roots
2-4'		2-4'	3.2 ppm 3.7 ppm 0.9 ppm		Grayish-brown, med-v. coarse, sandy FILL, some silt
4-6'		4-6'	0.0 ppm		Grayish-brown, med-v. coarse, sandy FILL, w/chunks of tar
6-8'		6-8'	520 ppm 213 ppm		Yellow-bm, coarse-v. coarse, sandy FILL, fine-coarse gravel to red-brown silty clay
8-10'		8-10'	1587 ppm 2000+ ppm 2000+ ppm		Moderate reddish-brown, silty clayey FILL, w/v. coarse gravel, wet
10-12'					Black, med-fine, sandy FILL, w/some mica, odor, staining
12-14'					Grayish-brown, coarse-med, sandy FILL, staining, odor, slight sheen
14-16'					Moderate brown, silty clayey FILL, w/black med-fine sand, brick fragments
16-18'					Groyish-black, coarse SAND, odor, sheen, saturated w/NAPL
18-20'					
20-22'		20-22'	2000+ ppm 1770 ppm		Dark gray, med-coarse SAND, odor, sheen, light staining, coarse gravel
22-24'					
24-26'					
26-28'					
28-30'					
30-32'					
32-34'					
34-36'					
36-38'					
38-40'					
40-42'					
42-44'					
44-46'					
46-48'					
48-50'					
50-52'					
52-54'					
54-56'					
56-58'					
58-60'					
60-62'					
62-64'					
64-66'					
66-68'					
68-70'					
70-72'					
72-74'					
74-76'					
76-78'					
78-80'					
80-82'					
82-84'					
84-86'					
86-88'					
88-90'					
90-92'					
92-94'					
94-96'					
96-98'					
98-100'					
100-102'					
102-104'					
104-106'					
106-108'					
108-110'					
110-112'					
112-114'					
114-116'					
116-118'					
118-120'					
120-122'					
122-124'					
124-126'					
126-128'					
128-130'					
130-132'					
132-134'					
134-136'					
136-138'					
138-140'					
140-142'					
142-144'					
144-146'					
146-148'					
148-150'					
150-152'					
152-154'					
154-156'					
156-158'					
158-160'					
160-162'					
162-164'					
164-166'					
166-168'					
168-170'					
170-172'					
172-174'					
174-176'					
176-178'					
178-180'					
180-182'					
182-184'					
184-186'					
186-188'					
188-190'					
190-192'					
192-194'					
194-196'					
196-198'					
198-200'					
200-202'					
202-204'					
204-206'					
206-208'					
208-210'					
210-212'					
212-214'					
214-216'					
216-218'					
218-220'					
220-222'					
222-224'					
224-226'					
226-228'					
228-230'					
230-232'					
232-234'					
234-236'					
236-238'					
238-240'					
240-242'					
242-244'					
244-246'					
246-248'					
248-250'					
250-252'					
252-254'					
254-256'					
256-258'					
258-260'					
260-262'					
262-264'					
264-266'					
266-268'					
268-270'					
270-272'					
272-274'					
274-276'					
276-278'					
278-280'					
280-282'					
282-284'					
284-286'					
286-288'					
288-290'					
290-292'					
292-294'					
294-296'					
296-298'					
298-300'					
300-302'					
302-304'					
304-306'					
306-308'					
308-310'					
310-312'					
312-314'					
314-316'					
316-318'					
318-320'					
320-322'					

Location: Rockaway Park	Site Id: RPSB-49
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bortilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30-32'			No recovery (30'-32')
35		35-37'	387 ppm		Medium gray, medium-fine, micaceous SAND, trace coarse gravel, odor, staining
40		40-42'	8.4 ppm 9.7 ppm		Medium gray, medium-fine SAND
45		45-47'	1.5 ppm 2.4 ppm		Medium gray-medium light gray, medium-coarse, micaceous SAND
50		50-52'	0.0 ppm 5.5 ppm		Same as above, medium gray
					Base of boring - 52 ft.
55					
60					
65					



Site Id: RPSB-50

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/09/99 - 12/13/99

Total Depth: 57.00'

Remarks: Samples selected for analysis at 5-7', 7-9', 39-41', and 55-57'.

Elevation: 12.06'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	0.0 ppm 305 ppm		Yellow-brown, sandy FILL, w/brick, concrete
7		7-9'	2000+ ppm 2000+ ppm		Grayish-black, med-coarse, sandy FILL w/tar fragments, odor & staining
9		9-11'	2000+ ppm 2000+ ppm		FILL, wood
11		11-13'	2000+ ppm 2000+ ppm 2000+ ppm		Grayish-black, coarse-med, sandy FILL, odor, heavy staining, saturated, wet
13		13-15'	2000+ ppm		Grayish-black, coarse-v. coarse, sandy FILL w/fine-coarse gravel, heavy staining, odor
15		15-17'	2000+ ppm 2000+ ppm		Same as above
17		17-19'	2000+ ppm 2000+ ppm 2000+ ppm		Medium gray, coarse-v. coarse, sandy FILL, odor, w/wood fragments
19		19-21'	2000+ ppm 2000+ ppm		Wood (0.25')
21		21-23'	14.7 ppm 17.5 ppm 5.8 ppm		Med gray, coarse-v. coarse, micaceous, sandy FILL, odor, sheen & staining
23		23-25'	6.0 ppm 6.2 ppm		Med-dark gray, coarse-v. coarse, sandy FILL w/fine gravel, wood fragments, odor
25		25-27'	8.0 ppm 7.1 ppm		Med gray, coarse-v. coarse, micaceous, sandy FILL, trace of wood, shell fragments, slight odor
27		27-29'	12.0 ppm 7.3 ppm		Med-drk gray, coarse-v. coarse, micaceous, sandy FILL, w/wood frags, fine-coarse gravel
29		29-31'	10.4 ppm 84.5 ppm 49.4 ppm		Lt. gray/gray-orange, coarse-v. coarse SAND, w/some mica
					Same as above, w/shell fragments, fine-coarse gravel, no mica
					Med gray, coarse-v. coarse, micaceous SAND w/shell fragments, fine gravel
					Lt. brownish-gray, coarse-v. coarse SAND w/fine-coarse gravel
					Med gray, coarse-v. coarse SAND w/some fine gravel
					Light gray, coarse-v. coarse SAND w/shell fragments, coarse gravel
					Same as above, no gravel

Location: Rockaway Park	Site Id: RPSB-50
Purpose: Soil Boring	Total Depth: 57.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
31-33'		31-33'	17.2 ppm 14.7 ppm		Med light gray, coarse-med, micaceous SAND, staining, odor & sheen Med light gray, med-coarse, micaceous SAND, slight odor
33-35'		33-35'	45.1 ppm 32.3 ppm 7.3 ppm		Med light gray, med-v. coarse, micaceous SAND, w/shell fragments, some fine gravel, odor, slight staining
35-37'		35-37'			No recovery (35'-37')
37-39'		37-39'	10.8 ppm 12.2 ppm		Med gray, med-v. coarse, micaceous SAND, w/fine gravel
39-41'		39-41'	0.9 ppm 0.4 ppm 3.3 ppm		Med gray, med-fine, micaceous SAND
41-43'		41-43'	5.0 ppm 3.9 ppm 3.6 ppm		Same as above
43-45'		43-45'	1.2 ppm 0.8 ppm		Same as above
45-47'		45-47'	0.0 ppm		Same as above
47-49'		47-49'	0.0 ppm 7.6 ppm 35.6 ppm		Med gray, med-coarse, micaceous SAND
50-52'		50-52'	13.4 ppm 11.2 ppm		Same as above
55-57'		55-57'	35.6 ppm 30.7 ppm 0.0 ppm		Med gray, coarse-med, micaceous SAND, w/shell fragments
					Base of boring - 57 ft.

Site Id: RPSB-51

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/10/00 - 01/11/00

Total Depth: 52.00'

Remarks: Samples selected for analysis at 5-7', 10-12', 40-42', and 50-52'.

Elevation: 10.35'

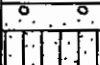
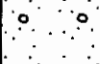
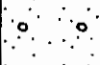
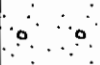
Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
2-4'			0.0 ppm		Brown, silty sandy FILL, w/black clinker/coal, loose, moist
5-7'			0.0 ppm 0.0 ppm 1.8 ppm		Brown-orange, fine SAND w/black silt at base, dense
7-9'			24.0 ppm 600 ppm 200 ppm 450 ppm		Black, fine SAND, NAPL-laden, med dense, w/hydrocarbon-like odor, wet
10-12'			300 ppm 300 ppm 250 ppm		Gray, fine SAND, med dense, w/hydrocarbon-like odor, some heavy brown staining, wet
15-17'			250 ppm		Same as above, w/intermittent staining
20-22'			100 ppm 150 ppm 100 ppm		Gray-brown, fine SAND, NAPL-laden, med dense, w/hydrocarbon-like odor, sheen, wet
25-27'			55.0 ppm 25.0 ppm 20.0 ppm 5.5 ppm		Gray, fine-med SAND, med dense, w/hydrocarbon-like odor, sheen, wet

Location: Rockaway Park	Site Id: RPSB-51
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	415 ppm 166 ppm 100 ppm 115 ppm		Gray, fine-medium SAND, medium dense, w/slight hydrocarbon-like odor, sporadic brown staining, wet
35		35-37'	220 ppm 60.0 ppm 70.0 ppm		Same as above
40		40-42'	1.1 ppm 0.6 ppm 0.0 ppm		Same as above, no staining
45		45-47'	2.2 ppm 0.2 ppm 0.0 ppm		Same as above
50		50-52'	2.0 ppm 2.0 ppm 5.5 ppm		Same as above
					Base of boring- 52 ft.
55					
60					
65					



**Dvirka
and
Bartilucci**
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RPSB-52

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/13/00 - 01/14/00

Total Depth: 44.00'

Remarks: Samples selected for analysis at 6-8', 30-32', and 42-44'.

Elevation: 6.07'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
2-4'						No recovery (2-4')
4-6'						No recovery (4-6')
6-8'			700 ppm 600 ppm 800 ppm 1500 ppm	0.0 ppm 10.3 ppm 14.4 ppm 8.6 ppm		Dark gray, fine-coarse SAND, loose, w/heavy hydrocarbon-like odor, wet
10-12'			110 ppm 50.0 ppm 25.0 ppm	0.0 ppm 0.8 ppm 21.8 ppm		Dark gray-black, fine SAND, loose, w/heavy hydrocarbon-like odor, wet
15-17'			30.0 ppm 85.0 ppm 75.0 ppm 15.0 ppm	0.0 ppm		Black, fine-coarse SAND, loose, w/heavy hydrocarbon odor, wet
20-22'			20.0 ppm 6.5 ppm 15.0 ppm	0.0 ppm 0.3 ppm		Black, fine-med SAND, loose, w/hydrocarbon odor, wet
25-27'			0.0 ppm	0.0 ppm		Grayish-black, fine-med SAND, med dense, wet

Location: Rockaway Park					Site Id: RPSB-52	
Purpose: Soil Boring					Total Depth: 44.00'	
Consulting Firm: Dvirka & Bartilucci					Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30-32'		30-32'	0.0 ppm 1.4 ppm	0.0 ppm 1.1 ppm 0.8 ppm		Gray, fine, micaceous SAND, med dense, wet
35-37'		35-37'	0.0 ppm	0.0 ppm 0.0 ppm 0.2 ppm 0.0 ppm		Same as above
40-42'		40-42'				No recovery (40-42')
42-44'		42-44'	0.0 ppm	0.0 ppm 0.4 ppm 0.3 ppm 0.0 ppm		Gray, fine SAND, med dense, wet
						Base of boring- 44 ft.

Page 2 of 2

Site Id: RPSB-53

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/02/00 -- 02/02/00

Total Depth: 41.00'

Remarks: Samples selected for analysis at 5-7', 25-27', and 39-41'.

Elevation: 5.68'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
						Not sampled (0-5')
5-7'			81.1 ppm 110 ppm 74.4 ppm	0.3 ppm 0.3 ppm 0.0 ppm		Gray-pole yellow brown, medium-fine SAND w/some mica, loose, odor, sheen, wet
15-17'			0.2 ppm 0.0 ppm	0.2 ppm 0.0 ppm		Grayish-black/dark gray, coarse-v. coarse SAND, w/fine-coarse gravel, shells, med dense
17-19'			0.0 ppm	0.0 ppm 0.4 ppm 0.6 ppm		Dark gray-med dark gray, coarse-v. coarse SAND w/fine-coarse, shell fragments, med dense (1 ppm H2S)
19-21'			0.0 ppm	0.0 ppm		Same as above, no shells (H2S not measured)
21-23'			0.0 ppm	0.3 ppm 0.4 ppm 0.2 ppm		Med gray, med SAND, med dense
23-25'			0.0 ppm	0.0 ppm		Med dark gray, med-coarse SAND w/fine gravel & shells
25-27'			0.0 ppm	0.0 ppm		Yellow-brown to med gray, coarse-v. coarse SAND w/fine gravel, shell fragments
27-29'			0.0 ppm	0.0 ppm		Med gray-med dark gray, coarse-v. coarse SAND, w/fine-coarse gravel
29-31'			0.0 ppm 1.6 ppm	0.3 ppm 0.4 ppm		Med gray, med-fine SAND, med dense, some mica
						Med gray, med SAND w/some mica, med dense, trace coarse gravel
						Med gray, med-coarse SAND, med dense, w/some mica, coarse gravel
						Med gray, med SAND, med dense, w/some mica

Location: Rockaway Park					Site Id: RPSB-53	
Purpose: Soil Boring					Total Depth: 41.00'	
Consulting Firm: Dvirka & Bartilucci					Borehole Dia.: 4.25in	
Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
		31-33'	0.0 ppm	0.4 ppm 0.3 ppm 0.0 ppm		Medium gray, medium SAND, medium dense, w/some mica
		33-35'	0.0 ppm 0.0 ppm 0.0 ppm	0.0 ppm		Med light gray-med gray, med-coarse SAND w/some mica, med dense
		35-37'	0.0 ppm 0.0 ppm 0.0 ppm	0.0 ppm		Med gray, med SAND, w/some mica, med dense
		37-39'	0.0 ppm	0.0 ppm		Same as above
		39-41'	0.0 ppm	0.0 ppm		Same as above, micaceous
						Base of boring- 41 ft.
6						
9						
12						
15						
18						
21						
24						
27						
30						
33						
36						
39						
42						

Site Id: RPSB-54

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/12/00 - 01/12/00

Total Depth: 52.00'

Remarks: Samples selected for analysis at 4-6', 12-14', and 50-52'.

Elevation: 7.64'

Datum: Mean Sea Level

Logged By: Ian Davidson

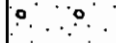
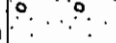
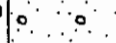
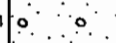
Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
0-4'		0.0 ppm 3.6 ppm 0.0 ppm 0.0 ppm				Brown, TOPSOIL, organics, loose Brown, fine-med, sandy FILL, organics Tan, fine-med, sandy FILL, coke deposit Dark brown-brown, fine-med, sandy FILL, w/coke, NAPL, moist
4-8'		0.0 ppm 0.0 ppm 83.0 ppm 150.5 ppm 2000+ ppm 2000+ ppm				Tan, fine SAND, w/NAPL, moist, loose Gray-black, fine SAND, w/NAPL, heavy stain, stiff
8-12'		1834 ppm 2000+ ppm	10+ ppm			Gray, fine SAND, w/heavy NAPL, med loose, moist Same as above, w/troce tar stains
12-16'		12.5 ppm 10.7 ppm 11.8 ppm	0.2 ppm			Grayish-black, fine-med SAND, w/NAPL, black tar stain, med stiff, wet Same as above, but black
16-20'		244 ppm 374 ppm 12.8 ppm 45.2 ppm 23.2 ppm 4.3 ppm 0.8 ppm	0.2 ppm			Gray, fine-med SAND, w/NAPL, med stiff, moist
20-24'		8.5 ppm 3.4 ppm	1.0 ppm			Same as above, stiff
24-28'						Same as above, med stiff
28-32'						

Location: Rockaway Park	Site Id: RPSB-54
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
		32-36'	8.1 ppm 42.3 ppm 25.3 ppm 42.4 ppm	1.5 ppm		Gray, fine-medium SAND, w/NAPL, medium stiff, wet Gray, fine SAND, med stiff, wet
		36-38'	6.8 ppm			Light gray, fine SAND, med stiff, wet
		38-40'	141 ppm 85.0 ppm	2.0 ppm		Gray, fine SAND, w/slight NAPL, trace tar, med stiff, wet
		45-47'	0.0 ppm 0.0 ppm	0.0 ppm		Gray, fine-med SAND, med stiff, wet
		50-52'		0.0 ppm		Same as above, loose Base of boring- 52 ft.



Site Id: RPSB-55

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/06/00 - 03/06/00

Total Depth: 42.00'

Remarks: Samples selected for analysis at 10-12' and 40-42'.

Elevation: 8.03'

Dotum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	0.0 ppm		Red-brown, medium-fine SAND, loose
10		10-12'	0.0 ppm		Gray, medium-fine SAND, med dense, wet
15		15-17'	0.0 ppm		Same as above
20		20-22'	0.0 ppm		Gray, medium SAND w/shell fragments, loose, moist
25		25-27'	0.0 ppm		Same as above

Location: Rockaway Park				Site Id: RPSB-55	
Purpose: Soil Boring				Total Depth: 42.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-32'			0.0 ppm		Gray, medium SAND w/shell fragments, loose, moist
35-37'			0.0 ppm		Gray, med-fine SAND, dense, wet
40-42'			0.0 ppm		Same as above
					Base of boring - 42 ft.



Site Id: RPSB-56

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/06/00 - 03/06/00

Total Depth: 42.00'

Remarks: Samples selected for analysis at 5-7' and 40-42'.

Elevation: 8.76'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	0.0 ppm		Brown, med-fine SAND, w/some staining, loose
10		10-12'	0.0 ppm		Gray, med-fine SAND, loose, moist
15		15-17'	0.0 ppm		Tan, med SAND, w/shell fragments, med dense, moist
20		20-22'	0.0 ppm		Same as above
25		25-27'	0.0 ppm		Gray, med-fine SAND, dense, moist

Location: Rockaway Park				Site Id: RPSB-56	
Purpose: Soil Boring				Total Depth: 42.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-32'			0.0 ppm		Gray, med-coarse SAND, loose, moist
35-37'			0.0 ppm		Some as above
40-42'			0.0 ppm		Same as above, wet
Base of boring- 42 ft.					



Site Id: RPSB-57

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/24/00 - 02/24/00

Total Depth: 42.00'

Remarks: Samples selected for analysis at 15-17' and 40-42'.

Elevation: 9.80'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	0.0 ppm		Medium, sandy, gravelly FILL, coal, loose Tan, medium sandy, FILL, loose, moist
10		10-12'	0.0 ppm		Tan, medium SAND, med dense, moist
15		15-17'	0.0 ppm		Brown-tan, med-fine SAND, med dense, moist
20		20-22'	0.0 ppm		Tan, med-coarse SAND, w/shell fragments, med dense, moist
25		25-27'	0.0 ppm		Gray-tan, medium SAND, some staining, med dense, moist

Location: Rockaway Park				Site Id: RPSB-57	
Purpose: Soil Boring				Total Depth: 42.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-32'			0.0 ppm		Gray-tan, medium SAND w/large shell fragments, med dense, moist
35-37'			0.0 ppm		Gray, med-fine SAND, medium dense, wet
40-42'			0.0 ppm		Same as above
					Base of boring - 42 ft.

Site Id: RPSB-58

Location: Rockaway Park

Purpose: Sail Boring

Date(s): 01/26/00 - 01/31/00

Total Depth: 42.00'

Remarks: Samples selected for analysis at 4-6' and 40-42'.

Elevation: 2.96'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
2-4'		2-4'	0.0 ppm	0.0 ppm		Pale-moderate yellowish-brown, med-coarse SAND w/trace fine gravel, loose
4-6'		4-6'	0.0 ppm	0.0 ppm		Moderate brown, med-coarse SAND, w/trace fine gravel Yellowish-brown/brownish gray to light gray, med-coarse SAND, trace black sand on top, wet
10-12'		10-12'	0.0 ppm	0.0 ppm		Pale yellowish-brown, med-coarse SAND, loose, w/some fine gravel & mica, wet Med light gray, med-coarse SAND, loose, w/some mica & coarse gravel
15-17'		15-17'	0.0 ppm 0.4 ppm 0.5 ppm	0.0 ppm		Grayish-brown, coarse-med SAND, loose, w/little mica, fine gravel, wet Med light gray, med-coarse SAND, loose, w/little mica, trace fine gravel, wet
20-22'		20-22'	0.0 ppm	0.0 ppm		Med light gray, med-coarse SAND, med dense, w/coarse gravel, wet Same as above, w/fine gravel, shell fragments
25-27'		25-27'	0.0 ppm	0.0 ppm		Pale yellowish-brown, med-coarse SAND, med dense, w/same mica, little shell fragments, wet

Location: Rockaway Park	Site Id: RPSB-58
Purpose: Soil Boring	Total Depth: 42.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30-32'			0.0 ppm			Med gray, med SAND, med dense, w/some mica
35-37'			0.0 ppm			Same as above
40-42'			0.0 ppm			Same as above
						Base of boring-- 42 ft.



**Dvirka
and
Bartilucci**
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RPSB-59

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/15/00 - 02/15/00

Total Depth: 45.00'

Remarks: Samples selected for analysis at 5-7' and 40-42'.

Elevation: 7.43'

Datum: Mean Sea Level

Logged By: John Schafer

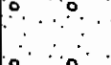
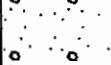
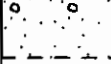
Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
5		5-7'	0.2 ppm 0.4 ppm	0.0 ppm		Tan, fine-med SAND, loose, wet at 6'
10		10-12'	0.0 ppm	0.0 ppm		Tan, fine med SAND, loose, wet
15		15-17'				No recovery (15-17')
20		20-22'	0.0 ppm	0.0 ppm		Gray, fine SAND, loose, wet
25		25-27'	0.0 ppm	0.0 ppm		Same as above

Location: Rockaway Park	Site Id: RPSB-59
Purpose: Soil Boring	Total Depth: 45.00'
Consulting Firm: Dvirka & Bortilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30-32'		30-32'	0.0 ppm	0.0 ppm		Gray, fine, micaceous SAND, med dense, wet
35-37'		35-37'	0.0 ppm	0.0 ppm		Dark gray, fine, micaceous SAND, med dense, wet
40-42'		40-42'	0.0 ppm	0.0 ppm		Dark gray, fine SAND, med dense, wet
43-45'		43-45'	0.0 ppm	0.0 ppm		Same as above
45 ft						Base of boring - 45 ft.
5						
10						
15						
20						
25						
30						
35						
40						
45						



Site Id: RPSB-60

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/07/00 - 02/07/00

Total Depth: 42.00'

Remarks: Samples selected for analysis at 15-17' and 40-42'.

Elevation: 2.55'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
2-4'		0.0 ppm	0.0 ppm			Tan-brown, fine SAND, loose
4-6'		0.0 ppm	0.0 ppm			Same as above
6-8'		0.0 ppm	0.0 ppm			Tan, fine-med SAND, loose, wet
10-12'		0.0 ppm	0.0 ppm			Same as above
15-17'		0.0 ppm 0.0 ppm 1.3 ppm	0.0 ppm			Tan, fine-coarse SAND, w/some rounded gravel, loose, wet
20-22'		0.0 ppm				Tan, fine-coarse SAND w/subrounded-rounded gravel
25-27'						No recovery (25-27')

Location: Rockaway Park	Site Id: RPSB-60
Purpose: Soil Boring	Total Depth: 42.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30		30-32'	0.0 ppm 4.7 ppm	0.0 ppm		Gray, fine SAND, med dense, wet
35		35-37'	0.0 ppm	0.0 ppm		Some as above, micaceous
40		40-42'	0.0 ppm	0.0 ppm		Same as above
						Base of boring— 42 ft.
5						
10						
15						
20						
25						
30						
35						
40						
45						

Site Id: RPSB-61

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/10/00 - 02/10/00

Total Depth: 57.00'

Remarks: Samples selected for analysis at 10-12' and 55-57'. No HCN for 15-17' and 20-22' due to previous high concentrations.

Elevation: 7.68'

Datum: Mean Sea Level

Logged By: John Schofer

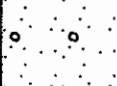
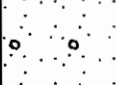
Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
5		5-7'	20.5 ppm 25.7 ppm 31.3 ppm	3.0 ppm		Tan-gray, fine-med SAND, loose, w/sewage-like odor, wet at 6'
11		10-12'	200 ppm 2000+ ppm 2000+ ppm	7.0 ppm 12 ppm 15 ppm		Gray, fine-med SAND, med dense, w/heavy solvent-like odor, wet
15		15-17'	60.0 ppm 150 ppm 70.0 ppm			Dark gray-black, fine-coarse SAND, w/some gravel & shells, solvent-like odor
21		20-22'	35.0 ppm 19.0 ppm 27.0 ppm			Same as above
25		25-27'	11.7 ppm 28.5 ppm 24.9 ppm	3.0 ppm		Gray, fine-coarse SAND & GRAVEL, solvent-like odor

Location: Rockaway Park	Site Id: RPSB-61
Purpose: Soil Boring	Total Depth: 57.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
30-32'		30-32'	30.0 ppm 50.0 ppm			Gray, fine SAND, med dense, w/slight solvent-like odor, wet
35-37'		35-37'	48.2 ppm 50.1 ppm			Gray, fine SAND, dense, no odor, wet
40-42'		40-42'	7.3 ppm 11.9 ppm			Same as above
45-47'		45-47'	15.5 ppm 13.2 ppm			Gray, fine SAND, med dense, w/shells, wet
50-52'		50-52'	17.5 ppm			Gray, fine-med SAND, med dense, wet
55-57'		55-57'	8.7 ppm 9.1 ppm			Same as above
						Same as above
						Base of boring - 57 ft.



**Dvirka
and
Bartilucci**
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RPSB-62

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/11/00 - 02/11/00

Total Depth: 42.00'

Remarks: Samples selected for analysis at 5-7' and 40-42'.

Elevation: 8.06'

Datum: Mean Sea Level

Logged By: John Schafer

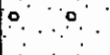
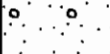
Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
5		5-7'	0.0 ppm 0.6 ppm 0.8 ppm			Tan-gray, fine-med SAND, loose, wet at 6.5'
10		10-12'	1.6 ppm 2.5 ppm 2.3 ppm	0.0 ppm 3.7 ppm 2.0 ppm		Gray, fine-med SAND, w/trace fine gravel, loose, wet
15		15-17'	0.4 ppm 1.6 ppm 1.9 ppm	0.4 ppm 0.5 ppm 0.5 ppm		Black, fine-med SAND, med dense, wet
20		20-22'	1.0 ppm 0.9 ppm	0.0 ppm 2.0 ppm		Black, coarse SAND, to gray fine SAND w/hydrogen sulfide-like odor, wet
25		25-27'	2.0 ppm 15.0 ppm	0.0 ppm 22.3 ppm		Gray, fine SAND, hydrogen sulfide-like odor, wet H2S = 3 ppm

Location: Rockaway Park	Site Id: RPSB-62
Purpose: Soil Boring	Total Depth: 42.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
		30-32'	0.5 ppm 2.1 ppm 3.5 ppm	0.1 ppm 0.0 ppm 0.4 ppm		Gray, fine-med SAND, med dense, hydrogen sulfide-like odor, wet
3		35-37'	0.0 ppm 10.1 ppm	0.0 ppm		Gray, fine SAND, med dense, wet
4		40-42'	0.0 ppm	0.0 ppm		Same as above
						Base of boring- 42 ft.
6						
9						
12						
15						
18						
21						
24						
27						
30						
33						
36						
39						
42						



Site Id: RPSB-63

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/23/00 - 02/23/00

Total Depth: 47.00'

Remarks: Samples selected for analysis at 15-17' and 45-47'.

Elevation: 8.16'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		5-7'	0.0 ppm		Tan-brown, fine-med SAND, loose, moist
10		10-12'	0.0 ppm		Gray, med-fine SAND, med dense, moist
15		15-17'	1.3 ppm 2.5 ppm		Same as above, w/NAPL/naphthalene-like odor
20		20-22'	21.5 ppm 20.3 ppm		Same as above
25		25-27'	240 ppm 216 ppm		Same as above

Location: Rockaway Park	Site Id: RPSB-63
Purpose: Soil Boring	Total Depth: 47.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30		30-32'	31.5 ppm 14.7 ppm		Gray, med-fine SAND, w/mild NAPL/naphthalene-like odor, hydrogen sulfide-like odor, some staining, medium dense, wet
35		35-37'	18.5 ppm 18.9 ppm		Same as above, no staining
40		40-42'	0.0 ppm		Gray, med-fine SAND, w/mild hydrogen sulfide-like odor, med dense, moist
45		45-47'	0.0 ppm		Gray, med-fine SAND, w/mild hydrogen sulfide-like odor, med dense, moist
					Base of boring- 47 ft.



Site Id: RPSB-64

Location: Rockaway, New York

Purpose: Soil Boring

Date(s): 10/11/99 - 10/11/99

Total Depth: 16.00'

Remarks: Samples selected for analysis at 4-6', 10-12', and 14-16'.

Elevation: 7.47'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 1.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-2'		0.0 ppm			Black-brown TOPSOIL w/gravel, black tar staining
2-4'		0.0 ppm			Yellow-orange, medium SAND and GRAVEL
		0.0 ppm			Same as above
4-6'		0.0 ppm			Yellow-orange, medium SAND and GRAVEL, w/isolated red stains
5		0.0 ppm			Orange, medium SAND, loose, w/isolated black tar stains, slight odor
6-8'		0.0 ppm			Orange, med-fine SAND, loose, w/isolated black tar stains, slight odor
		0.0 ppm			Brown-gray, fine SAND, dense, moist
8-10'		0.0 ppm			Brown-gray, medium-fine SAND, dense, discolored, moist
10		0.0 ppm			Brown-gray, fine SAND, dense, wet
10-12'		0.0 ppm			Gray, fine SAND, dense, w/slight tar-like odor, wet
		0.0 ppm			Light beige, medium-fine SAND, compact, moist
12-14'		0.0 ppm			Gray, fine SAND, dense, moist
		0.0 ppm			Gray, fine SAND, dense, w/tar-like odor, wet
14-16'		0.0 ppm			Gray, fine SAND, dense, slight tar-like odor, moist
15		0.0 ppm			Some as above
		0.0 ppm			Gray, medium SAND, dense, w/slight tar-like odor, moist
					Base of boring- 16 ft.
20					
25					

Site Id: RPSB-65

Location: Rockaway, New York

Purpose: Soil Boring

Date(s): 11/12/99 - 11/12/99

Total Depth: 16.00'

Remarks: Samples selected for analysis at 6-8', 10-12', and 14-16'.

Elevation: 6.79'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0		0-4'	0.0 ppm		Gray, medium SAND, soft
			0.0 ppm		Beige, medium SAND
					Light beige, medium-fine SAND, soft, w/slight tar-like odor
4		4-8'	0.0 ppm		Brown-beige, fine SAND, soft, discolored, slight odor
			0.0 ppm		Beige, fine SAND, dense, slight odor, moist
			0.0 ppm		Beige-orange, fine SAND, dense, slight odor, moist
8		8-12'	17.9 ppm		Gray, fine SAND, dense, naphthalene-like odor, moist
			0.0 ppm		Beige, fine SAND, dense, slight tar-like odor, moist
10			0.0 ppm		Gray, fine SAND, dense, slight odor, moist
					Gray, medium-fine SAND, dense, moist
		12-16'	0.0 ppm		Gray, fine SAND, dense, w/slight tar-like odor, moist
			0.0 ppm		
15			0.0 ppm		Gray, medium SAND, dense, slight odor, moist
					Base of Boring- 16 ft.
20					
25					

Site Id: RPSB-66

Location: Rockaway, New York

Purpose: Soil Boring

Date(s): 11/12/99 - 11/12/99

Total Depth: 16.00'

Remarks: Samples selected for analysis at 6-8', 10-12', and 14-16'.

Elevation: 7.05'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Geoprobe

Contractor: Zebro Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm 0.0 ppm		Brown, TOPSOIL Beige, medium SAND
5		4-8'	0.0 ppm 0.0 ppm 38.0 ppm 64.0 ppm		Light beige, medium SAND Beige, fine SAND, soft Brown, fine SAND, dense, w/solvent-like odor, moist
10		8-12'	3.5 ppm 29.0 ppm 10.4 ppm 59.0 ppm 21.0 ppm		Black, fine SAND, w/tar-like odor, wet Black, fine SAND, dense, w/naphthalene-like odor, wet Black-gray, fine SAND, dense, w/naphthalene-like odor, wet Black, fine SAND, black tar stained, w/naphthalene-like odor, wet
15		12-14'	0.6 ppm 8.0 ppm 18.0 ppm 20.0 ppm		Black-gray, medium-fine SAND, dense, w/naphthalene-like odor, wet Black-gray, fine SAND, dense, w/naphthalene-like odor, wet
20					Same as above
25					Base of Boring- 16 ft.

Site Id: RPSB-67

Location: Rockaway, New York

Purpose: Soil Boring

Date(s): 11/11/99 - 11/11/99

Total Depth: 16.00'

Remarks: Samples selected for analysis at 2-4', 10-12', and 12-14'.

Elevation: 8.18'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 1.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-2'	0.0 ppm		Brown, TOPSOIL w/black coal mix
		2-4'	0.0 ppm		Gray-black, medium SAND, w/black tar staining, tar-like odor
					Orange-beige, medium SAND, w/black staining
		4-6'	0.0 ppm		Black, medium SAND, w/black tar staining
5					Black-gray to orange-yellow, fine SAND, moist
		6-8'	0.0 ppm		Light beige, fine SAND, orange staining, moist
					Orange-yellow, medium SAND
		8-10'	0.0 ppm		Beige, medium-fine SAND, orange staining, moist
					Beige, medium SAND, orange staining, wet
10		10-12'	0.0 ppm		Beige-gray, fine SAND, wet
					Light brown-gray, fine SAND, wet
		12-14'	0.0 ppm		Gray, fine SAND, wet
					Light brown-gray, fine SAND, wet
		14-16'	0.0 ppm		Gray, fine SAND, wet
15			0.0 ppm		Gray, medium-fine SAND, wet
					Base of boring- 16 ft.
20					
25					



Site Id: RPSB-68

Location: Rockaway, New York

Purpose: Soil Boring

Date(s): 11/11/99 - 11/11/99

Total Depth: 16.00'

Remarks: Samples collected for analysis at 6-8', 8-10', and 14-16'.

Elevation: 7.86'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 1.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-2'		0-2'	0.0 ppm		Dark brown, TOPSOIL w/black coal
2-4'		2-4'	0.0 ppm		Dark brown, medium SAND
4-6'		4-6'	0.0 ppm		Orange-yellow, medium SAND
6-8'		6-8'	0.0 ppm		Brown, medium-coarse SAND
8-10'		8-10'	0.0 ppm		Beige, medium SAND, yellow-orange staining, moist
10-12'		10-12'	0.0 ppm		Gray-brown, medium SAND, moist
12-14'		12-14'	0.0 ppm		Gray-orange, medium SAND, wet
14-16'		14-16'	0.6 ppm		Beige-dark brown, medium SAND, moist
			0.0 ppm		Gray-beige, fine SAND, moist
					Light beige, medium SAND, w/slight tar-like odor, moist
					Gray, medium-fine SAND, no odor, moist
					Gray, fine SAND, wet
					Gray, coarse SAND, moist, w/slight naphthalene-like odor
					Base of boring- 16 ft.



Site Id: RPSB-69

Location: Rockaway, New York

Purpose: Soil Boring

Date(s): 11/12/99 - 11/12/99

Total Depth: 16.00'

Remarks: Samples selected for analysis at 6-8', 10-12', and 14-16'.

Elevation: 7.44'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'			0.0 ppm		Brown, fine sandy TOPSOIL, soft
			0.0 ppm		Brown, fine SAND
			0.0 ppm		Brown, fine SAND, moist
4-8'			0.0 ppm		Block, coarse SAND, w/trace angular gravel
			0.0 ppm		Brown, medium SAND
			0.0 ppm		Brown, medium-fine SAND, moist
8-12'			0.0 ppm		Brown-gray, fine SAND, w/slight naphthalene-like odor, wet
			0.0 ppm		Gray, medium SAND, w/naphthalene-like odor, moist
			0.0 ppm		Gray-black, medium SAND, light staining, slight naphthalene-like odor, moist
12-16'			4.5 ppm		Gray, fine SAND, dense, strong naphthalene-like odor
			35.0 ppm		
			39.0 ppm		Same as above
					Base of Boring- 16 ft.



Site Id: RPSB-70

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/03/00 - 03/03/00

Total Depth: 12.00'

Remarks: Samples selected for analysis at 4-6', 6-8', 8-10'

Elevation: 8.55'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT FILL
5		4-8'	0.0 ppm		Brown-black, coarse sandy FILL w/coal & shell fragments, glass, loose
			0.0 ppm		Brown, med-fine SAND, medium dense, moist
10		8-12'	0.0 ppm		Brown, med-fine SAND, medium dense, wet
			0.0 ppm		Same as above
					No recovery (10'-12')
					Base of boring- 12 ft.
15					
20					
25					

Site Id: RPSB-71

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/03/00 - 03/03/00

Total Depth: 12.00'

Remarks: Samples selected for analysis at 4-6', 6-8', 8-10'

Elevation: 8.96'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT
					FILL
					Tan-red-brown, med-fine SAND, some staining, loose
5		4-8'	0.0 ppm		
			0.0 ppm		Same as above
			0.0 ppm		Red, med-fine SAND, some staining, dense, wet
		8-12'	0.0 ppm		Same as above
10			0.0 ppm		Same as above
					Gray, med-fine SAND, some staining, odor, wet
					Base of boring- 12 ft.
15					
20					
25					

Site Id: RPSB-72

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/02/00 - 03/02/00

Total Depth: 12.00'

Remarks: Samples selected for analysis at 4-6', 6-8', 8-10

Elevation: 8.16'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebro Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT FILL
4-8'			0.0 ppm		Red-tan, med-fine SAND, dense
8-12'			0.0 ppm		Same as above
			0.0 ppm		Red, med-fine SAND, some staining, med dense, moist
			0.0 ppm		Gray, med-fine SAND, some staining, med dense, moist
					Base of boring- 12 ft.



Site Id: RPSB-73

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/25/00 - 02/25/00

Total Depth: 14.00'

Remarks: Samples selected for analysis at 4-6', and 8-10'.

Elevation: 8.07'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT FILL
5		4-8'	0.0 ppm		Red, med-fine SAND, loose, moist
			0.0 ppm		Tan, med-fine SAND, loose, moist
			0.0 ppm		Brown, med-fine SAND, loose, moist
		8-12'	0.0 ppm		Brown, med SAND, some staining, med dense, moist
10			0.0 ppm		Gray, med-fine SAND, med dense, wet
		12-14'	0.0 ppm		Same as above
15					Base of boring- 14 ft.
20					
25					

Site Id: RPSB-74

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/25/00 - 02/25/00

Total Depth: 12.00'

Remarks: Samples selected for analysis at 4-6', 8-10', and 10-12'

Elevation: 8.31'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT FILL
4-6'		0.1 ppm			Tan-red, med-fine SAND, loose
6-8'		0.0 ppm			Tan-gray, med-fine SAND, some staining, med dense, wet
8-10'		0.0 ppm			Gray-brown, med-fine SAND, med dense, moist
10-12'		0.0 ppm			Gray-tan, med-fine SAND, med dense, moist
					Base of boring- 12 ft.



Site Id: RPSB-75

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/28/00 - 02/28/00

Total Depth: 12.00'

Remarks: Samples selected for analysis at 4-6', 6-8', 8-10'

Elevation: 8.83'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebro Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT FILL
5		4-6'	0.0 ppm		Brown-tan-gray, med-fine sandy FILL w/shell fragments, loose
		6-8'	0.0 ppm		Brown-gray, med-fine sandy FILL, dense, moist
		8-10'	0.0 ppm		Gray, med-fine sandy FILL w/shell fragments, mild organic-like odor, dense, moist
10		10-12'	0.0 ppm		Gray, med-fine sandy FILL w/shell & coal fragments, some staining, dense, moist
					Base of boring -- 12 ft.
15					
20					
25					



Site Id: RPSB-76

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/28/00 - 02/28/00

Total Depth: 12.00'

Remarks: Samples selected for analysis at 4-6', 6-8', and 8-10'

Elevation: 9.55'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT FILL
5		4-6'	0.0 ppm		Brn-blk, med sandy FILL, coal & shell fragments, some staining, dense, moist
		6-8'	0.0 ppm		Same as above
		8-10'	0.0 ppm		Tan-red, med-fine SAND, dense, moist Same as above
10		10-12			No recovery (10'-12')
					Base of boring- 12 ft.
15					
20					
25					



Site Id: RPSB-77

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/28/00 - 02/28/00

Total Depth: 12.00'

Remarks: Samples selected for analysis 4'-6', 6'-8', and 8'-10'.

Elevation: 10.24'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method:

Contractor: Zebra Environmental

Borehole Dia.: 0.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT FILL
5		4-8	0.0 ppm 0.0 ppm 0.0 ppm		Tan-black, med-fine sandy FILL w/coal fragments Same as above, black Black-gray, med-fine sandy FILL, w/coal fragments, some staining, loose
10		8-12	0.0 ppm 0.0 ppm 0.0 ppm		Same as above Same as above, tan Same as above
					Base of boring- 12 ft.



Site Id: RPSB-78

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/29/00 - 02/29/00

Total Depth: 12.00'

Remarks: Samples selected for analysis at 4-6', 6-8', 8-10'

Elevation: 10.95'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebro Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT FILL
5		4-8	0.0 ppm		Tan, med-fine SAND, dense, moist
			0.0 ppm		Brown, med-fine SAND, dense, moist
			0.0 ppm		Brown-gray, med-fine SAND, med dense, moist
10		8-12	0.0 ppm		Tan-brown, med-fine SAND, some staining, loose, moist
			0.0 ppm		Same as above
					Same as above
					Base of boring- 12 ft.
15					
20					
25					

Site Id: RPSB-79

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/01/00 - 03/01/00

Total Depth: 12.00'

Remarks: Samples selected for analysis at 8-10', 10-12'

Elevation: 11.58'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		4-8'			PAVEMENT FILL
					No recovery (4'-8')
10		8-12'	1.1 ppm 14.2 ppm 35.5 ppm 287 ppm		Tan-brown-black, med sandy FILL, coal fragments, some staining, loose Same as above
					Olive-brown, med-fine SAND, slight hydrocarbon-like odor, some staining, dense, moist
					Base of boring- 12 ft.

Site Id: RPSB-80

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/01/00 - 03/01/00

Total Depth: 12.00'

Remarks: Samples selected for analysis at 4-6', 6-8', 8-10'

Elevation: 12.20'

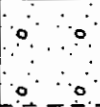
Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5		4-8'	5.6 ppm 20.1 ppm 20.3 ppm 19.1 ppm		PAVEMENT FILL Brown, med-coarse sandy FILL, w/concrete fragments, mild odor, loose Black-brown, med sandy FILL, w/coal fragments, mild odor, some staining, loose Tan, med-fine sandy FILL w/brown staining, coal fragments, odor, loose Same as above, but black
10		8-12'	33.5 ppm 17.8 ppm 30.2 ppm 2000+ ppm		Bm, med sandy FILL w/coal frags, small rocks, hydrocarbon-like odor, some staining, moist Tan, med-fine SAND, w/some staining, hydrocarbon-like odor, loose Gray-tan, med-fine SAND, w/some staining, strong hydrocarbon-like odor, dense, moist Same as above Base of boring- 12 ft.



Site Id: RPSB-81

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/01/00 - 03/01/00

Total Depth: 12.00'

Remarks: Samples selected for analysis at 4-6', 6-8', 8-10'

Elevation: 10.17'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT FILL
5		4-8'	0.6 ppm		Brown-black, med-coarse sandy FILL, some staining
			0.0 ppm		Same as above, w/clinker
					Tan-brown, med sandy FILL, some staining, loose
		8-12'	0.0 ppm		Black-brown-tan, med sandy FILL w/some staining, granite fragments
10			0.0 ppm		Tan-gray, med-fine SAND, some staining, dense, moist
					Some as above
					Some as above
					Base of boring- 12 ft.
15					
20					
25					



Site Id: RPSB-82

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/02/00 - 03/02/00

Total Depth: 12.00'

Remarks: Samples selected for analysis at 4-6', 6-8', 8-10'

Elevation: 8.19'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT FILL
5		4-8'	0.0 ppm		Brown-tan, med sandy FILL, w/coal fragments, some staining
			0.0 ppm		Same as above
			0.0 ppm		Brown-gray, med-fine SAND, w/some staining, hydrogen sulfide-like odor, med dense, moist
8		8-12'	0.0 ppm		Gray, med-fine SAND, w/mild hydrocarbon-like odor, dense, moist
			1.6 ppm		Same as above
10			1.9 ppm		Same as above
			0.9 ppm		Tan, med-fine SAND, dense, moist
					Base of boring- 12 ft.

Site Id: RPSB-83

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/04/02 - 03/05/02

Total Depth: 44.00'

Elevation: 7.33'

Datum: Mean Sea Level

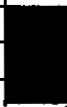
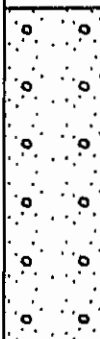
Logged By: William J. Ryan

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Remarks: Samples selected for analysis at 4-6', 9-11', and 40-41'.
Boring in same location as RPSB-IRM-02.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'		0-4'	0.0 ppm 0.0 ppm 0.0 ppm		Light brown, medium sandy FILL w/trace fine gravel, loose, dry (wet at 2.5')
4-8'		4-8'	0.9 ppm 0.4 ppm 0.7 ppm 0.6 ppm 0.8 ppm		Tan-light brown-orange (4-6') to brown-black (6-6.5'), medium sandy FILL, black staining in bottom .5', hydrocarbon-like odor, dry (wet at 6')
8-12'		8-12'	1.0 ppm 1.1 ppm 2.6 ppm 2.4 ppm 3.7 ppm 29.1 ppm		Brown, medium sandy FILL, loose, wet Black, fine-medium sandy FILL, loose, mild hydrocarbon-like odor, wet
12-16'		12-16'	0.0 ppm 0.0 ppm 6.2 ppm 1.2 ppm 2.1 ppm 0.9 ppm 0.3 ppm		Gray, fine-medium sandy FILL, loose, possible organic (H2S-like)/hydrocarbon-like odor but undetermined, wet Bk, FILL, clinker, coal fragments, gravel, loose, odor as above but mild, wet No recovery
16-20'		16-20'			
20-24'		20-24'	0.0 ppm 0.0 ppm 0.0 ppm		FILL, coal, clinker fragments Charcoal gray, fine-medium SAND, loose, possible organic (H2S-like) odor, wet
24-28'		24-28'	0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine-medium SAND, loose, organic (H2S-like) odor, wet
28-32'		28-32'	0.0 ppm 0.0 ppm 0.0 ppm		Gray, medium-coarse SAND w/trace sea shell fragments, loose, mild organic (H2S-like) odor, wet

Location: Rockaway Park	Site Id: RPSB-83
Purpose: Soil Boring	Total Depth: 44.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
32		32-34'	34.0 ppm 23.0 ppm		Gray, fine-medium SAND, loose, strong organic (H2S-like) odor, wet
34		34-36'	19.8 ppm		Same as above
36		36-38'			No recovery
38		38-40'			No recovery
40		40-44'	31.9 ppm 0.0 ppm		Gray, fine-medium SAND, loose, moderate organic (H2S-like) odor, wet
44					Base of boring - 44 ft.



Site Id: RPSB-84

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/06/02 - 03/06/02

Total Depth: 42.00'

Remarks: Samples selected for analysis at 4-5', 24-26' and 36-37'.

Elevation: 6.95'

Datum: Mean Sea Level

Logged By: William J. Ryan

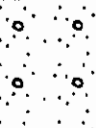
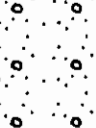
Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'		0.0 ppm 0.0 ppm 0.0 ppm			Orange-brown to brown, medium-coarse sandy FILL w/fine gravel, clinker, coal fragments, loose, moist
4-8'		0.0 ppm 0.0 ppm 0.0 ppm			Yellow-red, m-c sandy FILL, trace coal & clinker fragments, loose, moist Black, fine-coarse FILL w/coal and clinker fragments and pieces, trace red sand, loose, wet
8-12'		0.0 ppm 0.0 ppm 0.0 ppm			Black, FILL, coal and clinker fragments and pieces, trace orange-brown med-coarse sand, trace fine gravel, loose, organic (H2S-like) odor, wet
12-16'		0.0 ppm 0.0 ppm 0.0 ppm			Black, FILL, coal and clinker fragments and pieces, trace fine-coarse gravel, loose, slight organic (H2S-like) odor, wet
16-20'		12.7 ppm 6.2 ppm			Same as above
20-24'		5.2 ppm 61.3 ppm			Same as above Black, fine-medium-coarse SAND, loose, tar staining, organic (H2S-like) and naphthalene-like odor, light sheen on soil, wet
24-28'		114 ppm 78.5 ppm 68.5 ppm 54.4 ppm 60.3 ppm 32.0 ppm 26.3 ppm 46.4 ppm 78.1 ppm 94.3 ppm 44.7 ppm			Gray, fine-medium SAND, loose, tar banding (27'), very viscous tar staining on macro-core liner (24-24.5'), organic (H2S-like) and naphthalene-like odor, wet
28-32'					Gr, f-m SAND w/f-c gravel at 29', dk brown tar band (1.5" at 29'), m viscosity tar staining on macro-core liner (29-30'), organic (H2S-like) and naphthalene-like odor, light sheen on soil (29.5-30') wet

Location: Rockaway Park	Site Id: RPSB-84
Purpose: Soil Boring	Total Depth: 42.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
32		32-36'	24.7 ppm 87.5 ppm 118 ppm 64.1 ppm		Gray, fine-medium SAND, loose, organic (H2S-like) odor, light sheen on water in top of sample, wet
36		36-40'	34.3 ppm 28.5 ppm		Gray, fine-medium SAND, loose, organic (H2S-like) odor, wet (poor recovery, liner broke)
40		40-42'			No recovery
					Base of boring - 42 ft.

Site Id: RPSB-85

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/06/02 - 03/07/02

Total Depth: 50.00'

Remarks: Samples selected for analysis at 0-2', 24-25.5' and 36-38'.

Elevation: 5.63'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'		0-4'	6.1 ppm 69.7 ppm 14.7 ppm 14.9 ppm		Brown to orange-brown, fine-medium sandy FILL, clinker pieces, loose, moist (PID malfunction, possibly due to moisture)
4-8'		4-8'	15.5 ppm 2.0 ppm 21.6 ppm 4.8 ppm 1.3 ppm		Tan and orange, medium-coarse sandy FILL, clinker fragments, loose, wet FILL, clinker chunks and fragments, gravel (PID malfunction, possibly due to moisture)
8-12'		8-12'	1.3 ppm 5.8 ppm 1.8 ppm 0.8 ppm		Same as above, sea shell fragments (new PID)
12-16'		12-16'	0.9 ppm 0.7 ppm 0.5 ppm 0.7 ppm		FILL, clinker chunks and fragments, trace fine gravel, sea shell fragments, loose, wet
16-20'		16-20'	0.5 ppm 0.6 ppm 0.4 ppm		Black, FILL, coal and clinker pieces and fragments, trace fine gravel, loose, wet
20-24'		20-24'	0.4 ppm 0.6 ppm 0.6 ppm 0.4 ppm		Same as above
24-28'		24-28'	97.5 ppm 9.8 ppm 15.3 ppm		Bk-brown, fine-medium SAND w/f gravel and clinker fragments in top 2" Gray, medium-coarse SAND w/coarser lenses at 25 and 25.5', loose, tar banding at 24.5, 25 and 25.5', heavy tar staining on bottom 18" of macro-core liner, strong naphtholens-like odor, wet
28-32'		28-32'	6.1 ppm 14.7 ppm 12.3 ppm 27.9 ppm		Gray, fine-medium SAND w/trace sea shell fragments, loose, organic (H2S-like) odor, wet

Location: Rockaway Park	Site Id: RPSB-85
Purpose: Soil Boring	Total Depth: 50.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
32		32-36'	5.2 ppm 3.0 ppm 14.8 ppm 88.8 ppm 12.6 ppm 16.3 ppm	o o	Gray, fine-medium SAND w/trace sea shell fragments, loose, organic (H2S-like) odor, wet
36		36-40'	18.3 ppm 13.6 ppm 8.4 ppm 0.6 ppm 2.3 ppm	o o	Gray, fine-medium SAND, loose, strong organic (H2S-like) odor, wet
40		40-44'	49.7 ppm 20.2 ppm 80.3 ppm 86.4 ppm 104 ppm 144 ppm 77.3 ppm	o o	Same as above, organic (H2S-like) odor
44		44-48'	83.7 ppm	o o	Same as above, strong organic (H2S-like) odor
48		48-50'		o o	Same as above
					No recovery
					Base of boring - 50 ft.

Site Id: RPSB-86

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/07/02 - 03/07/02

Total Depth: 46.00'

Remarks: Samples selected for analysis at 4-6', 21-22' and 40-41'.

Elevation: 5.89'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan-gray to yellow-orange, fine-medium sandy FILL w/trace clinker, fine gravel and red brick, loose, black banding at .5 and 2', wet
5		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Yellow-orange to tan to gray, fine-medium sandy FILL, 2" clinker deposits at bottom, loose, moist (wet at 5')
		8-12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine-medium sandy FILL, loose, wet FILL, black clinker fragments and pieces, loose, wet
10		12-16'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine-medium sandy FILL, loose, wet FILL, black clinker fragments and pieces, loose, wet
15		16-20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		FILL, black clinker fragments and pieces, some fine-coarse gravel, loose, wet
20		20-24'	0.0 ppm 0.0 ppm 17.1 ppm 34.8 ppm		Same as above Black, CLAY w/some silt, soft, plastic, moderate organic (H2S-like) odor Charcoal gray, fine-medium SAND w/trace coarse sand, fine gravel, sea shell fragments, loose, organic (H2S-like) odor, wet
25		24-28'	0.9 ppm 2.8 ppm 5.3 ppm 11.3 ppm 7.7 ppm		Gray, fine-medium-coarse SAND, loose, moderate organic (H2S-like) odor, wet
30		28-32'	18.0 ppm 0.0 ppm 27.7 ppm 31.9 ppm		Same as above, fine-medium

Location: Rockaway Park	Site Id: RPSB-86
Purpose: Soil Boring	Total Depth: 46.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
32		32-36'	11.2 ppm 0.0 ppm 0.0 ppm 0.0 ppm 5.5 ppm		Gray, fine-medium SAND, loose, moderate organic (H2S-like) odor, wet Gray, fine-medium-coarse SAND, loose, mild organic (H2S-like) odor, wet
36		36-40'	66.3 ppm 51.3 ppm 82.1 ppm 66.6 ppm 29.4 ppm 47.0 ppm		Gray, fine-medium SAND, loose, moderate organic (H2S-like) odor, wet
40		40-44'	2.5 ppm 41.6 ppm		Same as above
44		44-46'			No recovery
46					Base of boring - 46 ft.



Site Id: RPSB-87

Location: Rackaway Park

Purpose: Soil Boring

Date(s): 03/08/02 - 03/08/02

Total Depth: 42.00'

Remarks: Samples selected for analysis at 4-6', 21-23' and 37-39'.

Elevation: 4.77'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'		0-4'	0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, medium sandy FILL, sandstone-like aggregate, bottom 10" contains coal, red brick and clinker fragments, loose, moist
4-8'		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Light brown, fine-medium sandy FILL, loose, wet
8-12'		8-12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
12-16'		12-16'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, iron oxide banding at 13.5-14'
16-20'		16-20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Red, m-c sandy FILL w/f-c gravel, sea shell fragments, loose, wet Lt br-orange, f-m sandy FILL w/some c sand and f gravel, loose, wet Gray, fine-medium sandy FILL w/sea shell fragments, loose, wet
20-24'		20-24'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray to tan-gray, medium-coarse sandy FILL, loose, wet Black, medium-coarse sandy FILL, clinker fragments, loose, wet Bk, CLAY w/trace silt, soft, plastic, mild organic (H2S-like) odor
24-28'		24-28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, medium-coarse SAND w/sea shell fragments, loose, wet Gray, fine-medium-coarse SAND w/trace sea shell fragments and fine gravel, loose, wet
28-32'		28-32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine-medium-coarse SAND, loose, mild organic (H2S-like) odor, wet



Site Id: RPSB-87A

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/28/02 - 03/28/02

Total Depth: 60.00'

Remarks: Samples selected for analysis at 38-40' and 58-60'.

Elevation: 6.79'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hollow Stem Auger

Contractor: Delta Well & Pump

Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5					Material descriptions begin at 30 ft.
10					
15					
20					
25					
30					
35					
40					
45					
50					
55					
60					

Location: Rockaway Park	Site Id: RPSB-87A
Purpose: Soil Boring	Total Depth: 60.00'
Consulting Firm: Dvirko & Bartilucci	Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30-32'	3.8 ppm 12.9 ppm	o o	Charcoal gray, fine-medium SAND, loose, moderate organic (H2S-like) odor, wet
		32-34'	0.0 ppm 0.0 ppm 3.8 ppm	o o	Same as above, trace coarse sand and sea shell fragments
		34-36'	0.0 ppm 0.0 ppm 13.5 ppm	o o	Charcoal gray, fine-med SAND, trace coarse sand and fine gravel, trace sea shell fragments, loose, moderate organic (H2S-like) odor, wet
		36-38'	0.0 ppm 0.0 ppm 28.0 ppm	o o	Same as above
		38-40'	0.0 ppm 0.0 ppm 0.0 ppm	o o	Same as above
		40-42'	0.0 ppm 0.0 ppm 12.5 ppm 27.0 ppm	o o	Gray, fine-medium SAND, loose, moderate organic (H2S-like) odor, wet
		42-44'	0.0 ppm 0.0 ppm 12.1 ppm	o o	Same as above
		44-46'	0.0 ppm 0.0 ppm 5.1 ppm	o o	Same as above
		46-48'	0.0 ppm 0.0 ppm 0.0 ppm	o o	Same as above
		48-50'	0.0 ppm 0.0 ppm 0.0 ppm	o o	Same as above
		50-52'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	o o	Gray, fine-medium SAND w/some coarse sand, trace sea shell fragments, loose, mild organic (H2S-like) odor, wet
		52-54'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	o o	Gray, fine-medium-coarse SAND w/trace fine gravel and sea shell fragments, loose, mild organic (H2S-like) odor, wet
		54-56'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	o o	Some as above
		56-58'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	o o	Same as above
		58-60'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	o o	Brown, fine-medium SAND, loose, wet
					Brown and gray, fine-medium SAND, loose, wet
					Base of boring - 60 ft.

Site Id: RPSB-88

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/01/01 - 11/01/01

Total Depth: 10.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 8.71'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hand Augered 0-4', Geoprobe 4-10'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'			Red-brown, fine-medium sandy FILL, loose, trace clinker, dry Yellow-orange, fine-medium SAND, loose, dry
5		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, gray banding, bottom 8" all orange, moist-wet at 6.25'
		8-10'	0.0 ppm 0.0 ppm 0.0 ppm		Orange, fine-medium SAND, loose, wet
10					Base of boring - 10 ft.
15					
20					
25					

Site Id: RPSB-89

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/13/01 - 11/14/01

Total Depth: 61.00'

Remarks: Samples selected for analysis at 7-9', 49-51' and 59-61'.

Elevation: 7.99'

Datum: Mean Sea Level

Lagged By: J. Schafer

Drilling Method: Hand Auger 0-5', Hollow Stem Auger 5-61'

Contractor: Delta Well & Pump

Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-5'					Brown, silty FILL, loose, dry Orange-brown, fine-coarse SAND w/same fine gravel and clam shells, loose, slightly moist Gray, fine SAND, loose, slightly moist Gray, fine SAND w/clam shells, loose, moist to wet at 5.5'
5-7'			0.0 ppm 0.0 ppm		
7-9'			4.0 ppm 2.0 ppm 3.0 ppm		Same as above, hydrocarbon-like odor, wet
9-11'			0.5 ppm 0.5 ppm 0.0 ppm		Gray-black, fine SAND, medium dense, possibly stained, hydrocarbon-like odor, wet
11-13'			0.0 ppm 0.0 ppm		Black, fine SAND, medium dense, slight hydrocarbon-like odor, wet
13-15'			4.5 ppm 1.0 ppm 0.0 ppm		Same as above, silt lens at 14'
15-17'			0.0 ppm 0.0 ppm 0.0 ppm		Black-gray, fine-coarse SAND w/trace fine gravel, medium dense, slight hydrocarbon-like odor, wet
17-19'			1.4 ppm 5.6 ppm 3.2 ppm		Gray, fine-coarse SAND w/clam shells, medium dense, mild naphthalene-like odor, wet
19-21'			0.0 ppm 0.6 ppm 2.6 ppm		Same as above, possible hornblende flecks, slight naphthalene-like odor
21-23'			0.0 ppm 7.3 ppm 6.0 ppm		Same as above, mild naphthalene-like odor
23-25'			2.1 ppm 4.3 ppm 7.1 ppm		Same as above, naphthalene-like odor
25-27'			6.6 ppm 0.0 ppm 0.0 ppm		Same as above, mild naphthalene-like odor
27-29'			0.0 ppm 4.5 ppm 4.3 ppm		Gray, fine-coarse SAND w/clam shells, medium dense, mild naphthalene-like odor, wet
29-31'			3.0 ppm 4.5 ppm		Same as above, fine sand, naphthalene-like odor

Location: Rockaway Park		Site Id: RPSB-89	
Purpose: Soil Boring		Total Depth: 61.00'	
Consulting Firm: Dvirka & Bartilucci		Borehole Dia.: 6.50in	
Depth (ft)	Recovery	Sample Interval	Material Description
31-33'		ppm	Gray, fine SAND w/clam shells, medium dense, naphthalene-like odor, wet
33-35'		ppm	Gray, fine-medium SAND w/hornblende/biotite, medium dense, slight naphthalene-like odor, wet
35-37'		ppm	Block, fine SAND, medium dense, slight hydrocarbon-like odor, wet
37-39'		ppm	Same as above, slight naphthalene-like odor
39-41'		ppm	Same as above
41-43'		ppm	Black-dark gray, fine SAND, medium dense, slight naphthalene-like odor, wet
43-45'		ppm	Dark gray, fine SAND w/small hornblende flecks, medium dense, hydrocarbon-like odor, wet
45-47'		ppm	Dark gray, very fine-fine SAND, medium dense, hydrocarbon-like odor, wet
47-49'		ppm	Same as above, hydrocarbon-like odor is stronger
49-51'		ppm	Dark gray, fine-coarse SAND w/hornblende and clam shells, loose, organic (H2S-like) odor, wet
51-53'		ppm	Same as above, no hornblende or clam shells
53-55'		ppm	Dark gray-gray, fine-coarse SAND to fine-medium SAND w/some coarse at 54.75', organic (H2S-like) odor, wet
55-57'		ppm	Dark gray, fine-coarse SAND w/hornblende, trace fine gravel, loose, slight organic (H2S-like) odor, wet
57-59'		ppm	Gray, fine-coarse SAND w/clam shells, trace coarse gravel, medium loose, slight organic (H2S-like) odor, wet
59-61'		ppm	Same as above
Base of boring - 61 ft.			



Site Id: RPSB-91

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/01/01 - 11/01/01

Total Depth: 30.00'

Remarks: Samples selected for analysis at 6-8' and 28-30'.

Elevation: 11.02'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hand Augered 0-4', Geoprobe 4-30'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'					Brown-orange, fine-medium-coarse sandy FILL w/trace fine gravel, loose, trace clinker, dry
4-8'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown-orange-tan, fine-medium sandy FILL, loose, coal fragments at 5.7', dry Brown-orange-tan, fine-medium SAND, loose, dry (moist at 6.2')
8-12'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan-gray, fine-medium SAND w/trace fine gravel, sea shells from 9.25-10.25', loose, wet
12-16'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 2.3 ppm 6.6 ppm		Gray, fine-medium SAND w/sea shells, loose, organic (H2S-like) odor, wet
16-20'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 2.2 ppm		Same as above, no odor Bk (discolored), f sandy CLAY lens, plastic, mild naphthalene-like odor, wet Charcoal gray, fine SAND, loose, organic (H2S-like) odor, wet
20-24'			2.3 ppm 1.5 ppm 2.8 ppm 15.4 ppm 16.2 ppm 13.2 ppm 7.4 ppm		Gray, fine-medium SAND w/sea shells, loose, dark black discoloration from 21.5-22', organic (H2S-like) odor, mild naphthalene-like odor (more prevalent from 21.5-22'), wet
24-28'			28.8 ppm 12.7 ppm 4.5 ppm 6.4 ppm		Gray, fine-coarse SAND w/4" coarse sand-fine gravel lens at 24.1', loose, organic (H2S-like) odor, possible mild naphthalene-like odor, wet
28-30'			14.6 ppm 0.7 ppm 2.0 ppm 0.4 ppm		Gray, fine-medium SAND w/trace fine gravel and sea shells, loose, organic (H2S-like) odor, wet (Base of boring - 30 ft.)

Site Id: RPSB-92

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 10/29/01 - 10/30/01

Total Depth: 56.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 12.08'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hand Augered 0-4', Geoprobe 4-56'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'			Dark brown-brown, sandy FILL w/some fine gravel, loose, trace clinker, dry
5		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-medium sandy FILL, loose, coal fragments, dry Same as above, mild naphthalene-like odor at 5.75'
10		8-12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-medium-coarse sandy FILL w/concrete debris at 8.6', loose, trace coal fragments, mild naphthalene-like odor at 10.6', moist (wet at 9.6')
15		12-16'	0.0 ppm 0.0 ppm 1.3 ppm 2.9 ppm		Brown, fine-medium-coarse sandy FILL, loose, coal fragments, mild naphthalene-like odor, sheen on water and soils, wet
20		16-20'	29.5 ppm 14.1 ppm 50 ppm 71.2 ppm 177 ppm 38.7 ppm		Black-brown, fine-medium SAND, loose, black staining at 16.25', 16.75', 18.25', moderate naphthalene-like odor, sheen on soil, wet
25		20-24'	234 ppm 362 ppm 300 ppm 329 ppm 43.9 ppm 51.2 ppm 87.5 ppm		Brown-black, fine-medium-coarse SAND, loose, NAPL saturated, staining, strong naphthalene-like odor, wet Gray, fine-medium SAND, loose, moderate naphthalene-like odor, wet
30		24-28'			Same as above (liner jammed, sample placed onto polyliner) Brown-black, fine-medium-coarse SAND, heavy staining (DNAPL)
35		28-30'	511 ppm 112 ppm 163 ppm		Brown, medium-coarse SAND, loose, tar staining, strong naphthalene-like odor, wet

Location: Rackaway Park	Site Id: RPSB-92
Purpose: Soil Boring	Total Depth: 56.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-32'		510 ppm			Br-bk, f-c SAND w/f gravel, loose, tar staining, strong naphthalene-like odor
32-34'		141 ppm			Brown, fine SAND, loose, tar staining (less than above), moderate naphthalene-like odor, wet
34-36'		296 ppm			Brown, fine SAND, loose, NAPL saturated, tar staining, strong naphthalene-like odor, wet (liner jammed, sample placed into plastic bag)
36-38'		260 ppm			Br, fine-med SAND, loose, tar staining (less than above), strong naphthalene-like odor, wet (liner jammed, sample placed into plastic bag)
38-40'		195 ppm			Same as above, fine, moderate tar staining
40-42'		292 ppm			Brown-gray, fine SAND, loose, tar staining from 40.5-41', moderate naphthalene-like odor, wet
42-44'		189 ppm			Same as above, NAPL staining, strong naphthalene-like odor
44-46'		130 ppm			Gray, fine-medium SAND, loose, tar blebs, moderate naphthalene-like odor, wet (liner jammed, sample placed into plastic bag, headspace PID)
46-48'		85.3 ppm			Gr, f SAND, loose, light staining and tar blebs (upper 6"), mild naphthalene-like odor, wet (liner jammed, sample placed into plastic bag)
48-50'		54.9 ppm			Same as above, tar blebs but no staining, moderate naphthalene-like odor (liner jammed, sample placed into plastic bag, headspace PID)
50-52'		76.4 ppm			Gray, fine SAND, loose, moderate tar staining w/heavy black banding throughout, strong naphthalene-like odor, wet
52-54'		65.7 ppm			Br-red, fine SAND, loose, NAPL saturated, strong naphthalene-like odor, wet
54-56'		126 ppm			Brownish gray, fine SAND, heavy banding, strong naphthalene-like odor
		214 ppm			Brown-gray, fine SAND, loose, NAPL saturated (54-54.8'), black staining, wet
		233 ppm			Gray, fine-coarse SAND, loose, NAPL saturated, black banding at 55', strong naphthalene-like odor, wet
		86 ppm			Base of boring - 56 ft.



Site Id: RPSB-92A

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/06/01 - 11/08/01

Total Depth: 100.00'

Remarks: Sample selected for analysis at 98-100'.

Elevation: 8.46'

Datum: Mean Sea Level

Logged By: J. Schafer

Drilling Method: Hollow Stem Auger

Contractor: Delta Well & Pump

Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5					Material descriptions begin at 40 ft.
10					Material descriptions begin at 40 ft.
15					Material descriptions begin at 40 ft.
20					Material descriptions begin at 40 ft.
25					Material descriptions begin at 40 ft.

Location: Rockaway Park	Site Id: RPSB-92A
Purpose: Soil Boring	Total Depth: 100.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PTD	Graphic Log	Material Description
34					
40		40-42'	40 ppm 70 ppm		Dark gray, fine SAND w/some silt lenses, medium dense, layers of brown staining, naphthalene-like odor, wet
42		42-44'	68 ppm 80 ppm 90 ppm		Same as above, dense with lenses of brown NAPL
44		44-46'	50 ppm 80 ppm 95 ppm		Gray, fine SAND w/silt lens at 46', dense, lenses of brown NAPL, brown staining, naphthalene-like odor, wet
46		46-48'	75 ppm 100 ppm 100 ppm		Same as above, naphthalene-like odor, no silt or NAPL
48		48-50'	80 ppm 80 ppm 108 ppm		Same as above, medium dense, naphthalene-like odor
50		50-52'	80 ppm 80 ppm 80 ppm		Same as above
52		52-54'	80 ppm 80 ppm 100 ppm		Gray, fine SAND w/some mica flakes, medium dense, intermittent staining, naphthalene-like odor, wet
54		54-56'	80 ppm 80 ppm 80 ppm		Dark gray, fine-coarse SAND w/some snail shells, medium dense, moderate brown staining, naphthalene-like odor
56		56-58'	80 ppm 80 ppm 80 ppm		Same as above, heavy staining, shells, wet
58		58-60'	80 ppm 80 ppm 80 ppm		Same as above, shells, mica flakes, dense
60		60-62'	80 ppm 80 ppm 80 ppm		Dark gray, fine SAND w/mica flakes, medium dense, naphthalene-like odor, sheen, wet
62		62-64'	80 ppm 80 ppm 80 ppm		Some as above, dense
64		64-66'	80 ppm 80 ppm 80 ppm		Some as above
66		66-68'	80 ppm 80 ppm 80 ppm		Dark gray, fine SAND, dense, light staining, naphthalene-like odor, sheen, wet
68		68-70'	10 ppm 10 ppm 10 ppm		Black, v fine-fine SAND, dense, slight hydrocarbon-like odor, sheen, wet

Location: Rockaway Park	Site Id: RPSB-92A
Purpose: Soil Boring	Total Depth: 100.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
70-72'		21 ppm 25 ppm 15 ppm 1.3 ppm 9.0 ppm 5.0 ppm			Gr, f SAND w/mica, biotite flakes, m dense, naphthalene-like odor, sheen, wet
72-74'		3.5 ppm 2.5 ppm			Brown, silty very fine SAND w/mica and biotite flakes, dense, moist
74-76'		21 ppm 35 ppm 35 ppm 45 ppm 21 ppm 25 ppm 15 ppm			Brown, fine sandy SILT, dense, slight naphthalene-like odor, wet
76-78'		10 ppm 14 ppm 4.2 ppm 3.5 ppm 4.6 ppm 1.2 ppm 4.0 ppm 8.0 ppm 7.0 ppm 4.0 ppm 8.0 ppm 3.5 ppm 3.0 ppm 13 ppm 30 ppm 80 ppm 15 ppm 35 ppm 40 ppm 220 ppm			Brown-gray, fine SAND w/mico flakes, medium dense, naphthalene-like odor, moist, minute blebs of floating NAPL
78-80'		20 ppm 30 ppm 25 ppm 45 ppm 3.0 ppm 65 ppm 130 ppm 120 ppm 75 ppm 80 ppm 120 ppm 80 ppm 250 ppm 40 ppm 100 ppm 100 ppm 80 ppm 46 ppm 46 ppm			Brown, fine-very fine SAND, medium dense, naphthalene-like odor, wet
80-82'					Brown, fine SAND w/mica flakes, medium dense, naphthalene-like odor, sheen, blebs of floating NAPL, very moist
82-84'					Brown, very fine-fine SAND w/mica flakes, medium dense, slight naphthalene-like odor, moist
84-86'					Same as above, dark brown staining throughout, naphthalene-like odor, sheen
86-88'					Some as above, dense, staining at 87.25-88', no sheen
88-90'					Same as above, heavy NAPL staining at 89.5-90', heavy naphthalene-like odor
90-92'					Same as above, intermittent staining from 91-92', naphthalene-like odor
92-94'					Dark brown, very fine-fine SAND, dense, brown staining, heavy naphthalene-like odor, moist
94-96'					Brown, very fine-fine SAND, dense, heavy brown staining, heavy naphthalene-like odor, very moist
96-98'					Same as above
98-100'					Same as above
					Base of boring - 100 ft.



Site Id: RPSB-94

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 10/31/01 - 10/31/01

Total Depth: 20.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 9.61'

Datum: Mean Sea Level

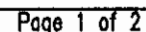
Logged By: William J. Ryan

Drilling Method: Hand Augered 0-4', Geoprobe 4-20'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'			Brown-orange-gray, fine-medium sandy FILL, loose, dry
5		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan (beach), fine-med sandy FILL, loose, 1" piece of clinker at 4.2', dry Tan (beach), fine-medium SAND, loose, dry (moist at 6.7')
10		8-12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, moist Brown-orange, fine-medium SAND w/sea shells, loose, 2" band of dark brown at 9.25', bottom 6" is charcoal gray, wet
15		12-16'	5.5 ppm 1.6 ppm 0.0 ppm 0.0 ppm 2.6 ppm		Charcoal gray, fine SAND, loose, bottom 8" is dark black with mild naphthalene-like odor, wet
20		16-20'	12.1 ppm 7.6 ppm 21.7 ppm 4.8 ppm 0.2 ppm 1.4 ppm 5.1 ppm 4.4 ppm		Charcoal gray, fine-medium-coarse SAND w/sea shells, loose, mild naphthalene-like odor, wet
					Base of boring - 20 ft.





Site Id: RPSB-96

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/05/01 - 11/06/01

Total Depth: 40.00'

Remarks: Samples selected for analysis at 4-6' and 38-40'.

Elevation: 7.86'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hand Augered 0-4', Geoprobe 4-40'

Contractor: Zebro Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'					Orange, fine-medium sandy FILL w/trace gravel, loose, dry
4-8'			0.0 ppm 0.0 ppm 0.0 ppm		Orange-brown-gray, fine-medium sandy FILL, loose, trace clinker at 4.4', dry Orange-brown-gray, fine-medium SAND w/sea shells, loose, wet
8-12'			0.0 ppm 0.0 ppm 0.0 ppm		Orange-brown, fine-medium SAND, loose, wet Tan-gray, fine-medium SAND w/sea shell fragments, loose, wet
12-16'			0.0 ppm 0.0 ppm 0.0 ppm		Same as above, fine
16-20'			0.0 ppm 0.0 ppm 0.0 ppm		Charcoal gray, fine SAND w/trace of clay at 13.75', loose, mild organic (H ₂ S-like) odor, wet Charcoal gray, fine SAND, loose, mild hydrocarbon-like odor, wet
20-22'			2.9 ppm		Charcoal gr, f-m SAND w/shell fragments, loose, possible organic/hydrocarbon-like odor, wet (liner jommed, sample placed in plastic bag, headspace PID)
22-24'			0.0 ppm 0.0 ppm 0.0 ppm		Same as above, organic (H ₂ S-like) odor
24-26'			0.0 ppm		Same as above, fine
26-28'			0.0 ppm 0.0 ppm 0.0 ppm		Charcoal gray, fine-medium SAND, loose, mild organic (H ₂ S-like) odor, wet
28-30'			0.0 ppm 0.0 ppm 0.0 ppm		Same as above

Location: Rockaway Park	Site Id: RPSB-96
Purpose: Soil Boring	Total Depth: 40.00'
Consulting Firm: Dvirko & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
30-32'		30-32'	0.1 ppm 0.1 ppm 0.0 ppm 0.0 ppm		Charcoal gray, fine-medium SAND, loose, mild organic (H2S-like) odor, wet
32-34'		32-34'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, no odor
34-36'		34-36'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine-medium SAND, loose, wet
36-38'		36-38'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Charcoal gray, fine-medium SAND, loose, mild organic (H2S-like) odor, wet
38-40'		38-40'	0.0 ppm 0.0 ppm		Same as above, no odor (liner jammed, sample placed in plastic bag, headspace PID)
40					Base of boring - 40 ft.



Site Id: RPSB-97

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/26/01 - 11/27/01

Total Depth: 59.00'

Remarks: Samples selected for analysis at 5-7', 31-33', 47-49' and 57-59'.

Elevation: 7.27'

Datum: Mean Sea Level

Logged By: J. Schofer

Drilling Method: Hand Auger 0-5', Hollow Stem Auger 5-59'

Contractor: Delta Well & Pump

Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-5'			Orange-brown-tan, fine-medium SAND, loose, slight hydrocarbon-like odor, dry
5		5-7'	18 ppm 82 ppm 58 ppm		Black, fine-medium SAND, semi-loose, heavy black staining, heavy hydrocarbon-like odor, wet
		7-9'	2000+ ppm 2000+ ppm 2000+ ppm		Gray, fine SAND, loose, heavy hydrocarbon-like odor, wet
10		9-11'	400 ppm 2000+ ppm 2000+ ppm		White-gray, fine-medium SAND, semi-loose, heavy hydrocarbon-like odor, wet
		11-13'	2000+ ppm 600 ppm 230 ppm		Gray, fine SAND, loose, heavy hydrocarbon-like odor, wet
15		13-15'	35 ppm 170 ppm 118 ppm		Gray-black, fine-coarse SAND w/trace fine gravel, semi-loose, hydrocarbon-like odor, wet
		15-17'	25 ppm 45 ppm 67 ppm		Same as above, black, loose
20		17-19'	80 ppm 95 ppm 20 ppm		Black, fine-coarse gravelly SAND w/shells, semi-loose, hydrocarbon-like odor, wet
		19-21'	3.0 ppm 40 ppm 20 ppm		Dark gray, fine-medium SAND, loose, hydrocarbon-like odor, wet
25		21-23'	8.0 ppm 11 ppm 7.0 ppm		Dark gray, fine-coarse SAND w/shells, loose, slight hydrocarbon-like odor, wet
		23-25'	33 ppm 70 ppm 11 ppm		Same as above
30		25-27'	2.5 ppm 3.0 ppm		Some as above, gray, medium dense, no shells
		27-29'	150 ppm 27 ppm 20 ppm		Gray, fine SAND, medium dense, slight hydrocarbon-like odor, wet
35		29-31'	12 ppm 8.0 ppm		Some as above, fine-medium

Location: Rockaway Park	Site Id: RPSB-97
Purpose: Soil Boring	Total Depth: 59.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		31-33'	5.0 ppm 2.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	o o	Gray, fine-medium SAND, medium dense, slight hydrocarbon-like odor, wet
		33-35'	3.0 ppm 2.2 ppm 4.0 ppm 3.0 ppm 4.0 ppm	o o	Gray, fine SAND, medium dense, wet Same as above, dark gray
35		35-37'	4.0 ppm 5.0 ppm 1.0 ppm 8.0 ppm 4.0 ppm 3.0 ppm 6.0 ppm	o o	Same as above, slight hydrocarbon-like odor
		37-39'	1.5 ppm 1.5 ppm 2.5 ppm 1.5 ppm 8.5 ppm 4.8 ppm 2.0 ppm 1.5 ppm 1.5 ppm 8.0 ppm 5.0 ppm 1.2 ppm 5.0 ppm 1.0 ppm 11.5 ppm 1.5 ppm	o o	Dark gray-light gray, fine-medium SAND, medium dense, hydrocarbon-like odor from 37-37.5', slight odor from 37.5-39', wet
40		39-41'	1.5 ppm 1.5 ppm 2.5 ppm 1.5 ppm 8.5 ppm 4.8 ppm 2.0 ppm 1.5 ppm 1.5 ppm 8.0 ppm 5.0 ppm 1.2 ppm 5.0 ppm 1.0 ppm 11.5 ppm 1.5 ppm	o o	Gray, fine SAND, medium dense, hydrocarbon-like odor, wet
		41-43'	1.5 ppm 1.5 ppm 2.5 ppm 1.5 ppm 8.5 ppm 4.8 ppm 2.0 ppm 1.5 ppm 1.5 ppm 8.0 ppm 5.0 ppm 1.2 ppm 5.0 ppm 1.0 ppm 11.5 ppm 1.5 ppm	o o	Same as above
		43-45'	1.5 ppm 1.5 ppm 2.5 ppm 1.5 ppm 8.5 ppm 4.8 ppm 2.0 ppm 1.5 ppm 1.5 ppm 8.0 ppm 5.0 ppm 1.2 ppm 5.0 ppm 1.0 ppm 11.5 ppm 1.5 ppm	o o	Same as above
45		45-47'	1.5 ppm 1.5 ppm 2.5 ppm 1.5 ppm 8.5 ppm 4.8 ppm 2.0 ppm 1.5 ppm 1.5 ppm 8.0 ppm 5.0 ppm 1.2 ppm 5.0 ppm 1.0 ppm 11.5 ppm 1.5 ppm	o o	Gray, fine SAND, medium dense, slight hydrocarbon-like odor, wet
		47-49'	7.0 ppm 5.0 ppm 7.0 ppm 5.0 ppm 6.0 ppm 0.5 ppm 0.6 ppm	o o	Same as above
		49-51'	7.0 ppm 5.0 ppm 7.0 ppm 5.0 ppm 6.0 ppm 0.5 ppm 0.6 ppm	o o	Same as above
50		51-53'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	o o	Dark gray, fine-coarse SAND w/shells, semi-loose, slight hydrocarbon-like odor, wet
		53-55'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	o o	Same as above, trace fine gravel, no odor
55		55-57'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	o o	Same as above, slight hydrocarbon-like odor
		57-59'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	o o	Same as above
60					Base of boring - 59 ft.



Site Id: RPSB-98

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/07/01 - 11/08/01

Total Depth: 40.00'

Remarks: Samples selected for analysis at 4-6' and 38-40'.

Elevation: 8.20'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hand Augered 0-4', Geoprobe 4-40'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm		Tan-orange, medium sandy FILL w/gravel, road stone, loose, dry (composite sample)
5		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Light brown (gray 6.2-6.7'), medium SAND, loose, black banding at 6.2', mild hydrocarbon-like odor, dry-moist at 5.7', wet at 6.2'
10		8-12'	20.5 ppm 25.2 ppm 5.1 ppm 0.8 ppm 2.8 ppm 9.0 ppm 7.3 ppm		Gray, fine-medium SAND, loose, dark black staining in bottom 4", possible sewage-like odor near top, very mild naphthalene-like odor, wet
15		12-16'	612 ppm 181 ppm 220 ppm 116 ppm		Charcoal gray, fine-medium SAND (coarse in top 3-5"), loose, solvent/sewage-like odor, wet
20		16-20'	562 ppm 82 ppm 25 ppm 79 ppm 129 ppm 111 ppm		Charcoal gray, medium-coarse SAND w/fine gravel and sea shells, loose, strong solvent/sewage-like odor, wet
25		20-24'	260 ppm 83 ppm 63 ppm 15 ppm 29 ppm 21 ppm 4.0 ppm		Charcoal gray, m-c SAND w/trace fine gravel, loose, odor as above, wet Charcoal gray, fine-medium SAND, loose, mild solvent/sewage-like odor, wet
30		24-28'	0.9 ppm 0.4 ppm 0.9 ppm 1.4 ppm 3.5 ppm 13.2 ppm 3.4 ppm		Same as above, fine-medium-coarse (26.5-27.5"), mild sewage-like odor
35		28-32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Charcoal gray, fine-medium-coarse SAND, loose, mild sewage-like odor, wet

Location: Rockaway Park	Site Id: RPSB-98
Purpose: Soil Boring	Total Depth: 40.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
32		32-36'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Charcoal gray, fine-medium SAND, loose, mild sewage-like odor, wet Same as above, mild organic (H2S-like)/sewage-like odor
36		36-40'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine-medium SAND, loose, wet
40					Base of boring - 40 ft.
45					
50					
55					
60					
65					



Site Id: RPSB-98A

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/09/01 - 11/09/01

Total Depth: 20.00'

Remarks: Samples selected for analysis at 6-8' and 18-20'.

Elevation: 8.19'

Datum: Mean Sea Level

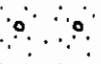
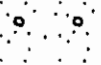
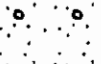
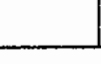
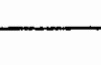
Logged By: William J. Ryan

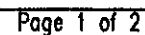
Drilling Method: Hand Augered 0-5', Geoprobe 5-20'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-5'			0.0 ppm		Orange-tan, medium sandy FILL w/fine gravel, road stone, loose, dry (composite sample)
5-8'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Orange-tan, fine-medium sandy FILL, loose, coal fragments, dry
8-12'			0.8 ppm 1.8 ppm 11.5 ppm 20.5 ppm 86 ppm 94.2 ppm 44.6 ppm 58.4 ppm		Gray, fine-medium SAND, loose, wet Charcoal gray-black, fine-medium-coarse SAND, loose, strong hydrocarbon/solvent/sewage-like odor, wet
12-16'			1.6 ppm 1.2 ppm 9.6 ppm 464 ppm 193 ppm 757 ppm		Black, fine-medium SAND, loose, hydrocarbon/solvent/sewage-like odor, wet
16-20'			1.3 ppm 0.8 ppm 1.4 ppm 2.3 ppm 0.9 ppm 0.8 ppm		Black, fine-medium-coarse SAND w/trace of fine gravel, loose, mild organic (H2S-like) odor, wet
20'					Base of boring - 20 ft.

Location: Rackaway Park				Site Id: RPSB-99	
Purpose: Soil Boring				Total Depth: 40.00'	
Consulting Firm: Dvirka & Bartilucci				Borehole Dia.: 2.00in	
Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
32		32-36'	0.0 ppm		Gray, fine-medium SAND, loose, no distinct odor, wet
34			23.2 ppm		Same as above, mild solvent/sewage-like odor near top only
36			15.4 ppm		
38			0.0 ppm		
40		36-40'	0.0 ppm		Gray, fine-medium SAND, loose, slight solvent/sewage-like odor, wet
42			0.4 ppm		
44			0.0 ppm		
46			0.0 ppm		
48			0.0 ppm		
50			0.0 ppm		
52			0.0 ppm		
54			0.0 ppm		
56			0.0 ppm		
58			0.0 ppm		
60			0.0 ppm		
62			0.0 ppm		
64			0.0 ppm		
66			0.0 ppm		
68			0.0 ppm		
70			0.0 ppm		
72			0.0 ppm		
74			0.0 ppm		
76			0.0 ppm		
78			0.0 ppm		
80			0.0 ppm		
82			0.0 ppm		
84			0.0 ppm		
86			0.0 ppm		
88			0.0 ppm		
90			0.0 ppm		
92			0.0 ppm		
94			0.0 ppm		
96			0.0 ppm		
98			0.0 ppm		
100			0.0 ppm		
102			0.0 ppm		
104			0.0 ppm		
106			0.0 ppm		
108			0.0 ppm		
110			0.0 ppm		
112			0.0 ppm		
114			0.0 ppm		
116			0.0 ppm		
118			0.0 ppm		
120			0.0 ppm		
122			0.0 ppm		
124			0.0 ppm		
126			0.0 ppm		
128			0.0 ppm		
130			0.0 ppm		
132			0.0 ppm		
134			0.0 ppm		
136			0.0 ppm		
138			0.0 ppm		
140			0.0 ppm		
142			0.0 ppm		
144			0.0 ppm		
146			0.0 ppm		
148			0.0 ppm		
150			0.0 ppm		
152			0.0 ppm		
154			0.0 ppm		
156			0.0 ppm		
158			0.0 ppm		
160			0.0 ppm		
162			0.0 ppm		
164			0.0 ppm		
166			0.0 ppm		
168			0.0 ppm		
170			0.0 ppm		
172			0.0 ppm		
174			0.0 ppm		
176			0.0 ppm		
178			0.0 ppm		
180			0.0 ppm		
182			0.0 ppm		
184			0.0 ppm		
186			0.0 ppm		
188			0.0 ppm		
190			0.0 ppm		
192			0.0 ppm		
194			0.0 ppm		
196			0.0 ppm		
198			0.0 ppm		
200			0.0 ppm		
202			0.0 ppm		
204			0.0 ppm		
206			0.0 ppm		
208			0.0 ppm		
210			0.0 ppm		
212			0.0 ppm		
214			0.0 ppm		
216			0.0 ppm		
218			0.0 ppm		
220			0.0 ppm		
222			0.0 ppm		
224			0.0 ppm		
226			0.0 ppm		
228			0.0 ppm		
230			0.0 ppm		
232			0.0 ppm		
234			0.0 ppm		
236			0.0 ppm		
238			0.0 ppm		
240			0.0 ppm		
242			0.0 ppm		
244			0.0 ppm		
246			0.0 ppm		
248			0.0 ppm		
250			0.0 ppm		
252			0.0 ppm		
254			0.0 ppm		
256			0.0 ppm		
258			0.0 ppm		
260			0.0 ppm		
262			0.0 ppm		
264			0.0 ppm		



Location: Rockaway Park	Site Id: RPSB-100
Purpose: Soil Boring	Total Depth: 40.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0			0.0 ppm		Gray, fine-medium SAND, loose, wet
32		32-36'	0.0 ppm		Same as above
36		36-40'	0.0 ppm		Same as above
40			0.0 ppm		Base of boring - 40 ft.
45					
50					
55					
60					
65					

Site Id: RPSB-101

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/15/01 - 11/16/01

Total Depth: 41.00'

Remarks: Samples selected for analysis at 5-7', 15-17' and 39-41'.

Elevation: 12.15'

Datum: Mean Sea Level

Logged By: J. Schofer

Drilling Method: Hollow Stem Auger

Contractor: Delta Well & Pump

Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					Concrete povement and FILL (cut through using geaprabe with rock bit)
5		5-7'	0.0 ppm 0.0 ppm 0.0 ppm		Ton-dk brown-orange brawn, fine sandy FILL w/some coal (6-6.5'), dry
		7-9'	0.0 ppm 0.0 ppm 0.0 ppm		Tan-brown, fine sandy FILL, loose, dry
10		9-11'	0.0 ppm 5.0 ppm 28 ppm		Tan-gray, fine sandy FILL w/coal layer at 10', to fine SAND, brown staining from 10.5-11', hydrocarbon-like odor, loose, dry (wet at 9.5')
		11-13'	130 ppm 510 ppm 750 ppm 300 ppm 165 ppm 35 ppm 15 ppm		Brown-gray-white, fine SAND, medium dense, same brown stoining from 11-11.5', hydrocarbon-like odor, wet
		13-15'	0.0 ppm 0.0 ppm 0.0 ppm		White, fine SAND, medium dense, brown staining from 13-13.5', hydrocarbon-like odor, wet
15		15-17'	0.0 ppm 0.0 ppm 0.0 ppm		White, fine SAND, medium dense, wet
		17-19'	0.0 ppm 0.0 ppm 0.0 ppm		Some as above
		19-21'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		White, fine-medium SAND w/some fine and coarse gravel. medium dense, wet
20		21-23'	0.0 ppm 0.0 ppm 0.0 ppm		Same os above
		23-25'	0.0 ppm 0.0 ppm 0.0 ppm		White, fine-coarse gravelly SAND w/some clam shells, loose, wet
25		25-27'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		27-29'	0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine-medium SAND w/trace of clam shells, dense, moist
		29-31'	0.0 ppm 0.0 ppm		Gray, very fine-fine SAND, dense, wet

Location: Rockaway Park	Site Id: RPSB-101
Purpose: Soil Boring	Total Depth: 41.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		31-33'	0.000 ppm 0.000 ppm 0.000 ppm		Gray, very fine-fine SAND, dense, wet
		33-35'	0.000 ppm 0.000 ppm 0.000 ppm		Same as above, some clam shells
35		35-37'	0.000 ppm 0.000 ppm 0.000 ppm		Same as above
		37-39'	0.000 ppm 0.000 ppm 0.000 ppm		Same as above
40		39-41'	0.000 ppm 0.000 ppm 0.000 ppm		Same as above, trace coarse gravel
					Base of boring - 41 ft.
45					
50					
55					
60					
65					



Site Id: RPSB-102

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/28/01 - 11/28/01

Total Depth: 31.00'

Remarks: Samples selected for analysis at 5-7' and 29-31'.

Elevation: 11.71'

Datum: Mean Sea Level

Logged By: J. Schafer

Drilling Method: Hand Auger 0-5', Hollow Stem Auger 5-31'

Contractor: Delta Well & Pump

Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-5'					Brown-tan, fine-medium sandy FILL w/some fine gravel and glass, loose, dry
5-7'			0.0 ppm		Brown, silty fine sandy FILL w/some glass fragments, loose, dry
7-9'			0.0 ppm		Tan, fine SAND, loose, dry
9-11'			0.0 ppm		Tan, very fine-fine SAND, loose, dry
11-13'			0.0 ppm		Gray, fine SAND, loose, slight hydrocarbon-like odor at 10.5', moist
13-15'			0.0 ppm		Gray, fine-medium SAND, loose, slight hydrocarbon-like odor, wet
15-17'			0.0 ppm		Gray-orange-brown, very fine-fine SAND w/some gravel, loose-dense, wet
17-19'			0.0 ppm		Gray w/slight brown laminations, very fine-fine SAND, semi-loose, wet
19-21'			0.0 ppm		No recovery
21-23'			0.0 ppm		Light gray, fine-medium SAND, semi-loose, wet
23-25'			0.0 ppm		Same as above, tan, shell fragments
25-27'			0.0 ppm		Tan, fine-medium SAND w/shell fragments, trace fine-coarse gravel, loose, very slight naphthalene-like odor, wet
27-29'			0.0 ppm		Tan, fine-coarse SAND w/shell fragments, some fine gravel, loose, wet
29-31'			0.0 ppm		No recovery
			0.0 ppm		Gray, fine SAND w/some shell fragments, tr hornblende, med dense, wet

Location: Rockaway Park	Site Id: RPSB-102
Purpose: Soil Boring	Total Depth: 31.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0			0.0 ppm		Gray, fine SAND w/some shell fragments, tr hornblende, med dense, wet Base of boring - 31 ft.
5					
10					
15					
20					
25					
30					
35					
40					
45					
50					
55					
60					
65					
70					
75					
80					
85					
90					
95					
100					



Site Id: RPSB-103

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/07/01 - 11/07/01

Total Depth: 10.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 8.18'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hand Augered 0-4', Geoprobe 4-10'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PHD	Graphic Log	Material Description
0-4'			0.0 ppm		Dk brown, med-coarse sandy FILL w/fine gravel, road stone, loose, dry
4-8'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine-med SAND w/sea shells, loose, dry (composite sample, 0-4')
8-10'			0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine-medium SAND w/sea shell fragments, loose, dry-moist at 5.6', wet at 5.9'
					Tan-gray, fine-medium SAND w/sea shells, loose, wet
					Base of boring - 10 ft.



Site Id: RPSB-104

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/07/01 - 11/07/01

Total Depth: 10.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 8.65'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hand Augered 0-4', Geoprobe 4-10'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'			0.0 ppm		Dk br, med-coarse sandy FILL, road stone and asphalt fragments, loose, dry Tan (beach), fine-medium SAND w/sea shell fragments, loose, dry (composite sample, 0-4')
4-8'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan (beach), fine-medium SAND w/sea shell fragments, loose, orange bonding, dry-moist at 5.25', wet at 5.75'
8-10'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan-light brown, fine-medium SAND w/sea shell fragments, loose, wet Base of boring - 10 ft.



Site Id: RPSB-105

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/06/01 ~ 11/06/01

Total Depth: 10.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 8.22'

Datum: Mean Sea Level

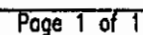
Logged By: William J. Ryan

Drilling Method: Hand Augered 0-4', Geoprobe 4-10'

Contractor: Zebro Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'			0.0 ppm		Tan (beach), fine-medium SAND, loose, dry (composite sample)
4-8'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, moist at 5.2', wet at 5.9'
8-10'			0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, wet
10					Base of boring - 10 ft.
15					
20					
25					



Site Id: RPSB-107

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/07/01 - 11/07/01

Total Depth: 10.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 8.50'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hand Augered 0-4', Geoprobe 4-10'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm		Orange-brown, fine-medium sandy FILL, asphalt fragments, loose, dry (composite sample)
5		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan-orange, fine-medium SAND, sea shells and fine gravel (5.75-6.75'), loose, orange banding (4.75-5.75'), dry-moist at 5.25', wet at 6'
10		8-10'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan-orange, fine-medium SAND, gray in the bottom 4", loose, wet
					Base of boring - 10 ft.



Site Id: RPSB-108

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/06/01 - 11/06/01

Total Depth: 10.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 8.06'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hand Augered 0-4', Geoprobe 4-10'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0		0-4'	0.0 ppm		Tan (beach), fine-medium SAND w/trace of fine gravel and sea shells, loose, dry (composite sample)
4		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan (beach), fine-medium SAND w/trace of fine gravel and sea shell fragments, loose, dry-moist at 5.1'
8		8-10'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above, no gravel or sea shell fragments, wet
10					Base of boring - 10 ft.

Site Id: RPSB-109

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/05/01 - 11/05/01

Total Depth: 10.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 7.82'

Datum: Mean Sea Level

Logged By: William J. Ryon

Drilling Method: Hand Augered 0-4', Geoprobe 4-10'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'					Tan-gray (beach), fine-medium SAND w/trace fine-coarse gravel and sea shell fragments, loose, dry
4-8'			0.00 ppm 0.00 ppm 0.00 ppm 0.00 ppm 0.00 ppm 0.00 ppm 0.00 ppm 0.00 ppm		Same as above, no gravel, wet at 5.2'
8-10'			0.00 ppm 0.00 ppm 0.00 ppm 0.00 ppm		Same as above, wet
10					Base of boring - 10 ft.



Site Id: RPSB-110

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/05/01 - 11/05/01

Total Depth: 10.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 8.03'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0		0-4'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine-medium SAND w/sea shell fragments, loose, dry
4		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, wet at 6.2'
8		8-10'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, wet
10					Base of boring - 10 ft.
15					
20					
25					



Site Id: RPSB-111

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/05/01 - 11/05/01

Total Depth: 11.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 8.46'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'		0-4'	0.00 ppm 0.00 ppm 0.00 ppm 0.00 ppm		Tan, fine-medium SAND w/trace decayed sea shells, loose, dry
4-8'		4-8'	0.00 ppm 0.00 ppm 0.00 ppm 0.00 ppm		Same as above, wet at 6.25'
8-11'		8-11'	0.00 ppm 0.00 ppm 0.00 ppm 0.00 ppm		Same as above, wet
11 ft.					Base of boring - 11 ft.



Site Id: RPSB-112

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/05/01 - 11/05/01

Total Depth: 10.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 9.71'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'		0-4'	0.0 ppm 0.0 ppm		FILL, concrete and red brick to light brown, fine SAND, loose, dry
4-8'		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Light brown-tan, fine SAND, loose, dry-wet at 6.1'
8-10'		8-10'	0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine-medium SAND, loose, wet
10					Base of boring - 10 ft.



Site Id: RPSB-113

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/22/02 - 03/22/02

Total Depth: 12.00'

Remarks: Sample selected for analysis at 0-2'.

Elevation: 7.55'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Geoprobe

Contractor: Zebro Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'		0-4'	0.0 ppm 0.0 ppm 0.0 ppm		Black, medium sandy FILL w/coal fines, wood shavings from bulkhead material Brown-black, medium sandy FILL, loose, some cool fines, moist
4-8'		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, medium sandy FILL w/orange-brown sand in bottom 4", sandstone aggregate at 4.5', cool fines, moist (wet at 8')
8-12'		8-12'	0.0 ppm 0.0 ppm 0.0 ppm		Lt br, f-m sandy FILL, clinker in top 4", some pulverized red brick at 9' Light brown, fine-medium SAND, loose, wet
					Base of boring - 12 ft.



Site Id: RPSB-114

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/22/02 - 03/22/02

Total Depth: 12.00'

Remarks: Sample selected for analysis at 4-6'.

Elevation: 7.29'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'		0-4'	0.0 ppm 0.0 ppm 0.0 ppm		Brown to orange-brown, medium sandy FILL w/some coal fines at .5' and 1.5'
4-8'		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, black and orange-brown, medium sandy FILL, 8" clinker material from 4.5-5', minor black discoloration beneath clinker due to coal fines, moist (wet at 5.5')
8-12'		8-12'	0.0 ppm 0.0 ppm 0.0 ppm		Multicolored (dark-light brown, orange, tan, gray), fine-medium sandy FILL, some clinker material and coal fines, to multicolored, fine-medium SAND, loose, wet
					Base of boring - 12 ft.



Site Id: RPSB-115

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/22/02 - 03/22/02

Total Depth: 12.00'

Remarks: Sample selected for analysis at 8-10'.

Elevation: 7.07'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
0-4'		0-4'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-medium sandy FILL w/gravel, loose, concrete debris, red brick, clinker fragments, trace coal fines, dry
4-8'		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gravelly FILL Brown to orange-brown, fine-medium sandy FILL, loose, some coal fines, moist (wet at 6.5')
8-12'		8-12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, medium-coarse SAND w/gravel, loose, wet Light brownish orange and tannish gray, fine-medium SAND, loose, wet
					Base of boring - 12 ft.



Site Id: RPSB-116

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/29/02 - 04/01/02

Total Depth: 70.00'

Remarks: Samples selected for analysis at 44-46' and 54-56'.

Elevation: 11.86'

Datum: Mean Sea Level

Logged By: B. Ryan/T. Fox

Drilling Method: Hollow Stem Auger

Contractor: Delta Well & Pump

Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
5					
10		10-12'	0.0 ppm		Dark brown, fine-medium sandy FILL, trace fine gravel, loose, dry
		12-14'	0.0 ppm 0.0 ppm		Brown and charcoal gray, fine-medium-coarse sandy FILL, trace fine-coarse gravel and fill material, loose, possible odor, wet
		14-16'	0.0 ppm 0.0 ppm		Same as above, fine-coarse gravel
15		16-18'	0.0 ppm 0.0 ppm		FILL, loose, black clinker and coal fragments, wet
		18-20'	0.0 ppm 0.0 ppm 0.0 ppm		Black, fine-medium-coarse sandy FILL w/fine-coarse gravel, loose, coal and clinker fragments, wet
20		20-22'	0.0 ppm 0.0 ppm		Same as above, sea shell fragments, no clinker, slight odor - possibly naphthalene-like
		22-24'	0.0 ppm		Black, fine-medium-coarse sandy FILL w/fine-coarse gravel, loose, clinker fragments, possible naphthalene-like odor, wet
25		24-26'	0.0 ppm 0.0 ppm 1.0 ppm 7.3 ppm		Bk, f-m-c sandy FILL w/sandy clay at 25', coal and clinker fragments, sheen and highly viscous tar staining in bottom 6", slight (mild in bottom 6") naphthalene-like odor, loose, wet
		26-28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Block, fine-medium-coarse sandy FILL, loose, clinker fragments, wet
		28-30'	0.0 ppm 0.0 ppm 1.4 ppm 1.5 ppm		Same as above w/coal fragments, to gray, fine-medium sandy FILL at 29.25', loose, sporadic bk tar staining, mild naphthalene-like odor, wet

Site Id: RPSB-118



Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/16/02

Date Completed: 08/16/02

Remarks:

Ground Elevation: 7.39'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7		65			0'-2' Asphalt pavement, med sand and gravel subbase, mod fuel odor			
			198 ppm		2'-4' Black to brown, MED SAND and gravel, damp, loose, non-cohesive, some clinker/coal/ash/coke, mod fuel oil odor, pieces of wood, not indicative of purifier waste.			
			437 ppm		4'-6' Brown, FINE to MED SAND, trace small gravel, sand is bonded with black to light brown layers.			
					6'-7' Black, FINE SAND, some med sand, little small gravel, soil is stained black, strong fuel oil odor, wet, loose, non-cohesive.			
7-17		85	585 ppm		7'-12.5' Black, MED to COARSE SAND, some med gravel, coke/clinker/coal, strong fuel oil odor, wet, loose, non-cohesive.			0
				10				
			176 ppm		12.5'-17' Grey, FINE SAND, trace shell fragments, wet, loose, non-cohesive, no odor or visual impacts. 1' band of med to coarse sand with some shell fragments at 15-16 bgs, faint naph odor in coarser material			

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tor

Site Id: RPSB-118



GEL Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/16/02

Date Completed: 08/16/02

Remarks:

Ground Elevation: 7.39'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
17-27		95			17'-26' Grey, FINE SAND, trace shell fragments, wet, loose, non-cohesive, no odor or visual from 17'-22' / 22'-24' 2' band of med to coarse sand with some shell fragments, little gravel, faint naphthalene odor, no visual impacts			-10
			1567 ppm	20	19'-19.3' Band of brown SAND and organic matter (roots) no odors			
					26'-27' Brown, MED SAND, trace coarse sand, some shell fragments, little gravel, heavily saturated with brown viscous tar, some separate phase tar in bottom of bag. Strong tar odor.			
27-37		92	1081 ppm		27'-29' Grey, FINE SAND, wet, loose, non-cohesive, brown tar stained veins running vertically from 27'-28.5'			-20
			206 ppm		28.5'-29' band of med sand, little shell fragments, tar coated grains, strong tar odor. 29'-37' Grey, FINE SAND, trace med sand, trace shell fragments, faint naphthalene odor, no visual impacts. 1.5' band of med sand, trace coarse sand, some shell fragments, trace gravel, faint naphthalene odor, no visual impacts.			

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-118



CSM Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/16/02

Date Completed: 08/16/02

Remarks:

Ground Elevation: 7.39'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description		Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.				
37-47		95	100 ppm	40	37'-47' Grey, FINE SAND, trace shell fragments, no odors or visual impacts.				-30

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-118



GCI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/16/02

Date Completed: 08/16/02

Remarks:

Ground Elevation: 7.39'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
47-57		90	265 ppm	50	47'-57' As Above, no odors or visual impacts.			-40
57-67		98	363 ppm		57'-67' As Above, no odors or visual impacts.			-50

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-118



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/16/02

Date Completed: 08/16/02

Remarks:

Ground Elevation: 7.39'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
					END OF BORING AT 67'.			60
				70				

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-119



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 1620-C

Project Name: Rockaway Park

Date Started: 08/23/02

Date Completed: 08/23/02

Remarks:

Ground Elevation: 7.71'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7		65	6.0 ppm		0'-3.5' Black to dark brown MED SAND, some med gravel, some coke, coal, ash and clinker. No odors or visual impacts.			
					3.5'-7' Light brown, FINE to MED SAND, trace small gravel, dry, loose, non-cohesive, no odors or visual impacts.			
7-17		85	356 ppm		7'-14' Brown, MEDIUM SAND, little fine sand, some clinker, wet, loose, non-cohesive, 3" bands of brown tar stained material separated by 6" to 1" bands of fuel oil coated clinker, strong fuel odor, free LNAPL in water in bag.			0
			2049 ppm		14'-17' Brown, MEDIUM SAND, some shell fragments, some small gravel, wet, loose, non-cohesive, brown viscous tar saturated, strong tar odor.			

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-119



G&B Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 1620-C

Project Name: Rockaway Park

Date Started: 08/23/02

Date Completed: 08/23/02

Remarks:

Ground Elevation: 7.71'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
17-27		100	2107 ppm		17'-20' Grey, MEDIUM SAND, some small gravel, some shell fragments, wet, loose, non-cohesive, tar saturated, strong tar odor.			-10
			275 ppm	20	20'-26' Grey, MEDIUM to FINE SAND, wet, loose, non-cohesive, moderate naphthalene odor, no visual impacts			
			1469 ppm		26'-27' Grey, MEDIUM SAND, some small gravel, some shell fragments, wet, loose, non-cohesive, tar saturated to tar coated, strong tar odor.			
27-37		100	2137 ppm		27'-37' Grey, FINE SAND, wet, loose, non-cohesive 4-1" bands of MED SAND, some shell fragments, trace small gravel, tar saturated. 1/2" to 1" tar stained veins running vertically between tar saturated bands			-20

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-119



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 1620-C

Project Name: Rockaway Park

Date Started: 08/23/02

Date Completed: 08/23/02

Remarks:

Ground Elevation: 7.71'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
37-47		95			37'-40' Grey, FINE SAND, wet, loose, non-cohesive, thin 1/4" veins of tar coated med sand running vertically at 38' to 39', faint tar odor.			
			240 ppm	40	40'-47' Grey, FINE SAND, wet, loose, non-cohesive, no visual impacts, strong sulfur odor			-30

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-119



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 1620-C

Project Name: Rockaway Park

Date Started: 08/23/02

Date Completed: 08/23/02

Remarks:

Ground Elevation: 7.71'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
47-57		45	134 ppm		47'-57' As Above, strong sulfur odor, no visual impacts			-40
57-67		85			57'-62' Grey, FINE to MEDIUM SAND, trace shell fragments wet, loose, non-cohesive 1/4" tar coated seams, tar blebs in water in bottom of sample bag.			-50

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-119



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 1820-C

Project Name: Rockaway Park

Date Started: 08/23/02

Date Completed: 08/23/02

Remarks:

Ground Elevation: 7.71'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
67-77		100	14.0 ppm	62'-67'	Grey, FINE SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive, mod to faint naphthalene odor			-60
			489 ppm	62'-63'	Band of med sand, some shell fragments, some small gravel, tar saturated.			
				67'-72'	Grey, FINE SAND, trace med sand, wet, loose, non-cohesive, faint naph odor at 67'-68', no visual impacts.			
			28.6 ppm	72'-77'	Brown, FINE SAND, wet, loose, non-cohesive, faint organic odor at 72'-73', no visual impacts.			

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-119



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Client: Keyspan Energy, Inc.

Project Number: 1620-C

Project Name: Rockaway Park

Date Started: 08/23/02

Date Completed: 08/23/02

Remarks:

Ground Elevation: 7.71'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
77-87		95	2.5 ppm	80	77'-87' Brown, FINE SAND, wet, loose, non-cohesive, no odors or visual impacts.			-70
87-97		75	1.1 ppm		87'-97' Brown, FINE SAND, wet, loose, non-cohesive, no odors or visual impacts.			-80

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-119



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 1620-C

Project Name: Rockaway Park

Date Started: 08/23/02

Date Completed: 08/23/02

Remarks:

Ground Elevation: 7.71'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
			0.6 ppm		95'-95.5' thin bands of SANDY CLAY, trace silt			
					END OF BORING AT 97'.			-90
				100				

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-120



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/16/02

Date Completed: 08/16/02

Remarks:

Ground Elevation: 7.69'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7		57	0.0 ppm	0'-1'	Brown, MED SAND, some coarse sand, some gravel, dry, loose, non-cohesive, no odor or visual contamination			
				1'-7'	Brown to black, MED to COARSE SAND, some small to med gravel, little coke/clinker/ash at 5-7' bgs, no odors.			
7-17		83	72.9 ppm	7'-12'	Black, FINE to COARSE SAND, wet, loose, non-cohesive, patchy sheen, mod fuel oil odor, some coke/clinker/ash and wood chips. Wood chips are black and weathered and do not appear to be purifier related waste.			0
			1.6 ppm	12'-17'	Grey, FINE SAND, trace small gravel, wood chips as above, wet, loose, non-cohesive, slight naphtholene odor			

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-120



G&E Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/16/02

Date Completed: 08/16/02

Remarks:

Ground Elevation: 7.69'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
17-27		90	35.3 ppm		17'-27' Grey, FINE SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive, slight to mod naphthalene odor. 3'-9' bands of coarser material, MED-COARSE SAND little shell fragments, little gravel, mod naphthalene odor at 18', 21-22' and 25.5-26.5			-10
27-37		95	22.9 ppm		27'-37' Grey, FINE SAND, trace med sand, trace fine gravel, wet, loose, non-cohesive, mod naphthalene odor, no visual contamination.			-20

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-120



CFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/16/02

Date Completed: 08/16/02

Remarks:

Ground Elevation: 7.69'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
37-47		95	24.6 ppm	40	37'-47' As Above with faint naph odor from 37'-42' becoming mod naph odor at 42'-47'			-30

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-120



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/16/02

Date Completed: 08/16/02

Remarks:

Ground Elevation: 7.69'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
47-57	87	0.0 ppm		47'-55'	Grey, FINE SAND, trace med sand, trace small gravel, wet, loose, non-cohesive, faint naphthalene odor, no visual impacts.			-40
				55'-57'	Grey, FINE to MED SAND, little coarse sand, little shell fragments, little small to med gravel, no odors or visual impacts.			
57-67	100	0.0 ppm		57'-63.5'	As Above, no odors or visual impacts.			-50

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-120



GRI Consulting, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/16/02

Date Completed: 08/16/02

Remarks:

Ground Elevation: 7.69'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
			10.0 ppm		63.5'-67' Brown to black, FINE SAND wet, loose, non-cohesive, mod organic odor, no visual impacts.			
					END OF BORING AT 67'.			-60
				70				

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-121



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/15/02

Date Completed: 08/15/02

Remarks:

Ground Elevation: 7.22'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 127.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7		0			0"-6" Drilled through concrete pad of former purifier foundation. 6"-7" No recovery			
7-17		98	3042 ppm		7'-8.5' Light gray to black, FINE SAND, wet, loose, non-cohesive, slight sheen on grains, fuel oil odor 8.5'-17' Grey, FINE SAND, trace shell fragments, wet, loose, non-cohesive, no odors or visual contamination 10'-11' Black stained layer of MED SAND with veins of black stained sand running vertically. Slight nophthalene odor			0
			2069 ppm		13.5'-14' Tar saturated band of med sand and shell fragments, strong tar odor.			

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-121



Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/15/02

Date Completed: 08/15/02

Remarks:

Ground Elevation: 7.22'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 127.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
17-27	100				17'-21' Grey, FINE to COARSE SAND, some shell fragments, little small gravel. No odors or visual impacts to 20'.			-10
			4175 ppm	20	20'-20.5' Mod tar odor and black staining. 20.5'-21' Tar saturated with moderate tar odor.			
			292 ppm		21'-26' Grey, FINE to MED SAND, some small shell fragments and small gravel, loose, wet, non-cohesive, slight naphthalene odor, patchy sheen from 21-22.			
					26'-27' Grey, FINE SAND, wet, loose, non-cohesive, no odors or visual contamination			
27-37	100		252 ppm		27'-37' Grey, FINE SAND, trace shell fragments, wet, loose, non-cohesive, no odor or visual contamination. Thin 1/2" band of black stained FINE SAND, some med sand, little shell fragments at 30'. No odor.			-20

Legend: Physical
Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-121



G&B Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/15/02

Date Completed: 08/15/02

Remarks:

Ground Elevation: 7.22'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 127.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
37-47		100	145 ppm		37'-47' Grey, FINE SAND, trace shell fragments, wet, loose, non-cohesive, no visual contamination, slight naphthalene odor			-30
				40				

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Site Id: RPSB-121



OBI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/15/02

Date Completed: 08/15/02

Remarks:

Ground Elevation: 7.22'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 127.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
47-57		100		50	47'-57' Grey, FINE SAND, wet, loose, non-cohesive, no odors or visual contamination, trace shell fragments			-40
			1167 ppm		55.5' 2" bond of light brown tar saturated, MED SAND and shell fragments			
57-67		95			57'-65' Grey, MED to COARSE SAND and shell fragments, some small gravel, wet, loose, non-cohesive, no odor or visual contamination			-50

Legend: Physical
Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Site Id: RPSB-121



GHI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/15/02

Date Completed: 08/15/02

Remarks:

Ground Elevation: 7.22'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 127.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
67-77		100	20.1 ppm		65'-67' Dark brown to black, FINE SAND, wet, loose, non-cohesive, no odors or visual contamination.			-60
					7.1 ppm			
					67'-71' Brown to black bands of FINE SAND, wet, loose, non-cohesive, slight organic odor, no visual impacts.			
				70				
					71'-75' As Above with trace med sand			

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-121



GEL Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/15/02

Date Completed: 08/15/02

Remarks:

Ground Elevation: 7.22'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 127.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
77-87		70	200 ppm		75'-77' Brown, FINE SAND, wet, loose, non-cohesive, no visual impacts or odors. 77'-87' Brown to black FINE SAND, wet, loose, non-cohesive, no visual impacts, faint naphthalene odor at 80' - 82'.			-70
87-97		90	6.9 ppm		87'-97' Brown, FINE SAND, trace med sand, wet, loose non-cohesive, no odors or visual contamination.			-80

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-121



G&E Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/15/02

Date Completed: 08/15/02

Remarks:

Ground Elevation: 7.22'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 127.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes; ORIGIN.			
97-107		100	0.5 ppm	97'-107'	As Above, no odors or visual impacts.			-90

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-121



E&E Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/15/02

Date Completed: 08/15/02

Remarks:

Ground Elevation: 7.22'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 127.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
107-117	90	1.1 ppm		110	107'-117' As Above, no odors or visual impacts.			-10
117-127	80	1.2 ppm			117'-127' Brown, FINE to MED SAND, trace coarse sand, wet, loose, non-cohesive, no odors or visual impacts.			-11

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-121



GDI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/15/02

Date Completed: 08/15/02

Remarks:

Ground Elevation: 7.22'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 127.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
				130	END OF BORING AT 127'.			-12

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Site Id: RPSB-122



Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 7.62'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7		65			0'-3.5' Brown to black, FINE SAND, little med-coarse sand, some med gravel, some pieces of coal, coke and clinker, no odors or visual impacts, dry, loose, non-cohesive.			
			4.7 ppm		3.5'-7' Light brown, FINE SAND, trace small pieces of coal and coke, loose, dry, non-cohesive, no odor or visual impacts.			
7-17		95	4655 ppm		7'-11.5' Brown to black, FINE SAND, some shell fragments, little med sand, wet, loose, non-cohesive, strong fuel oil odor. 1/2" thick band of black stained organic material at 11'			0
			1822 ppm	10	11.5'-12' Dark grey, FINE SAND, little med sand, wet, loose, non-cohesive, mod tar odor, thin 1/4" bands of lightly tar coated grains, sheen.			
			4.2 ppm		12'-17' Grey, FINE SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive, mod naphthalene odor, no visual impacts. 3" band or larger shell fragments at 15' bgs.			

Legend: Physical
Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-122



CFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 7.62'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
17-27		95	15.6 ppm	20	17'-27' Grey, FINE SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive, no visual contamination, faint naphthalene odor. 2-4" bands of MED SAND, some shell fragments, some small gravel at 20'-22" and 25'-26".			-10
27-37		85	15.5 ppm		27'-37' Grey, FINE SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive, no odors or visual impacts.			-20

Legend: Physical

Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-122



GBI Constructors, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 7.62'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neill

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
37-47		95	4.9 ppm	40	37'-47' Grey, FINE SAND, trace med sand, wet, loose, non-cohesive, no odors or visual impacts.			-30

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-122



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 7.62'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
47-57		78	1.2 ppm		47'-57' As Above, no odors or visual impacts.			-40
57-67		100	2.4 ppm		57'-60' Grey, FINE to MED SAND, little coarse sand, little shell fragments, little small gravel, wet, loose, non-cohesive, no odors or visual impacts.			-50

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain

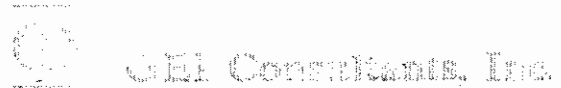


Tar Saturated



Solid Tar

Site Id: RPSB-122



Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 7.62'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
			1.1 ppm		60'-67' Grey, FINE SAND, little med sand, wet, loose, non-cohesive, no odors or visual impacts.			
67-77		100	1.6 ppm		67'-74' Grey, FINE SAND, trace shell fragments, trace med sand, 2' band of MED SAND, some shell fragments, some small gravel at 72-74'. no odors or visual impacts.			-60
			2.1 ppm	70	74'-77' Brown to black, FINE SAND, wet, loose, non-cohesive, mod organic odor or visual impacts.			

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-122



GHI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 7.62'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description		Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.				
				80	END OF BORING AT 77'.				-70
									-80

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-123



Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/12/02

Date Completed: 08/13/02

Remarks:

Ground Elevation: 9.34'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 146.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PD	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-6		50	4.0 ppm		0'-6' Moist. Black, FINE SAND, little silt. Some concrete pieces, black wood chips. Moderate naphthalene odor, strong to moderate fuel oil odor, fuel oil staining, slight tar staining. Medium gravel.			
			1433 ppm					
6-16		79			6'-11' Black, FINE SAND, trace 1" layers of coarse sand, well sorted, loose, non-cohesive. Moderate naphthalene odor, strong fuel oil odor, tar stained.			
				10				0
			1398 ppm		11'-16' Black, FINE SAND, trace 1" layers of coarse sand, well sorted, loose, non-cohesive. Moderate naphthalene odor, strong fuel oil odor, tar stained. Heavy tar coated FINE TO MEDIUM SAND layer at 12'-14'.			
			1335 ppm					

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-123



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/12/02

Date Completed: 08/13/02

Remarks:

Ground Elevation: 9.34'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 146.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
16-26	69		1868 ppm	20	16'-17'6" Black, FINE TO MEDIUM SAND, trace gravel, trace shell fragments, loose non cohesive. Strong Naphthalene odor. 17'6"-19'6" Gray, FINE SAND, well sorted, loose, non-cohesive. Slight naphthalene odor. 19'6"-21' Gray, FINE SAND, well sorted, loose, non-cohesive. 1" to 3" layers of fine to coarse sand and shell fragments. Layers are tar saturated. Strong naphthalene odor. 21'-26' Gray, FINE SAND, well sorted, loose, non-cohesive. 1" to 6" layers of fine to coarse sand and shell fragments. Layers are tar saturated. Strong naphthalene odor.			-10
26-36	80				26'-27'6" Grey, FINE SAND, trace shell fragments, loose, non-cohesive with 3" layers of tar saturated fine to coarse sand and shell fragments. Strong naphthalene odor. 27'6"-36' Grey, FINE SAND, trace shell fragments, loose, non-cohesive, well sorted. Thin 1.5" layer of brown tar stained moderate SAND. Slight naphthalene odor.			-20

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain

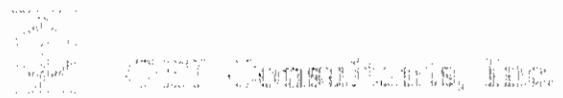


Tar Saturated



Solid Tar

Site Id: RPSB-123



Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/12/02

Date Completed: 08/13/02

Remarks:

Ground Elevation: 9.34'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 146.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
36-46		72	74 ppm					
				36'-46'	Wet. Grey, FINE SAND, trace shell fragments, loose, non-cohesive, well sorted no visual contamination. One wood chip at 44' with slight organic odor. Slight naphthalene odor.			
			192 ppm	40				-30

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-123



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/12/02

Date Completed: 08/13/02

Remarks:

Ground Elevation: 9.34'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 146.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
46-56		52	28 ppm	46'-56'	Wet. Grey, FINE SAND, trace shell fragments, loose, non-cohesive, well sorted. No odor or visual contamination.			
56-66		88	720 ppm	56'-58'6"	Wet. Grey, FINE SAND, some shell fragments, loose, non-cohesive, well sorted. Moderate tar odor. 1-3" layers of medium coarse sand and shell fragments. Layers are stained brown from 56'-57' and tar coated from 57'-58'6" 1/2" veins of stained to coated fine sands running vertically through sample.			
				58'6"-60'5"	Wet. Grey, FINE SAND, some shell fragments, loose, non-cohesive, well sorted, naphthalene odor, no visual contamination.			

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-123



G&S Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/12/02

Date Completed: 08/13/02

Remarks:

Ground Elevation: 9.34'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 146.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
66-76	95	1439 ppm	135 ppm	60'6"-63'	Wet. Brown, FINE to COARSE SAND, some shell fragments, loose, non-cohesive, little small gravel, poorly sorted, tar saturated, moderate tar odor. Thins to 1/2" bands of tar coated finer sands at 62'6"-63'. Sheen on soil.			-60
				63'-66'	Wet. Grey, FINE SAND, little shell fragments, loose, non-cohesive, well sorted, no visual contamination, organic odor.			
				66'-68'	Wet. Gray, FINE SAND, trace shell fragments, loose, non-cohesive, thin 1/4" - 1/2" bands of brown tar stained fine to medium sand and tar stained veins running vertically through sample.			
				68'-72'6"	Wet. Brown to black, FINE TO MEDIUM SAND, Loose, non-cohesive, tar saturated with heavy sheen at 70' - 70'5" moderate tar odor.			
				72'6"-74'	Wet. Black, FINE TO MEDIUM SAND, loose, non-cohesive, tar saturated with heavy sheen. Moderate tar odor.			
		1911 ppm		70				
		1671 ppm		74'-76'	Wet. Brown, FINE SAND, loose, non-cohesive, moderate patchy sheen. Slight naphthalene odor.			

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-123



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/12/02

Date Completed: 08/13/02

Remarks:

Ground Elevation: 9.34'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 146.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
76-86		80		76'-80'	Dark brown, FINE SAND, trace small gravel, trace small clusters of tan fine sand. Moderate to strong organic odor, no visual contamination.			
				80				-70
				80'-83'	Wet. Light Brown, FINE SAND, trace medium to coarse sand, loose, non-cohesive, moderate sheen at 81' - 81'6" and 82'6" - 83', slight to moderate naphthalene odor.			
			494 ppm					
				83'-86'	Wet. Black, FINE SAND, trace medium sand, loose, non-cohesive, tar saturated band at 84'-85', with a heavy sheen. Slight black tar staining at 83'-84' and 85'-86'. Slight to moderate naphthalene odor throughout sample.			
			2818 ppm					
			478 ppm					
86-96		100		86'-90'	Wet. Brown, FINE SAND, loose, non-cohesive, moderate to heavy sheen, slight brown tar staining. 2" layer of black saturated layer at 89'10"-90', moderate tar odor.			
			816 ppm					
			3477 ppm					-80

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-123



GSI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482	Project Name: Rockaway Park	Date Started: 08/12/02	Date Completed: 08/13/02
Remarks:	Ground Elevation: 9.34'		Datum: Mean Sea Level
	Contractor: ProSonic, Inc.		Total Depth: 146.00'
	Drilling Method: Sonic Drilling		
	Logged By: Matt O'Neil		Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
96-106		100	55.9 ppm	90'-95'6"	Wet. Brown, FINE SAND, loose, non-cohesive, no visual impacts, slight-moderate naphthalene odor.			
				95'6"-96'	Wet. Brown, FINE SAND, loose, non-cohesive, no visual impacts, slight-moderate naphthalene odor, staining on edge of sample.			
				96'-100'	Wet. Brown, FINE SAND, loose, non-cohesive, slight patchy sheen at 99'6" to 100'. Slight naphthalene odor.			
				100'-104.5'	Wet, black, FINE SAND, loose, non-cohesive, strong organic odor, no visual contamination.			
				104.5'-106'	Wet, light brown, FINE SAND, loose, non-cohesive, slight naphthalene odor, no visual contamination.			
			502 ppm					
			89.1 ppm					
			41 ppm					
			10.1 ppm					

Legend: Physical
Observations

	None		Blebs, Globes, Lenses, Grain Coating, Sheens
	Stain		Tar Saturated
			Solid Tar

Site Id: RPSB-123



GHI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/12/02

Date Completed: 08/13/02

Remarks:

Ground Elevation: 9.34'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 146.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
106-116	60		16.9 ppm	110	106'-114' Wet, light brown, FINE SAND, loose, non-cohesive, slight naphthalene odor, no visual contamination.			-10
			4208 ppm		114'-116' Wet, light brown, FINE SAND, loose, non-cohesive, heavy sheen, tar coated grains, mod. to heavy tar odor.			
116-126	53	3936 ppm			116'-121' Wet, black stained, FINE SAND, loose, wet, non-cohesive, tar saturated, heavy tar odor.			-11

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-123



OZT Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/12/02

Date Completed: 08/13/02

Remarks:

Ground Elevation: 9.34'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 146.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
126-136		98	637 ppm	121'-126'	Wet, dark brown, FINE to COARSE SAND, loose, non-cohesive, tar coated grains, heavy sheen, moderate to heavy tar odor.			-12
			1557 ppm	126'-130'	Wet, dark brown to dark grey, FINE to MED SAND, trace coarse sand, loose, non-cohesive, black and brown tar stained layers, some lightly coated grains, mod sheen, mod tar odor.			
				130'-134'	Clumps of FINE SAND, little to some SILT (med to large gravel sized clumps) Wet, brown, MED SAND, little coarse sand, loose, non-cohesive, slight sheen, some lightly coated grains at 130.5-131 patches of tar staining, mod to heavy naphthalene odor.			
			374 ppm	134'-136'	Wet, brown, MED to COARSE SAND, trace fine sand, loose, non-cohesive, no visual impacts. Slight naphthalene odor.			

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-123



G&B Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/12/02

Date Completed: 08/13/02

Remarks:

Ground Elevation: 9.34'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 146.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
136-146	60	0.7 ppm			136'-146' Wet, brown, FINE SAND, loose, non-cohesive, no visual impacts of odors.			
				140				-13
		0.3 ppm						
					END OF BORING AT 146'.			-14

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-124



G&E Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 8.98'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7		0			0'-7' No recovery			
7-17		82	748 ppm		7'-13' Brown to black, MED SAND, some fine sand, some med gravel, wet, loose, non-cohesive, strong fuel oil odor, greenish fuel oil staining at 12.5'-13'.			
			3.5 ppm		13'-17' Grey, FINE SAND, trace med sand, wet, loose, non-cohesive, slight fuel oil odor, no visual impacts.			

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-124



GEI Consultants, Inc

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 8.98'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
17-27		95	48.4 ppm		17'-27' Grey, FINE SAND, trace shell fragments, trace small gravel, wet, loose, non-cohesive, slight naphthalene odor from 25'-27', no visual impacts.			-10
27-37		97	13.5 ppm		27'-37' Grey, FINE SAND, trace shell fragments, trace small gravel, slight naphthalene odor, no visual impacts.			-20

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-124



ProSonic, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 8.98'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
37-47	95	1.3 ppm		40	37'-47' Grey, FINE SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive, no odors or visual impacts.			-30

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-124



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 8.98'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
47-57		90	0.9 ppm		47'-57' As Above, no odors or visual impacts.			-40
57-67		75	1.1 ppm		57'-67' Grey, FINE SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive, no odors or visual impacts. Band of med sand, some shell fragments at 57-62'.			-50

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-124



G&E Consulting, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 8.98'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
67-77		85	2.6 ppm	70	67'-77' Grey, FINE SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive, no odors, or visual impacts. 3"-4" bands of med sand, some shell fragments, trace small gravel at 69', 73', and 75'.			-60

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-124



G&T Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 8.98'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
					END OF BORING AT 77'.			-70
				80				-80

Legend: Physical

Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-125



GRI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/21/02

Date Completed: 08/21/02

Remarks:

Ground Elevation: 8.48'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7	0			0-7'	Hand cleared to 6' bgs. Clearings were gravel, medium sand, clinker, ash and coke.			
7-17	70	2292 ppm		7'-13'	Black, MEDIUM SAND, some clinker, little coal, coke, and fragments, wet, loose, non-cohesive, slight sheen from 12'-13', faint naphthalene odor from 12'-13'			0
				10				
				13'-17'	Dark brown, FINE to MEDIUM SAND, wet, loose, non-cohesive, 1/2" bands of tar saturated fine to medium sand separated by moderate tar coated sands and black stained soil from 13'-15'. 15'-17' black stained fine to medium sand. Strong tar odor from 13'-17'.			

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-125



GAT Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/21/02

Date Completed: 08/21/02

Remarks:

Ground Elevation: 8.48'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
17-27		100	918 ppm	17'-25'	Grey, FINE SAND, trace medium sand, trace shell fragments, wet, loose, non-cohesive, 17'-20', brown staining, thin 1/2" bands of lightly coated grains, mix of fuel oil and tar odors. 20'-21' - Dark grey sand, moderate sheen, strong fuel oil odor, 21'-25' - Brown staining bands of lightly coated grains, mix of fuel oil and tar odors.			-10
				20				
			1309 ppm	25'-27'	Brown stained, MEDIUM SAND, trace coarse sand, little shell fragments, little small gravel, wet, loose, non-cohesive, heavily tar saturated, strong tar odor.			
27-37		100	953 ppm	27'-32'	Grey, FINE SAND, trace medium sand, trace shell fragments, wet, loose, non-cohesive. 27'-30' - Brown tar stained, 1/2" bands of medium sand and small gravel that are moderately tar coated. 30'-30'6" - Veins of tar stained sand running vertically in the sample and moderate tar odor. 30'6"-32' - Brown tar saturated medium sand, some shell fragments, some small gravel, strong tar odor.			-20

Legend: Physical

Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Site Id: RPSB-125



GPI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/21/02

Date Completed: 08/21/02

Remarks:

Ground Elevation: 8.48'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
37-47		100	68.4 ppm	32'-35'	Dark grey, FINE SAND, wet, loose, non-cohesive, no visual impacts, slight naphthalene odor.			
			1202 ppm	35'-36'	Brown tar saturated, MEDIUM SAND, trace small gravel, strong tar odor.			
			145 ppm	36'-37'	Light grey, FINE SAND, wet loose, non-cohesive, no visual impacts or odors.			
			19.5 ppm	37'-47'	Grey, FINE SAND, wet loose, non-cohesive, strong sulfur odor, no visual impacts.			
				40				-30

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-125



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/21/02

Date Completed: 08/21/02

Remarks:

Ground Elevation: 8.48'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
47-57	80	32.0 ppm		47'-54'	Grey, FINE SAND, trace medium sand, no visual impacts, wet, loose, non-cohesive, strong sulfur odor.			-40
				54'-57'	Grey, FINE SAND, trace medium sand, wet, loose, non-cohesive, 4" band of heavily tar coated medium sand at 54'-54.6'. 1/2" to 2" bands of brown tar stained medium sand from 54.6" to 57". Veins of tar stained sand running vertically from 54.6"-57". Strong tar odor.			
57-67	80	83.2 ppm		57'-67'	Grey, FINE SAND, trace medium sand, trace shell fragments, wet, loose, non-cohesive, moderate tar odor. 4" band of tar saturated medium sand, some shell fragments, some small gravel, strong tar odor at 62'-63'.			-50

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-125



City of New York Department of Environmental Protection

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/21/02

Date Completed: 08/21/02

Remarks:

Ground Elevation: 8.48'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
			734 ppm 5.2 ppm					
					END OF BORING AT 67'.			
				70				-60

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-126



ONI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/20/02

Date Completed: 08/20/02

Remarks:

Ground Elevation: 8.01'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 60.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7		50	2.1 ppm	0'-7'	Light brown to tan, FINE SAND, some medium to coarse sand, some concrete debris and medium to large gravel from 1-3, no odors or visual impacts.			
7-17		80		7'-12'	Light brown to tan, FINE SAND, wet, loose, non-cohesive, some medium to coarse sand, no odors or visual impacts.			0
			452 ppm	12'-17'	Grey, FINE SAND, wet, loose, non-cohesive, faint naphthalene odor, faint to mod fuel oil odor, black staining from 12'-13'.			

Legend: Physical
Observations



None



Blebs, Glabs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-126



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/20/02

Date Completed: 08/20/02

Remarks:

Ground Elevation: 8.01'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 60.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
17-27	95	48.1 ppm		17'-27'	Grey, FINE SAND, trace medium sand, trace shell fragments, wet, loose, non-cohesive, 1" band of medium sand, some shell fragments, some small gravel at 21'-22' and 1 1/2" band of medium sand, some shell fragments, some small gravel at 24'-25' 6", no visual impacts, moderate naphthalene odor.			-10
27-37	95	9.7 ppm		27'-37'	Grey, FINE SAND, trace medium, trace shell fragments, loose, wet, non-cohesive, patchy faint naphthalene odor, no visual impacts.			-20

Legend: Physical
Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-126



G&E Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/20/02

Date Completed: 08/20/02

Remarks:

Ground Elevation: 8.01'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 60.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description		Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.				
37-47		92	0.8 ppm	37'-47'	Light grey, FINE SAND, wet, loose, non-cohesive, no odors or visual impacts.				-30

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-126



Geo Environmental, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/20/02

Date Completed: 08/20/02

Remarks:

Ground Elevation: 8.01'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 60.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
47-57		85	0.6 ppm	47'-57'	Light grey, FINE SAND, wet, loose, Non-cohesive, no odors or visual impacts.			-40
				50				
				57'-60'	No Recovery.			-50
					END OF BORING AT 60'.			

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tor Saturated



Solid Tor

Site Id: RPSB-127



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/26/02

Date Completed: 08/26/02

Remarks:

Ground Elevation: 8.46'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7		50	0.0 ppm		0'-1.5' Asphalt, subbase, dry, no stains, no odor.			
					1.5'-2.5' Tan, FINE SAND, dry, loose, non-cohesive, no stains, no odors.			
			0.5 ppm		2.5'-2.8' Dark brown with black clinker and ash, FINE SAND, loose, dry, non-cohesive, no stains or odors.			
					2.8'-3.6' Light tan, FINE SAND, loose, dry, no stains, no odors.			
7-17		100	10.0 ppm		7'-7.5' Light brown, MED SAND, moist, loose, non-cohesive, no stains, no odors.			
					7.5'-10' Olive grey, MED SAND some gravel, moist, non-cohesive, no odors, no stains.			
				10	10'-13.5' Olive grey, MED SAND, some gravel moist, non-cohesive, slight saline/organic odor, no stains			0
			379 ppm		13.5'-17' Olive grey, FINE to MED SAND, moist to 17.5', wet below 17.5', no stains, slight MGP odor.			

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-127



GDI Construction, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/26/02

Date Completed: 08/26/02

Remarks:

Ground Elevation: 8.46'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
17-27		100	6.7 ppm		17'-21' Olive grey, MED SAND with SMALL GRAVEL, wet, non-cohesive, no stains, no odors.			-10
				20				
			54 ppm		21'-23' Olive gray, COARSE SAND with GRAVEL and SHELL FRAGMENTS, wet, loose, non-cohesive, no stains, slight saline odor.			
			15 ppm		23'-27' Olive gray, FINE SAND, dense, cohesive, wet, no stains except organic layer at 26', organic odor.			
27-37		100	1.0 ppm		27'-32.5' Olive gray, FINE to MED SAND with SHELL FRAGMENTS, dense, non-cohesive, no stains, slight brine odor, moist.			-20

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-127



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/26/02

Date Completed: 08/26/02

Remarks:

Ground Elevation: 8.46'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
			0.0 ppm		32.5'-37' Top has 2" layers of silt with trace organics, rest is Olive gray, FINE SAND, dense, slightly cohesive, moist, no stains, slight saline/brine odor.			
37-47		100	1.6 ppm		37'-47' Olive gray, FINE SAND, moist except 40-42' is wet, dense, slightly cohesive, no stains, no MGP odors, slight saline odor.			-30
				40				

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-127



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/26/02

Date Completed: 08/26/02

Remarks:

Ground Elevation: 8.46'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
47-57	75	0.0 ppm		50	47'-54' As Above, wet at 50'-52'.			-40
					54'-57' Olive gray, MED SAND, moist, dense, no stains, slight saline odors.			
57-67	100	11.0 ppm			57'-67' Olive gray, MED SAND with SHELL FRAGMENTS and GRAVEL, moist, loose, no stains, slight saline odor.			-50

Legend: Physical
Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-127



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/26/02

Date Completed: 08/26/02

Remarks:

Ground Elevation: 8.46'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 67.00'

Drilling Method: Sonic Drilling

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
					END OF BORING AT 67'.			-60
				70				

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-128



Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 6.04'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 17.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7		57	9999 ppm	1'-4'	Black to brown, FINE SAND, dry, loose, non-cohesive, strong fuel oil odor, black staining from 1'-2.5'			
			3315 ppm	4'-10'	Grey, FINE SAND, trace med sand, wet at 7', loose, non-cohesive, strong fuel oil odor, no visible contamination.			
7-17		95	150 ppm	10'-17'	Black, FINE SAND, trace med sand, wet, loose, non-cohesive, mod to faint fuel oil odor, no visual impacts.			

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-128



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/19/02

Remarks:

Ground Elevation: 6.04'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 17.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
					END OF BORING AT 17'.			-10
				20				-20

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-128A



GRI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/26/02

Date Completed: 07/26/02

Remarks:

Ground Elevation: 7.89'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 30.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-4		98	2.5 ppm		0'-1'4" Dry. Fill, Topsoil w/ clinker like material. No stains or odors.			
					1'4"-1'10" Dry. Concrete. No stains or odors.			
					1'10"-2'7" Dry. FINE SAND AND SILT. Dk brown grading to lt brown. No stains or odors.			
					2'7"-3'9" Dry. Tan. FINE SAND AND GRAVEL. No stains or odors.			
4-8		90	22 ppm		4'-5'6" Dry. Tan. FINE SAND AND GRAVEL. Layer of FINE SAND AND SILT, Dk brown @ 4'8" and 4'10". No stains. No odors.			
			835 ppm		5'6"-6'10" Moist. Tan grading to Lt brown. FINE SAND. Medium dense. No stains. No odors.			
					6'10"-7'7" Moist. Dk tan mottled w/ black FINE SAND. Medium dense. Black could be due to staining. Naphthalene/diesel like odor.			
8-12		79	9999 ppm		8'-12' Wet. Grayish tan grading to black. FINE SAND w/ COARSE SAND @ 9'10" TO 10'2". Med dense. Black color at bottom due to staining. Strong light oil odor.			0
				10				
12-16		88	1446 ppm		12'-16' Wet. Black grading to Dk gray @ bottom 6". FINE SAND. Dense. Black color could be due to staining. Moderate light oil odor from 12'-15.5'			

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tor Saturated



Solid Tor

Site Id: RPSB-128A



GPI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/26/02

Date Completed: 07/26/02

Remarks:

Ground Elevation: 7.89'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 30.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
16-20	75	17 ppm		16'-16'6"	Wet. Black grading to Dk gray. FINE SAND. Dense. Black color could be due to staining. Moderate light oil odor.			
				16'6"-19'	Wet. Dk gray. COARSE AND MEDIUM SAND. Poorly sorted. Dense. No stains. Slight fuel oil odor at bottom 1' from 18'-19'.			
20-24	63	50 ppm		20'-24'	Moist. Olive gray. FINE SAND GRADING TO MEDIUM SAND. Dense. Poorly sorted. No stains. Top interval has fuel oil odor, probably from upper interval. Bottom 1' at 21'6" to 22'5" has septic-like odor/organic odor.			-10
24-28	69	34 ppm		24'-24'8"	Moist. Olive gray. Top 8" is COARSE SAND w/ SHELL FRAGMENTS. Poorly sorted, dense. No stains or odors.			
				24'8"-26'9"	Moist. Olive gray. FINE SAND. Dense. Well sorted. No stains. Slight sewage-like odor.			
28-30	0			28'-30'	No recovery			-20

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-129



Environmental Science, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/22/02

Date Completed: 08/22/02

Remarks:

Ground Elevation: 7.72'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7		57	5.3 ppm		0'-1' gravel, med sand cover 1'-7' Black, MED SAND, some ash, clinker, coal and coke, some small gravel, no visual impacts or odors.			
7-17		90	9999 ppm		7'-13' Black MED SAND, some ash, clinker, coal, and coke, some small gravel, patchy sheen, mod fuel oil odor.			0
			9999 ppm	10	13'-17' Black to grey FINE SAND, wet, loose, non-cohesive 13'-14' black stained FINE SAND, mod naph odor, faint fuel oil odor. 14'-16' Bands of MED SAND, some shell fragments, some small gravel, tar saturation in bands, strong tar odor.			

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-129



GHI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/22/02

Date Completed: 08/22/02

Remarks:

Ground Elevation: 7.72'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
17-27	100		3518 ppm 549 ppm 202 ppm 479 ppm	20	16'-17' veins of tar stained material running vertically, mod tar odor. 17'-20' Grey, FINE SAND, wet, loose, non-cohesive, 1/2" to 1/4" tar saturated med sand and shell fragments, veins of brown stained and lightly coated sand running vertically. 20'-27' Grey, FINE SAND, wet, loose, non-cohesive, band of tar saturated med sand and shell fragments at 25'-26', mod tar odor in band.			-10
27-37	95		136 ppm		27'-37' Grey, FINE SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive, no odors or visual impacts.			-20

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Site Id: RPSB-129



Environmental Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/22/02

Date Completed: 08/22/02

Remarks:

Ground Elevation: 7.72'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description		Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.				
37-47		100	50.6 ppm	40	37'-47' Grey, FINE SAND, wet, loose, non-cohesive, strong sulfur odor, no visual impacts.				-30

Legend: Physical
Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-129



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/22/02

Date Completed: 08/22/02

Remarks:

Ground Elevation: 7.72'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
47-57		100	18.6 ppm	50	47'-57' As Above, strong sulfur odor, no visual impacts.			-40
57-67		92	1.2 ppm		57'-67' Grey, MED to FINE SAND, trace shell fragments, trace small gravel, no odors or visual impacts. Band of med. sand with some shell fragments from 57'-60', 1/4" to 6" bands from 60'-67'.			-50

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Figure 1 is a line graph showing the percentage of total energy expenditure (TEE) for different activities over a 24-hour period. The Y-axis is 'Percentage of TEE' (0-100) and the X-axis is 'Time of day' (0-24). The legend indicates: Sleeping (solid line), Sedentary (dashed line), Light (dotted line), Moderate (dash-dot line), and Vigorous (long-dashed line). Sleeping is highest at night (~30-40%). Sedentary is highest in the morning (~20-30%). Light activity is highest in the afternoon (~10-20%). Moderate and Vigorous activities are highest in the afternoon/evening (~10-20%).

Certified By: Matt O'Neil

Page 5 of 7

Site Id: RPSB-129



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482	Project Name: Rockaway Park	Date Started: 08/22/02	Date Completed: 08/22/02
Remarks:	Ground Elevation: 7.72'		Datum: Mean Sea Level
	Contractor: ProSonic, Inc.		Total Depth: 97.00'
	Drilling Method: Sonic Drilling		
	Logged By: Matt O'Neil		Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
77-87		100	0.6 ppm	80	77'-87' Brown, FINE SAND, trace med sand, wet, loose, non-cohesive, no odors or visual impacts.			-70
87-97		100	0.6 ppm		87'-97' As Above, no visual impacts or odors.			-80

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-129

ProSonic, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/22/02

Date Completed: 08/22/02

Remarks:

Ground Elevation: 7.72'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
					END OF BORING AT 97'.			-90
				100				

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Client: Keyspan Energy, Inc.			
Project Number: 982482	Project Name: Rockaway Park	Date Started: 08/27/02	Date Completed: 08/28/02
Remarks:		Ground Elevation: 8.27'	Datum: Mean Sea Level
		Contractor: ProSonic, Inc.	Total Depth: 97.00'
		Drilling Method: Sonic Drilling	
		Logged By: Rachelle Noble	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description		Lithology	Physical Observations		Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.					
0-7		65	0.9 ppm		0'-1' Asphalt, road subbase, dry, no stains, no odors. 1'-2' Dark brown, FINE SAND and GRAVEL, dry, loose, no stains, no odor. 2'-7' Light brown, FINE SAND and SHELL FRAGMENTS, dry, loose, no stains, no odors.					
7-17		100	4.6 ppm		7'-12' Light brown, FINE SAND with SMALL GRAVEL and SHELL FRAGMENTS, wet, no stains, no odors. 10' 12'-17' Light brown grading to olive gray, FINE SAND, med dense, no stains, slight organic odor at top.					0

Legend: Physical
Observations

 None
  Blebs, Globs, Lenses, Grain Coating, Sheens
 Stain
  Tar Saturated
  Solid Tar

Site Id: RPSB-130



Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/27/02

Date Completed: 08/28/02

Remarks:

Ground Elevation: 8.27'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PTD	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
17-27		100	0.8 ppm	17'-22'	Olive gray, FINE SAND with SHELL FRAGMENTS, dense, non-cohesive, wet, no stains, no odors.			-10
			43.9 ppm	22'-24'	Dark greenish black SILTY CLAY with SHELL FRAGMENTS, soft, moist, mod sulfur odor, no staining.			
			65.9 ppm	24'-27'	Light gray, FINE to MED SAND, wet, non-cohesive, no stains, slight sulfur odor.			
27-37		90	10.7 ppm	27'-37'	Olive gray, FINE SAND with SMALL GRAVEL and shell fragments, wet, non-cohesive, no stains, no odors. Band of coarse SAND at 31'-32' and 35'-37'			-20

Legend: Physical

Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tor Saturated



Solid Tor

Site Id: RPSB-130



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/27/02

Date Completed: 08/28/02

Remarks:

Ground Elevation: 8.27'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
37-47		100	5.3 ppm	40	37'-47' Olive gray, FINE SAND with SMALL GRAVEL and SHELL FRAGMENTS. Sand is coarser at top 5', dense non-cohesive, wet, strong sulfur odor from 42-47', no stains.			-30

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-130



G&B Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/27/02

Date Completed: 08/28/02

Remarks:

Ground Elevation: 8.27'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
47-57	90	0.8 ppm		50	47'-57' Olive gray, FINE SAND with SHELL FRAGMENTS, bands of med sand at 55-57', wet, non-cohesive, no stains, strong sulfur odor at 52'-54'.			-40
57-67	70	0.6 ppm			57'-65' Olive gray, FINE SAND with LARGE SHELL FRAGMENTS, wet, non-cohesive, no stains, no odors.			-50

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-130



GHI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/27/02

Date Completed: 08/28/02

Remarks:

Ground Elevation: 8.27'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PIU	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
67-77		100	0.0 ppm		65'-67' Tan, FINE SAND, wet, non-cohesive, no stains, no odors. 67'-77' Tan, FINE SAND with some Mica, sand is MED SAND at 62'-65', wet, dense, no stains, no odors.			-60
				70				

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSB-130



PBI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482	Project Name: Rockaway Park	Date Started: 08/27/02	Date Completed: 08/28/02
Remarks:		Ground Elevation: 8.27'	Datum: Mean Sea Level
		Contractor: ProSonic, Inc.	Total Depth: 97.00'
		Drilling Method: Sonic Drilling	
		Logged By: Rachelle Noble	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
77-87		95	0.3 ppm	80	77'-87' Tan, FINE to MED SAND, wet, some mica, dense, non-cohesive, no stains, no odors.			-70
87-97		100	0.0 ppm		87'-97' Tan, FINE SAND with some Mica, dense, wet, sands have slight cohesive characteristics, no stains, no odors.			-80

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Page 7 of 7

Well/Boring Id: PZ-01

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 5.33'	X Coordinate: 1418.72
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1368.27
Location: East of office building	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/24/95 - 10/24/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Sunny, 50's	type: Fill	fm: 12.00' to: 40.00'

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PID	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction MP. EL. 5.33
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
0-2	12 15 14 11		0 ppm	5	0.0-1.2' Gray to brown fine to medium Sand, little fine gravel, dry.	None	None		FI		
2-4	8 9 8 8		0 ppm		1.2-3.2' Brown/Black fine to medium Sand and Gravel, little ash and coal.						
4-6	1 1 6 8		0 ppm	0	3.2-5.1' Black Coal and Ash, trace wood fragments.						
7-9	4 4 3 3		9.3 ppm		5.1-6.0' Gravel and miscellaneous coarse Fill material, saturated, slight odor.	Stain/ Sheen	Slight Moderate			5	
					6.0-7.0 Not sampled.						
					7.0-9.0' Black Gravel and coarse Fill material (coal, clinker, etc.), sheen, moderate odor, leaves brownish yellow stain on gloves.						
				-5	9.0-12.0' Not sampled.					10	

Well/Boring Id: PZ-01

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 5.33'	X Coordinate: 1418.72
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1368.27
Location: East of office building	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/24/95 - 10/24/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Sunny, 50's	type: Fill	fm: 12.00' to: 40.00'

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PID	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
12-14	3 6 4 3		39 ppm		12.0-14.0' Well sorted fine-medium gray Sand with tar lenses throughout, strong odor.	Heavy	Strong		SW		
				-10	14.0-17.0' Not sampled.					15	
17-19	4 4 3 4		139 ppm		17.0-19.0' Same as above, less visible tar.	Heavy	Strong				
				-15	19.0-22.0' Not sampled.					20	
22-24	5 5 7 4		39 ppm		22.0-24.0' Same as above, sheen throughout, strong odor, no visible tar.	Sheen	Strong				

Well/Boring Id: PZ-01

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 5.33'	X Coordinate: 1418.72
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1368.27
Location: East of office building	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/24/95 - 10/24/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Sunny, 50's	type: Fill	fm: 12.00' to: 40.00'

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PID	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
				-20	24.0-27.0' Not sampled.					25	
27-29	15 15 13 18		33 ppm		27.0-29.0' Same as above, sheen, strong naphthalene odor.	Sheen	Strong				
				-25	29.0-32.0' Not sampled					30	
32-34	15 15 11 10		23 ppm		32.0-34.0' Same as above, no sheen, few very small tar blobs, strong naphthalene odor.	Heavy	Strong				
				-30	34.0-38.0' Not sampled					35	

Well/Boring Id: PZ-01

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 5.33'	X Coordinate: 1418.72
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1368.27
Location: East of office building	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/24/95 - 10/24/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout fm: .00' to: .90' type: Bentonite fm: .90' to: 1.50' type: Sand Pock fm: 1.50' to: 12.00' type: Fill fm: 12.00' to: 40.00'	
Drilling Method: 4 1/4 HSA		
Logged By: Jane Morgan		
Remarks: Sunny, 50's		

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PID	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
38-40	15 15 13 12				38.0-40.0' Same as above, no tar or sheen, moderate odor. End of boring at 40 ft.	None	Moderate			40	
				-35							
				-40						45	

Well/Boring Id: PZ-02

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 5.97'	X Coordinate: 1717.14
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1380.89
Location: Inside substation	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/26/95 - 10/26/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Overcast, 50's	type:	fm: to:

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PID	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction MP. EL. 5.97
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
7-9	3 2 1 2			5	0.0-5.0' Hand dug first 5 ft. - Sand and miscellaneous Fill material.						
				0	5.0-7.0' Augured through wooden piling.						
					7.0-9.0' No recovery, wet sandy wash in spoon. Black stained sand saturated with LNAPL, very strong petroleum odor noted in auger cuttings.	None	Slight				
				-5	9.0-12.0' Not sampled.						

Well/Boring Id: PZ-03

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 4.64'	X Coordinate: 1880.28
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1067.81
Location: South east corner of site	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/25/95 - 10/25/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Sunny, 50's	type:	fm: to:

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PD	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction MP. EL. 4.64
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
0-2	5				0.0-1.0 Dark Brown to black silty fine sand, little organic material, no odor.	None	None		FI		
2-4	5				1.0-4.0' Red brown fine-medium sand, some gravel, slight odor, moist at 4 ft.	None	Slight				
4-6	5				4.0-5.7' Heavy black staining, strong petroleum odor, oily liquid present.	None	Slight		SW	5	
					6.0-12.0 Not sampled.	Heavy	Strong			10	

Well/Boring Id: PZ-04

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 6.89'	X Coordinate: 1559.55
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1032.85
Location: West of gas holder	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/25/95 - 10/25/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Sunny, 50's	type:	fm: to:

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PD	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
0-2	5				0.0-1.5' fine brown Sand, some gravel, trace organic material, dry, no odor.	None	None		FI		MP. EL. 6.89 ↓
2-4	5			5	1.5-2.0' black fine-medium Sand and Coal fragments, trace brick fragments. 2.0-4 Brown to black Sand, Gravel, coal and brick fragments.	None	None				
4-6	5				4-6 Black fine-medium Sand, strong petroleum odor, saturated with LNAPL.	None	None			5	
6-8	6			0	8.0-12.0' Not sampled.	Heavy	Strong		SW	10	
				-5							

Well/Boring Id: PZ-05

Atlantic

Project Name: Rockaway Park Phase I

Elevation: 6.95'

X Coordinate: 1442.99

Project Number: 1691-07-03

Datum: Queens

Y Coordinate: 1068.12

Location: East of oil tank

Blank Casing:
type: PVC

dia: 2.00in fm: .0' to: 2.00'

Date(s): 10/25/95 - 10/25/95

Screens:

type: Slotted size: .020in dia: 2.00in fm: 2.00' to: 12.00'

Drilling Contractor: Aquifer Drilling

Annular Fill:

type: Grout fm: .00' to: .90'
type: Bentonite fm: .90' to: 1.50'
type: Sand Pack fm: 1.50' to: 12.00'
type: Fill fm: 12.00' to: 40.00'

Drilling Method: 4 1/4 HSA

Logged By: Jane Morgan

Remarks: Sunny, 50's

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PD	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction MP. EL. 6.95
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
2-4	4 4 5 4			5	0.0-2.0' Augered through cement.				FI		
			31 ppm		2.0-3.3' Fine brown Sand, little fine gravel and organic material, dry, no odor.	None	None				
					3.3-4.7' Black-stained fine Sand and coal fragments, strong odor.	Stain	Strong			5	
					4.7-7.0' Augered through concrete.						
7-9	10 9 10 8			0	7.0-9.0' No recovery, black oily material on side of spoon, strong odor.	Heavy	Strong				
					9.0-12.0' Not sampled.					10	

Well/Boring Id: PZ-05

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 6.95'	X Coordinate: 1442.99
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1068.12
Location: East of oil tank	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/25/95 - 10/25/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout fm: .00' to: .90' type: Bentonite fm: .90' to: 1.50' type: Sand Pack fm: 1.50' to: 12.00' type: Fill fm: 12.00' to: 40.00'	
Drilling Method: 4 1/4 HSA		
Logged By: Jane Morgan		
Remarks: Sunny, 50's		

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PID	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
12-14.5 5 7 4			104 ppm		12.0-14.0' Tar-saturated fine-medium sand, strong odor.	Heavy	Strong		SW		
					14.0-17.0' Not sampled.					15	
17-19.7 7 4 5			108 ppm	-10	17.0-17.8' Same as above, continues tar-saturated, strong odor. 17.8-19.0' Gray fine Sand, occasional tar lenses, slight odor.	Heavy	Strong Slight				
					19.0-22.0' Not sampled.					20	
22-24.4 4 3 3			127 ppm	-15	22.0-24.0' Tar saturated fine to medium sand, strong odor.	Heavy	Strong				

Well/Boring Id: PZ-05

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 6.95'	X Coordinate: 1442.99
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1068.12
Location: East of oil tank	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/25/95 - 10/25/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Sunny, 50's	type: Fill	fm: 12.00' to: 40.00'

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PD	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction	
					color, density, SOIL, admixture, moisture, other notes, ORIGIN							
27-29	2 2 2 3			-20	24.0-27.0' Not sampled.					25		
			47 ppm		27.0-29.0' Gray fine Sand, visible tar but not tar-saturated.	Heavy	Strong					
					29.0-32.0' Not sampled.					30		
32-34	1 2 2 4			-25	32.0-34.0 Gray fine-medium Sand, sheen, little visible tar, moderate odor.	Heavy	Moderate					
			57 ppm									
					34.0-38.0 Not sampled					35		

Well/Boring Id: PZ-05

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 6.95'	X Coordinate: 1442.99
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1068.12
Location: East of oil tank	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/25/95 - 10/25/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout fm: .00' to: .90' type: Bentonite fm: .90' to: 1.50' type: Sand Pack fm: 1.50' to: 12.00' type: Fill fm: 12.00' to: 40.00'	
Drilling Method: 4 1/4 HSA		
Logged By: Jane Morgan		
Remarks: Sunny, 50's		

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PID	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
38-40.3	3			-30	38.0-40.0 Same as above, some tar and sheen throughout, moderate odor. End of boring at 40 ft.	Heavy	Moderate			40	
				-35						45	
				-40							

Well/Boring Id: PZ-06

Atlantic

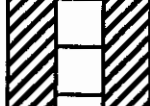
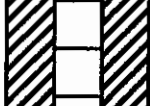
Project Name: Rockaway Park Phase I	Elevation: 6.48'	X Coordinate: 1080.29
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1120.13
Location: West of oil tank	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/26/95 - 10/26/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Sunny, 50's	type:	fm: to:

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PD	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction MP. EL. 6.48
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
0-2	6 6 8 4		0 ppm	5	0.0-1.0' black to brown fine Sand and Gravel, trace silt, coal fragments, clinker. 1.0-2.0' Concrete.	None	None		FI		
2-4	9 8 7 6		0 ppm		2.0-3.3' Black to brown silty Sand, some coal fragments, clinker.	None	None				
4-6	7 7 8 5		0 ppm		3.3-6.0' Light brown fine-medium Sand.	None	None			5	
6-7	14 12		0 ppm	0	6.0-7.0' Dark to light brown fine-medium Sand, some brick fragments, no odor.	None	None				
				-5	7.0-12.0' Not sampled. Note: Very thick, taffy-like tar was present on outside of augers.					10	

Well/Boring Id: PZ-07

Atlantic

Project Name: Rockaway Park Phase 1	Elevation: 4.93'	X Coordinate: 976.40
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1350.96
Location: West of office building	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/26/95 - 10/26/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Overcast, 50's	type:	fm: to:

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PID	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction MP. EL. 4.93
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
0-2	3 3 3		57 ppm		0.0-1.7' Brown fine-medium Sand, trace gravel and organics.	None	None		FI		
2-4	10 10 10 15		0 ppm		1.7-2.0' Dense tarry material, some sand, strong tar odor.	Heavy	Strong				
4-6	13 11 15 18		0 ppm	0	2.0-4.0' Fine-medium Sand, wood chips and gravel, no odor.	None	None				
					4.0-6.0' Red-brown fine-medium Sand, saturated, no odor.	None	None			5	
				-5	6.0-12.0' Not sampled.					10	

Well/Boring Id: PZ-08

Atlantic

Project Name: Rockaway Park Phase I

Elevation: 4.22'

X Coordinate: 1349.05

Project Number: 1691-07-03

Datum: Queens

Y Coordinate: 1190.28

Location: East of relief holder

Blank Casing:
type: PVC

dia: 2.00in fm: .0' to: 2.00'

Date(s): 10/24/95 - 10/24/95

Screens:

type: Slotted size: .020in dia: 2.00in fm: 2.00' to: 12.00'

Drilling Contractor: Aquifer Drilling

Annular Fill:

type: Grout fm: .00' to: .90'
type: Bentonite fm: .90' to: 1.50'
type: Sand Pack fm: 1.50' to: 12.00'
type: Fill fm: 12.00' to: 40.00'

Drilling Method: 4 1/4 HSA

Logged By: Jane Morgan

Remarks: Sunny, 60's

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PD	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction MP. EL. 4.22
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
0-2	12 15 18 7		6 ppm		0.0-0.4' Black-stained wood fragments, strong odor (creosote?). 0.4-2.0' Brown-black fine Sand, dry, slight odor.	None Stain None	None Strong Slight		FI		
2-4	4 4 4 4		17 ppm		2.0-4.0' Very strong unidentified odor, possibly degraded material.	None	Strong				
4-6	4 2 3 2		47 ppm	0	4.0-6.0' LNAPL-saturated fine-medium Sand, strong odor.	Heavy	Strong		SW	5	
6.0-7.0'					6.0-7.0' Not sampled.						
7-9	1 1 3 8		52 ppm		7.0-9.0' Same as above, continued LNAPL saturated.	Heavy	Strong				
9.0-12.0'				-5	9.0-12.0' Not sampled					10	

Well/Boring Id: PZ-08

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 4.22'	X Coordinate: 1349.05
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1190.28
Location: East of relief holder	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/24/95 - 10/24/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Sunny, 60's	type: Fill	fm: 12.00' to: 40.00'

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PIU	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
12-14	4				12.0-14.0' Gray to black fine-medium Sand, tar, staining and sheen throughout.	Heavy	Strong				
15-16	5										
17-19	5				14.0-17.0' Not sampled.					15	
19-21	6										
21-22	6				17.0-19.0' Gray fine to coarse Sand, shell fragments throughout, slight organic odor.	None	Slight				
22-24	8										
24-26	9				19.0-22.0' Not sampled.					20	
26-28	5										
28-30	6				22.0-24.0' Gray fine-medium Sand, moderate odor, no tar or sheen.	None	Moderate				
30-32	6										

Well/Boring Id: PZ-08

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 4.22'	X Coordinate: 1349.05
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1190.28
Location: East of relief holder	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/24/95 - 10/24/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Sunny, 60's	type: Fill	fm: 12.00' to: 40.00'

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PD	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
				-20							
					24.0-27.0' Not sampled.					25	
27-29	5 5 7 4				27.0-29.0' Same as above, moderate odor, slight sheen.	Sheen	Moderate				
				-25						30	
					29.0-32.0' Not sampled.						
32-34	7 12 12 11				32.0-34.0' Same as above, slight odor, no sheen.	None	Slight				
				-30						35	
					34.0-38.0' Not sampled						

Well/Boring Id: PZ-08

Atlantic

Project Name: Rockaway Park Phase I	Elevation: 4.22'	X Coordinate: 1349.05
Project Number: 1691-07-03	Datum: Queens	Y Coordinate: 1190.28
Location: East of relief holder	Blank Casing: type: PVC	dia: 2.00in fm: .0' to: 2.00'
Date(s): 10/24/95 - 10/24/95	Screens: type: Slotted	size: .020in dia: 2.00in fm: 2.00' to: 12.00'
Drilling Contractor: Aquifer Drilling	Annular Fill: type: Grout	fm: .00' to: .90'
Drilling Method: 4 1/4 HSA	type: Bentonite	fm: .90' to: 1.50'
Logged By: Jane Morgan	type: Sand Pack	fm: 1.50' to: 12.00'
Remarks: Sunny, 60's	type: Fill	fm: 12.00' to: 40.00'

Split Spoon Sample Depth (ft.)	Blow Per 6"	Recovery	PID	Elevation (ft.)	Soil Description	Visual Contamination	Odor	Lithology	USCS Code	Depth (ft.)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN						
38-40	8 7 14 11				38.0-40.0' Same as above, slight odor. End of boring at 40 ft.	None	Slight			40	
										45	



Site Id: RPMW-011

Date(s): 03/06/00 - 03/06/00

Datum: Mean Sea Level

Elevation: 3.04'

Measuring Point: 7.94'

Completed Depth: 47.00'

Total Depth: 47.50'

Screens:

type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00'

type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks: Geologic data derived from boring RPSB-02
See log RPSB-02 for sample interval details

Location: Rackaway Park - offsite

Purpose: Monitoring Well, Intermediate

Logged By: Ion Dovidson

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delta Well & Pump

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
5			0.1 ppm	Tan, fine, sandy FILL, loose, dry		
10			165 ppm 80.0 ppm	Black, fine sandy FILL, heavy tar staining, naphtha odor, shale fragments, wet, med dense		
15			8.0 ppm 1.8 ppm	Gray, fine SAND w/band of soft gray CLAY, light tar staining, naphtha odor, wet		
20			1.0 ppm 0.9 ppm	Gray, med-coarse SAND, slight naphtha odor, stoins, med dense, shells, wet		
25			0.9 ppm 2.0 ppm	Gray, fine-coarse SAND, naphtha/hydrocarbon odor, shells, wet, med dense		

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-011
Location: Rockaway Park - offsite	Date(s): 03/06/00 - 03/06/00
Purpose: Monitoring Well, Intermediate	Total Depth: 47.50'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
3			6.8 ppm 8.3 ppm	Gray, fine SAND, trace stain, naphtha odor, crushed shells, med dense, wet		
5			19.0 ppm 18.5 ppm	Gray, fine SAND, slight naphtha odor, moist, med dense		
8			2.4 ppm 1.8 ppm	Gray, med-fine SAND, slight naphtha odor, wet, med dense		
47.5				Base of well boring- 47.5'		



Site Id: RPMW-02D

Date(s): 03/07/00 - 03/07/00

Datum: Mean Sea Level

Elevation: 6.17'

Measuring Point: 11.12'

Completed Depth: 76.00'

Total Depth: 76.00'

Screens:

type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00'

type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

type: Slotted size: 0.010in dia: 2.00in fm: 64.00' to: 74.00'

Remarks: Geologic data derived from boring RPSB-03
See log RPSB-03 for recovery/sample intervals

Location: Rockaway Park - offsite

Purpose: Monitoring Well, Deep

Logged By: Jeff Diamond

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 6.00in

Contractor: Delta Well & Pump

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
0			0.0 ppm	Gray/brown, mix top soil, FILL, w/concrete clinker, dry		
1			0.0 ppm			
2			0.0 ppm	Brown, med-coarse sandy FILL w/concrete, clinker, coal tar, dry		
3			0.0 ppm			
4			0.0 ppm	Tan-orange, fine-med SAND, iron oxide staining, wet loose		
5			0.0 ppm	Orange-green-black, fine SAND, iron oxide/black staining, wet, loose		
6			0.0 ppm	Gray, fine SAND, slight naphtha odor, crushed shells, wet, loose		
7			0.0 ppm	Same as above		
8				No Recovery (16-18')		
9				No Recovery (18-20')		
10			0.0 ppm	Gray, fine SAND, slight naphtha odor, crushed shells, wet, loose		
11				No Recovery (22-24')		
12			0.0 ppm	Gray, fine SAND, sulfur/organic odor, crushed shells, wet, medium dense		
13			0.4 ppm	Gray, fine SAND, organic odor, medium dense, wet		
14			32.0 ppm	Gray, CLAY to fine SAND, light stain, tar odor, medium dense, wet		

Consulting Firm: Dvirka & Bartilucci				Site Id: RPMW-02D		
Location: Rockaway Park - offsite				Date(s): 03/07/00 - 03/07/00		
Purpose: Monitoring Well, Deep				Total Depth: 76.00'		
Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0				Base of well boring- 76 ft.		

Screen interval depths illustrated for wells RPMW-02S, RPMW-02I and RPMW-02D

Page 3 of 3

Site Id: RPMW-02D2

GP: Construction, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/29/02

Date Completed: 08/29/02

Remarks:

Ground Elevation: 11.72'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Vis. Signs of Contamination	Elevation (ft)	Well Construction	
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.					
0-7		40			0'-6' Asphalt and concrete road with gravel subgrade, no odors or visual impacts.					
								10		
					6'-7' Light brown, FINE to MED SAND, trace small gravel, dry, loose, non-cohesive, no odors or visual impacts.					
7-17		60	2.9 ppm		7'-16' Brown, FINE to MED SAND 7'-9' wet, loose, non-cohesive 9'-11' urban fill, tile and brick fragments, med gravel 11'-16' former road surface, concrete with asphalt and gravel subgrade, no odors or visual impacts.					
				10						
								0		

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-02D2



GHI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/29/02

Date Completed: 08/29/02

Ground Elevation: 11.72'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
17-27	70	3.9 ppm		16'-17'	Brown to grey MED SAND, trace coke, some small gravel, wet, loose, non-cohesive, slight petroleum odor, no visual impacts.				
		61.2 ppm		17'-23'	Grey, FINE to MED SAND, wet, loose, non-cohesive, tar blebs from 19'-20' patchy sheen from 20'-22.5', 1/4" band of tar saturated MED SAND at 22.5' faint to mod tar odor.				
		242 ppm		23'-24'	Black, SILTY CLAY, wet, dense, pliable, no visual impacts, slight purifier odor.				
		126 ppm		24'-27'	Light Grey, FINE SAND, wet, loose, non-cohesive, no visual impacts, faint naph odor.				
27-37	100	14.2 ppm		27'-35'	Gray, FINE to MED SAND, wet, loose, non-cohesive, bands of medium to coarse sand, small gravel and shell fragments at 29.5'-30' and 32'-35'.				

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

[illegible]

Certified By: Matt O'Neil

Page 3 of 8

Site Id: RPMW-02D2



GRI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/29/02

Date Completed: 08/29/02

Ground Elevation: 11.72'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
47-57	96	374 ppm		50	47'-57' Grey, FINE SAND, trace med sand, wet, loose, non-cohesive, 47'-51' 3" band of tar saturated med SAND at 47' and 51' thin 1/4" to 1/2" veins of brown tar stained sand running vertically through interval, mod to strong tar odor. 51'-55' No visual impacts, strong sulfur odor 55'-57' two thin 1/4" bands of tar saturated material at 56', strong sulfur odor.				
		83.5 ppm						-40	
		42.6 ppm							
57-67	95	32.5 ppm			57'-62' Grey, FINE SAND, trace med sand, trace shell fragments, strong sulfur odor, wet, loose, non-cohesive				

Legend: Physical
Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-02D2



CTR Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/29/02

Date Completed: 08/29/02

Ground Elevation: 11.72'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
			185 ppm		62'-66' Grey, FINE to MED SAND, wet, loose, non-cohesive, 1/2" to 3" bands of tar saturated med to coarse sand, some small pebbles, mod tar odor			-50	
67-77		100	11.7 ppm		66'-67' Brown, FINE SAND, wet, loose, non-cohesive, faint sulfur odor, no visual impacts.				
					67'-77' Brown FINE SAND, wet, loose, non-cohesive, no odors or visual impacts.				
			14.5 ppm	70	71'-73' Band of Black FINE SAND, wet, loose, non-cohesive, mod sulfur odor, no visual impacts. Black sand is slightly coarser than brown sand above and below.			-60	
			12.2 ppm		73'-77' Brown, FINE SAND, wet, loose, non-cohesive no odors or visual impacts.				

Legend: Physical
Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-02D2



CCI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/29/02

Date Completed: 08/29/02

Ground Elevation: 11.72'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
77-87	100	8.2 ppm		80	77'-87' Dark grey to brown, FINE SAND, wet, loose, non-cohesive, no odors or visual impacts.				
87-97	100	5.0 ppm			87'-97' Brown, FINE SAND, wet, loose, non-cohesive, no odors or visual impacts.				

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

[illegible]

Certified By: Matt O'Neil

Page 7 of 8

Site Id: RPMW-02D2



CEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/29/02

Date Completed: 08/29/02

Ground Elevation: 11.72'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
				110	END OF BORING AT 107'.			-100	

Legend: Physical

Observations

None



Blebs, Globbs, Lenses, Grain Coating, Sheens

Stain



Tar Saturated



Solid Tar



Site Id: RPMW-030

Date(s): 03/06/00 - 03/06/00

Datum: Mean Sea Level

Elevation: 2.95'

Measuring Point: 8.08'

Completed Depth: 77.00'

Total Depth: 78.00'

Screens:

type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00'

type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

type: Slotted size: 0.010in dia: 2.00in fm: 65.00' to: 75.00'

Remarks: Geologic data derived from boring RPSB-05
See log RPSB-05 for sample intervals/recovery

Location: Rockaway Park - offsite

Purpose: Monitoring Well, Deep

Logged By: J Diamond/I. Do

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delta Well & Pump

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
			ppm 0.0 ppm 4.0 ppm	Brown-tan, med-fine sandy FILL, organics, clinker, dry, loose		
5			3.2 ppm 4.2 ppm 8.6 ppm	Brown-light tan, fine-med sandy FILL, iron oxide stain, clinker, shells, loose, moist		
				No recovery (8-10')		
8			1.5 ppm	Gray, fine SAND, shells, wet, medium dense		
				No recovery (12-14')		
5			0.2 ppm	Gray, fine SAND, naphtha odor, wet, medium dense		
			1.6 ppm	Same as above, no odor		
			0.2 ppm	Same as above		
2			0.2 ppm	Black-gray, fine SAND, organic/naphtha odor, medium dense		
			0.2 ppm	Same as above		
			40.0 ppm	Same as above		
			15.2 ppm	Same as above, but loose		
5			34.0 ppm	Gray, fine-coarse SAND, naphtha odor, shells, wet, medium dense		
			18.0 ppm			
			28.0 ppm	Interval Skipped		

Consulting Firm: Dvirka & Bartilucci

Site Id: RPMW-03D

Location: Rockaway Park - offsite

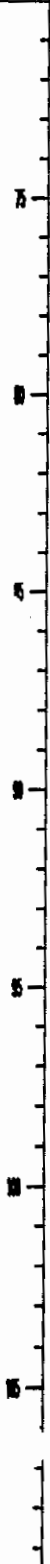
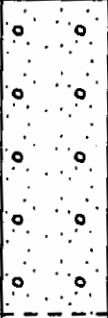
Date(s): 03/06/00 - 03/06/00

Purpose: Monitoring Well, Deep

Total Depth: 78.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
			1.8 ppm	Gray, fine SAND, naphtha odor, moist, dense		
			0.8 ppm			
			5.4 ppm	Gray, medium SAND, moist, loose		
			2.3 ppm			
			25.0 ppm	Same as above, w/heavy sulfur/naphtha odor		
5			32.0 ppm			
			159.0 ppm	Same as above, but medium dense		
			60.0 ppm			
			110.0 ppm	Same as above		
10			111.0 ppm			
15			110.0 ppm	Same as above, but fine sand, loose		
			130.0 ppm			
20			30.0 ppm	Same as above		
			7.6 ppm			
25			0.0 ppm	Gray, med SAND, slight organic odor, shells, wet, loose		
30			0.0 ppm	Brown, fine SAND, moist, dense		
35			0.0 ppm	Brown, fine SAND, wet, dense		

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-03D
Location: Rockaway Park - offsite	Date(s): 03/06/00 - 03/06/00
Purpose: Monitoring Well, Deep	Total Depth: 78.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
				Base of well boring- 78 ft.		



**Dvirka
and
Bartilucci**
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RPMW-041

Date(s): 02/07/00 - 02/07/00

Datum: Mean Sea Level

Elevation: 2.87'

Measuring Point: 11.21'

Completed Depth: 47.00'

Total Depth: 48.00'

Screens:

type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00'
type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks: Geologic data derived from boring RPSB-07
See log for RPSB-07 for recovery/sample intervals

Location: Rockaway Park

Purpose: Monitoring Well, Intermediate

Logged By: Jeff Diamand

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 8.25in

Contractor: LAWES

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
5				FILL (upper 15' not sampled)		
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						
69						
70						
71						
72						
73						
74						
75						
76						
77						
78						
79						
80						
81						
82						
83						
84						
85						
86						
87						
88						
89						
90						
91						
92						
93						
94						
95						
96						
97						
98						
99						
100						

Consulting Firm: Dvirka & Bortilucci	Site Id: RPMW-04I
Location: Rockaway Park	Date(s): 02/07/00 - 02/07/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
0			0.0 ppm	Med gray, coarse-med SAND w/some mica, fine GRAVEL, shell fragments		
1			0.0 ppm	Med gray, medium-v. coarse SAND, w/rounded med GRAVEL, some mica, tr. shell fragments		
2			0.0 ppm	Med gray, med-coarse SAND w/some fine GRAVEL, shell fragments		
3			0.0 ppm	Med-dark gray, med-fine, micaceous SAND		
4			0.0 ppm	Same as above		
5			0.0 ppm	Medium dark gray, medium-v.coarse. micaceous SAND		
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						



Site Id: RPMW-05I

Date(s): 02/04/00 - 02/04/00

Datum: Mean Sea Level

Elevation: 2.27'

Measuring Point: 11.21'

Completed Depth: 47.00'

Total Depth: 48.00'

Location: Rockaway Park

Purpose: Monitoring Well, Intermediate

Logged By: Jeff Diamond

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 9.00in

Contractor: LAWES

Screens:

type: Slotted size: 0.020in dio: 2.00in fm: 5.00' to: 15.00'
type: Slotted size: 0.020in dio: 2.00in fm: 35.00' to: 45.00'

Remarks: Geotech samples collected from: 2-4', 35-37', 40-42', and 43-45'.

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
2-4'		0.0 ppm		Moderate br-dusky yellowish br, silty clay FILL, fine-coarse gravel, and clinker Pale yellowish orange-moderate br, med-c. SAND, w/some mica and f. gravel, loose		
4-6'		0.0 ppm		Dark yellowish orange-pale yellowish br, med. SAND, w/some f. gravel trace shell fragments, loose		
6-8'		0.0 ppm 3.8 ppm 4.0 ppm		Grayish orange, coarse-v.coarse SAND, w/fine-coarse gravel, wet Med.-med. dark gray, med.-coarse SAND, w/some mica		
8-10'		0.0 ppm 4.4 ppm 14.1 ppm		Medium gray, medium, SAND, loose, w/ some mica, slight odor		
10-12'		8.9 ppm 27.1 ppm 17.5 ppm		Medium gray-medium dark gray, med. SAND, w/some mica, trace gravel, loose		
12-14'		12.5 ppm 27.8 ppm 30.8 ppm		Medium-dark gray, med.-coarse SAND, w/fine-coarse gravel, and some mica, loose, odor		
14-16'		10.5 ppm 25.3 ppm		Medium dark-medium gray, coarse-med. SAND, w/some mica, loose		
16-18'		1.8 ppm 3.7 ppm		Medium gray, medium-coarse SAND, w/some mica Dark gray, very soft CLAY, w/silt and v.fine sand, slight odor		
18-20'		0.7 ppm 1.2 ppm		Dark gray, soft micaceous CLAY, w/shell fragments, interbedded w/medium gray, med. SAND, loose, slight odor		
20-22'		0.1 ppm 3.3 ppm 6.3 ppm 5.8 ppm 9.5 ppm		Dark grey soft-medium stiff, micaceous CLAY, w/silt, slight odor, interbedded w/medium dark gray, medium SAND Dark gray, micaceous, soft CLAY, w/some shells and oil sheen		
22-24'		18 ppm		Med. light gray, med.-coarse SAND, w/fine-coarse gravel, shell fragments, odor		
24-26'		8.4 ppm 13.9 ppm 23.6 ppm		Dark gray, soft micaceous CLAY, w/shell fragments and little silt, odor Medium light gray, coarse SAND, w/some shells and gravel		
26-28'		53.1 ppm 12.7 ppm 5.8 ppm		Dark gray, medium-fine, micaceous SAND, odor Medium gray, medium, micaceous SAND, w/medium gravel, shell fragments		
28-30'		0.0 ppm 0.0 ppm 6.3 ppm		Medium gray-medium dark gray, medium-coarse, micaceous SAND, medium dense, w/some very coarse sand		

Consulting Firm: Dvirko & Bartilucci	Site Id: RPMW-05I
Location: Rockaway Park	Date(s): 02/04/00 - 02/04/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
		30-32'	2.2 ppm 7.4 ppm 15.6 ppm	Grayish black, soft, micaceous CLAY		
		32-34'	0.0 ppm 0.5 ppm	Medium-light gray, medium-fine, micaceous SAND, w/ some-trace mica, slight odor		
		34-36'	0.0 ppm 23.5 ppm 14.4 ppm	Medium gray, medium SAND, medium dense, w/ some mica		
		36-38'	0.0 ppm 0.8 ppm	Same as above		
		38-40'	0.0 ppm 5.6 ppm	Medium gray, medium, micaceous SAND, medium dense		
		40-42'	0.0 ppm 2.0 ppm 11.1 ppm	Same as above, slight odor		
		42-44'	2.6 ppm 5.3 ppm	Same as above, no odor		
		44-46'	5.6 ppm 14.8 ppm 19.9 ppm 19.4 ppm	Same as above		
				Base of well boring - 48		



**Dvirka
and
Bartilucci**
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RPMW-061

Date(s): 02/09/00 - 02/09/00

Datum: Mean Sea Level

Elevation: 3.56'

Measuring Point: 11.98'

Completed Depth: 47.00'

Total Depth: 48.00'

Location: Rockaway Park

Purpose: Monitoring Well, Intermediate

Logged By: J. Schafer

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 8.25in

Contractor: LAWES

Screens:

type: Other size: 0.000in dia: 2.00in fm: 6.00' to: 16.00'
type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks: Screen interval given for pre-existing shallow cluster member MW-A

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
5		4-6'	0.0 ppm	Orange-brown, fine-medium SAND, loose, dry		
		6-8'	0.0 ppm	Same as above		
		8-10'	0.0 ppm	Orange to tan to black, fine-medium SAND, medium dense		
11		10-12'	0.0 ppm	Black, fine-medium SAND, medium dense, wet		
		12-14'	5.6 ppm 17.7 ppm 7.2 ppm	Black, fine SAND, medium dense, wet, slight hydrocarbon odor		
15		14-16'	8.0 ppm 8.5 ppm	Black(top .75') changing to black-gray, fine SAND, medium dense, wet, slight hydrocarbon odor		
		16-18'	12 ppm 285 ppm	Black, fine-coarse SAND, medium dense, wet, heavy hydrocarbon odor at bottom of sample, brown staining		
		18-20'	2.0 ppm 21 ppm	Black to dark gray, fine-coarse SAND, medium dense, wet, w/shells and trace of gravel, slight hydrocarbon odor, slight brown staining		
23		20-22'	30 ppm 20 ppm	Black-gray, fine SAND, medium dense, wet, slight naphtha odor, slight sheen, trace shells		
		22-24'	200 ppm 220 ppm 41 ppm	Gray, fine to coarse SAND, w/fine rounded gravel, heavy naphtha odor to 23.5', heavy staining to 23.5', trace shells		
25		24-26'	150 ppm 162 ppm 34 ppm	Gray, fine SAND, medium-dense, wet, heavy naphtha odor, sheen		
		26-28'	81 ppm 21 ppm	Dark gray, fine SAND, dense, wet, naphtha odor, sheen		
		28-30'	100 ppm 30 ppm	Same as above		

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-06I
Location: Rockaway Park	Date(s): 02/09/00 - 02/09/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
		30-32'	200 ppm 42 ppm	Dark gray, f. SAND, w/rounded gravel, naphtha odor, intermittent brawn staining		
		32-34'	60 ppm 15 ppm	Dark gray, fine SAND, wet, naphtha odor, sporadic staining w/brown product and some shells		
		34-36'	9.5 ppm 130 ppm	Gray, fine SAND, dense, wet, heavy naphtha odor at 36', w/brown staining		
		36-38'	141 ppm 60 ppm	Same as above, sheen		
		38-40'	21 ppm 10 ppm 21 ppm	Gray, fine SAND, dense, wet, brackish odor, trace well grounded gravel		
		40-42'	0.5 ppm 1.3 ppm 4.5 ppm	Dark gray, fine SAND, wet, dense, brackish odor		
		42-44'	2.9 ppm 24.5 ppm	Same as above (Discrete H2S = 5 ppm; Total Headspace H2S = 41 ppm)		
		44-46'	24.5 ppm 31.4 ppm	Same as above (Discrete H2S = 3 ppm; Total Headspace H2S = 3 ppm)		
				Base of Boring - 48'		



Site Id: RPMW-07D

Date(s): 03/14/00 - 03/14/00

Datum: Mean Sea Level

Elevation: 1.67'

Measuring Point: 7.24'

Completed Depth: 77.00'

Total Depth: 77.00'

Location: Rockaway Park

Purpose: Monitoring Well, Deep

Logged By: J.Diamond/J.Sch

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delta Well & Pump

Screens:

type: Slotted size: 0.020in dia: 2.00in fm: 1.50' to: 11.50'
 type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'
 type: Slotted size: 0.020in dia: 2.00in fm: 65.00' to: 75.00'

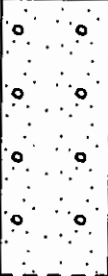
Remarks: Geologic/sample data derived from boring RPSB-11 (0-47') and RPSB-10 (48-67')

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
5				Med brown/dk yellow-orange, med-coarse SAND w/some GRAVEL Dark yellow brown, SILTY CLAY Med brown/dk yellow-orange, med-coarse SAND w/same GRAVEL Gray-orange, coarse-v.coarse SAND w/fine-medium GRAVEL Medium-medium dark gray, medium-coarse SAND w/some mica		
5		95.0 ppm 35.0 ppm 100.0 ppm		Brown, fine SAND, stained, naphtha odor, loose, wet Gray fine SAND, naphtha odor loose, wet Brawn, fine SAND, stain, nophtha odor, loose, wet		
2		185.0 ppm		Gray, fine SAND, med dense, wet, naphtha odor, intermittent brown staining		
3		187.0 ppm		Same as above, w/same free product, brown staining at 25-25.25'		

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-07D
Location: Rockaway Park	Date(s): 03/14/00 - 03/14/00
Purpose: Monitoring Well, Deep	Total Depth: 77.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
3			160.0 ppm	Gray, fine SAND, medium dense, wet, naphtha odor, intermittent brown staining		
3			35.0 ppm	Same as above		
4			14.0 ppm	Same as above, with no staining		
5			14.6 ppm 1.0 ppm	Same as above, brackish odor		
9			0.0 ppm 30.0 ppm 8.0 ppm	Gray, fine SAND, medium dense, wet, brackish odor		
9			0.0 ppm	Medium gray, coarse-med, micaceous SAND		
9			2.1 ppm 0.1 ppm	Medium dark gray, coarse-v.coarse micaceous SAND w/shell fragments, trace f. GRAVEL		
6			0.0 ppm 0.5 ppm	Medium-dark gray, medium-fine, micaceous SAND		

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-07D
Location: Rockaway Park	Date(s): 03/14/00 - 03/14/00
Purpose: Monitoring Well, Deep	Total Depth: 77.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
				Base of well boring at 77 feet		

Site Id: RPMW-07D2



GBI Consulting, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/14/02

Date Completed: 08/14/02

Remarks:

Ground Elevation: 8.16'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Vis. Signs of Contamination	Elevation (ft)	Well Construction	
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.				MP.	EL. 7.75
0-7		75			1'-7' Fill material consisting of gravel, cinder, ash, coke. wet at 6 bgs. No odor or visual impacts.					
7-17		85			7'-12' Black, SMALL to MED GRAVEL, some large gravel, loose, wet, med fuel oil odor. Patchy sheen from 8.5-9.5, moderate to heavy sheen from 9.5-12'			0		
			1344 ppm	10						
			1785 ppm		12'-17' Dark gray to light gray, FINE SAND, little small gravel, trace med to coarse sand, light to moderate tar odor, 1/2 to 2" layers of tar stained med sand from 12'-15'6"					

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens

Page 1 of 8



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-07D2



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/14/02

Date Completed: 08/14/02

Ground Elevation: 8.16'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
17-27		100	1672 ppm		3"-6" layers of tar coated grains from 15'6" to 17'				
				17'-19'	Brown stained, FINE SAND, loose, non-cohesive, wet, tar saturated, 1/2 veins of gray sand with no tar staining. mod to strong tar odor.			-10	
				19'-23'	Gray, FINE SAND, wet loose, non-cohesive, trace shell fragments.				
				20	1"-3" layers of tar coated MED SAND and shell fragments from 19' to 21' and 22'6" to 23'.				
			1719 ppm	23'-24.5'	Brown, MED to COARSE SAND, some small gravel, little shell fragments, wet, loose, non-cohesive, heavy tar coating on grains, mod tar odor				
				24.5'-25'	Gray, FINE SAND, trace shell fragments, loose, non-cohesive, wet, no visual impacts, slight naphthalene odor				
			1015 ppm	25.5'-27'	Brown stained, med to coarse SAND, loose, non-cohesive, wet, some shell fragments, some small gravel, Strong tar odor				
27-37		100		27'-30'	1/2" bands of tar stained and tar coated grains alternating from 26' - 27'. Gray, FINE SAND, wet loose, non-cohesive, slight tar odor. 1/4" veins of tar stained sand at 29'-29.5'			-20	

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-07D2



GEL Environmental, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/14/02

Date Completed: 08/14/02

Ground Elevation: 8.16'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
			1324 ppm		30'-37' As Above with 6" to 1' bands of tar coated to tar saturated med to coarse SAND with trace shell fragments.				
37-47		100	898 ppm		37'-44' As Above with 1" bands of tar saturated SAND at 37'-38' and tar coated to tar saturated from 38'-44', strong tar odor.			-30	
			118 ppm	40	44'-47' Gray, FINE SAND, wet, loose, non-cohesive, slight naphthalene odor throughout. 2' bands of tar saturated MED SAND with trace shell fragments at 45', 46', and 47', thin veins of stained soil running vertically between 44' and 44.6'.				

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-07D2



GFI Corporation, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/14/02

Date Completed: 08/14/02

Ground Elevation: 8.16'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PTD	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
47-57		90			47'-50' Grey, FINE SAND, wet, loose, non-cohesive, 1"-3" bands of brown tar stained med sand and shell fragments. brown stained veins running vertically thru sample, mod tar odor.			-40	
			128 ppm	50	50'-51' Dark gray, FINE SAND, wet, loose, non-cohesive with 1 vein of tar saturated med sand running vertically				
			52.7 ppm		51'-57' Grey, FINE SAND, wet, loose, non-cohesive, 1"-3" bands of med sand, that is brown tar saturated at 53, 54.2, 54.8 and 56, thin veins between 54.2 and 56 mod to heavy tar odor				
57-67		98	139 ppm		57'-61' Grey, MED to COARSE SAND, wet, loose, non-cohesive, tar blobs and mod sheen from 60'-61', slight to moderate tar odor			-50	

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-07D2



GRI Environmental Services, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/14/02

Date Completed: 08/14/02

Ground Elevation: 8.16'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
67-77		100	192 ppm 13.7 ppm 89.5 ppm 15.9 ppm	70	61'-65' Dark brown, FINE SAND, wet, loose, non-cohesive, brown tar staining, faint to mod tar odor. 1' bands of coarse sand with black heavily viscous tar, almost emulsified from 63'-64'. 65'-66' Brown, FINE to MED SAND, wet, loose, non-cohesive. 65.5'-66' black to brown saturated bands of coarse sand with mod tar odors. 66'-67' Black, FINE SAND, loose, non-cohesive, wet, organic odor, no visual contamination. 67'-70' Black, FINE SAND, loose, non-cohesive, wet, mod naphthalene odor, thin 1/2" of heavily tar coated grains at 68' and 68.5', slight sheen at 68'-69.5' 70'-77' Brown, FINE to MED SAND, wet, loose, non-cohesive, no visual contamination and no odors. Thin 2" layer of FINE SAND with trace silt at 73'.			-60	

Legend: Physical

Observations



None



Stain



Blebs, Globbs, Lenses, Grain Coating, Sheens



Tar Saturated



Solid Tar

Site Id: RPMW-07D2



GEM Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/14/02

Date Completed: 08/14/02

Ground Elevation: 8.16'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
77-87	100	165 ppm		77'-82'	Brown, FINE SAND, wet, loose, non-cohesive, strong to mod naphthalene odor, mod sheen from 78-81'.			-70	
		117 ppm		82'-87'	Brown, FINE SAND, wet, loose, non-cohesive, mod naphthalene odor, no visual contamination.				
87-97	100	42.6 ppm		88'-97'	Brown, FINE SAND, wet, loose, non-cohesive, slight naphthalene odor no visual contamination.			-80	

Legend: Physical
Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

The diagram shows a circular cell-like structure. At the center is a dark, circular nucleus. Surrounding the nucleus is a lighter, granular cytoplasm. The outer boundary is a thin, dark line representing the cell membrane. Various small, dark, irregular shapes are scattered throughout the cytoplasm, representing organelles or particles. Some of these shapes are elongated, while others are more rounded. The overall appearance is that of a cross-section of a cell or a microorganism.

Client: Keyspan Energy, Inc.			
Project Number: 982482	Project Name: Rockaway Park	Date Started: 08/14/02	Date Completed: 08/14/02
Remarks:		Ground Elevation: 8.16'	Datum: Mean Sea Level
		Contractor: ProSonic, Inc.	Total Depth: 107.00'
		Drilling Method: Sonic Drilling	
		Logged By: Matt O'Neil	Certified By: Matt O'Neil

Legend: Physical
Observations

None

Blebs, Globbs, Lenses, Grain Coating, Sheens

Stain

Stain

Tar Saturated

Solid Tar

Site Id: RPMW-07D2



G&E Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/14/02

Date Completed: 08/14/02

Ground Elevation: 8.16'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
				110	END OF BORING AT 107'			-100	
								-110	

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar



Site Id: RPMW-081

Date(s): 02/08/00 - 02/08/00

Datum: Mean Sea Level

Elevation: 3.07'

Measuring Point: 11.34'

Completed Depth: 47.00'

Total Depth: 48.00'

Screens:

type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00'
type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks: Geologic data derived from boring RPSB-21
See log RPSB-21 for recovery/sample intervals

Location: Rockaway Park

Purpose: Monitoring Well, Intermediate

Logged By: Jeff Diamond

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 8.25in

Contractor: LAWES

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
1.1		1.1 ppm		Gray-black, coarse-med, sandy FILL w/coal, tar, odor		
1.9		1.9 ppm		Light gray, coarse-med, sandy FILL w/some mica & iron staining		
2.0		2.0 ppm		Med light gray, med-fine, micaceous SAND, w/iron staining		
7.4		7.4 ppm		Same as above, wet		
18.3		18.3 ppm		Olive gray, med-coarse, micaceous SAND w/some lignite, shell fragments		
0.0		0.0 ppm		Gray-blk/drk gry, med-fine to med-coarse SAND, w/silt & shell fragments, mica		
0.0		0.0 ppm		Med-drk gray, med-v.coarse, micaceous SAND, w/trace subrounded gravel		
0.0		0.0 ppm		Medium gray, med-coarse SAND w/some mica		
0.3		0.3 ppm		Medium gray, coarse-v.coarse SAND w/some mica, fine GRAVEL		
1.0		1.0 ppm		Med gray, coarse-med, micaceous SAND		
2.2		2.2 ppm		Med gray, med-coarse, micaceous SAND, w/some v.coarse sand/fine gravel		
1.9		1.9 ppm		Med-dark gray, coarse-v.coarse SAND w/shell fragments, fine-med gravel, some mica		
1.6		1.6 ppm		Same as above		
5.8		5.8 ppm		Med gray, med-coarse, micaceous SAND		
4.4		4.4 ppm		Dark gray, v.coarse-coarse SAND w/shell fragments, fine-med gravel		
5.8		5.8 ppm		Medium-dark gray, med-coarse SAND, some mica		
8.2		8.2 ppm		Medium-dark gray, med-v.coarse SAND, w/fine-med gravel		
9.5		9.5 ppm		Med gray, coarse-med SAND, w/some mica, shell fragments, subrounded gravel		
10.2		10.2 ppm		Same as above, w/fine-med gravel		
10.0		10.0 ppm				
9.0		9.0 ppm				
7.3		7.3 ppm				
20.3		20.3 ppm				
3.1		3.1 ppm				
85.0		85.0 ppm				
58.6		58.6 ppm				

Consulting Firm: Dvirko & Bartilucci

Site Id: RPMW-08I

Location: Rockaway Park

Date(s): 02/08/00 - 02/08/00

Purpose: Monitoring Well, Intermediate

Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
			18.0 ppm	Medium-dark gray, coarse-med SAND, w/fine-med gravel, some mica and shells		
			90.7 ppm			
			70.9 ppm			
			446 ppm	Med gray, v.coarse-coarse SAND w/shell fragments, some fine-med gravel		
			290 ppm	Medium gray, med-coarse, micaceous SAND		
3			634 ppm	Medium-gray, med-v.coarse SAND, w/shell fragments, fine gravel		
			589 ppm			
			504 ppm	Medium gray, med-coarse, micaceous SAND, trace shell fragments		
4			202 ppm	Same as above, no shell fragments		
			179 ppm			
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48				Base of boring at 48'		

CONFIDENTIAL

Certified By: Matt O'Neil

Page 1 of 6

Site Id: RPMW-08D



GRI Consulting, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks: No material description due to proximity to RPMW-08D2.

Date Started: 08/22/02

Date Completed: 08/22/02

Ground Elevation: 8.81'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
				20				-10	
								-20	

Legend: Physical

Observations



None



Blebs, Glabs, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Site Id: RPMW-08D



G&B Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks: No material description due to proximity to RPMW-08D2.

Date Started: 08/22/02

Date Completed: 08/22/02

Ground Elevation: 8.81'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.				
				40				-30	

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-08D



GRI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks: No material description due to proximity to RPMW-08D2.

Date Started: 08/22/02

Date Completed: 08/22/02

Ground Elevation: 8.81'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
				50				-40	
								-50	

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Site Id: RPMW-08D



ProSonic, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks: No material description due to proximity to RPMW-08D2.

Date Started: 08/22/02

Date Completed: 08/22/02

Ground Elevation: 8.81'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
				70				-60	

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-08D



G&B Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks: No material description due to proximity to RPMW-08D2.

Date Started: 08/22/02

Date Completed: 08/22/02

Ground Elevation: 8.81'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
				80				-70	
								-80	

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-08D2



Geo Environmental, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/22/02

Date Completed: 08/22/02

Remarks:

Ground Elevation: 8.90'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Vis. Signs of Contamination	Elevation (ft.)	Well Construction	
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.					
0-7		48	34.5 ppm		0'-3' Light brown to black FINE SAND, some small gravel, little organic, no odor or visual impacts.					
					3'-7' Dark brown FINE SAND, trace med sand, little ash, no odor or visual impacts.					
7-17		95	18.8 ppm		7'-10' Light brown, FINE SAND, wet, loose, non-cohesive, yellow-orange to dark orange staining (iron oxide)					
			10.9 ppm	10-	10'-17' Grey to dark grey, FINE SAND, wet, loose, non-cohesive, no odors or visual impacts.					

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-08D2



GDI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/22/02

Date Completed: 08/22/02

Ground Elevation: 8.90'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
17-27		100	3.8 ppm	20	17'-27' Grey, Fine SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive, no odors or visual impacts. 21'-23' band of MED to COARSE SAND, some shell fragments, some small gravel.			-10	
27-37		100	10.8 ppm		27'-37' Grey, FINE SAND, trace med sand, trace shell fragments, no visual impacts. 31'-34.5' band of MED to COARSE SAND, some shell fragments, some small gravel, faint to mod naph odor from 30'-37'.			-20	

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-08D2

PRO
Sonic
CONSTRUCTION, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/22/02

Date Completed: 08/22/02

Ground Elevation: 8.90'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
37-47		100	2.0 ppm	40	37'-47' Grey, FINE SAND, wet, loose, non-cohesive, no visual impacts, no odors.			-30	

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stoin



Tor Saturated



Solid Tor

Site Id: RPMW-08D2



GHI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/22/02

Date Completed: 08/22/02

Ground Elevation: 8.90'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
47-57		70			47'-52' As Above, No odors or visual impacts.				
				50				-40	
			38.2 ppm		52'-57' Grey, FINE to MED SAND, trace coarse sand, some shell fragments, little small gravel, wet, loose, non-cohesive, no visual impacts, faint naphthalene odor.				
57-67		100	4.6 ppm		57'-65' As Above, No visual impacts or odors.			-50	

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Page 5 of 8

Site Id: RPMW-08D2



GSI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/22/02

Date Completed: 08/22/02

Ground Elevation: 8.90'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PIU	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
77-87		100	0.0 ppm	80	77'-87' Brown FINE SAND, wet, loose, non-cohesive, no odors or visual impacts.			-70	
87-97		100	0.0 ppm		87'-97' As Above, no odors or visual impacts.			-80	

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-08D2



G&E Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/22/02

Date Completed: 08/22/02

Ground Elevation: 8.90'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PTD	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
97-107		95	0.0 ppm		97'-107' As Above, No odors or visual impacts.			-90	

Legend: Physical
Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Page 8 of 8



**Dvirka
and
Bartilucci**
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RPMW-09D2

Date(s): 03/09/00 - 03/10/00

Datum: Mean Sea Level

Elevation: 1.77'

Measuring Point: 9.78'

Completed Depth: 107.00'

Total Depth: 107.00'

Screens:

type: Other	size: 0.000in	dia: 2.00in	fm: 2.00'	to: 12.00'
type: Slotted	size: 0.020in	dia: 2.00in	fm: 35.00'	to: 45.00'
type: Slotted	size: 0.020in	dia: 2.00in	fm: 66.00'	to: 76.00'
type: Slotted	size: 0.020in	dia: 2.00in	fm: 95.00'	to: 105.00'

Remarks: Screen interval given for pre-existing shallow cluster member, PZ-08. Geologic data from boring RPSB-31A, see log for recovery/sample intervals

Location: Rockaway Park

Purpose: Monitoring Well, Deep

Logged By: Jeff Diamond

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 6.00in

Contractor: Della Well & Pump

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
5			32.2 ppm	Dusky yellow-brown, coarse-fine, sandy FILL w/fine-coarse GRAVEL, some silt, bricks, wood, odor		
			135 ppm	Grayish-black, med-v.coarse SAND, saturated w/product, w/some fine-coarse GRAVEL, staining, odor, wet		
10			92.9 ppm 150 ppm	Dark gray, med-v.coarse SAND, w/some fine-coarse GRAVEL, staining, odor, wet		
15			120 ppm 258 ppm 172 ppm	Gray-black, med-coarse SAND, w/f.-coarse GRAVEL, saturated w/product, stain, odor Grayish-black, med-fine SAND, odor, sheen		
20			157 ppm 264 ppm 123 ppm	Grayish-black/med gray, coarse-v.coarse SAND, w/trace fine GRAVEL, staining, odor		
25			123 ppm 250 ppm 137 ppm 148 ppm	Grayish-brown/med dark gray, coarse-med SAND, w/fine-coarse GRAVEL, shell fragments, zone of product-saturated sand, staining, odor		

Consulting Firm: Dvirko & Bartilucci	Site Id: RPMW-09D2
Location: Rockaway Park	Date(s): 03/09/00 - 03/10/00
Purpose: Monitoring Well, Deep	Total Depth: 107.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
			63.2 ppm 72.0 ppm 107 ppm	Med gray, coarse-med SAND, med dense, w/some mica, trace fine-coarse GRAVEL, odor, staining, sheen		
3			9.4 ppm 1.9 ppm 23.7 ppm	Med gray, med-fine SAND, dense, w/some mica, thin zone of staining at top of sampler, odor		
4				No recovery (40-42')		
5			182 ppm	Med gray, med-fine SAND, w/some mica, shell fragments, staining, odor, zones of product-saturated sand		
9			65.7 ppm 68.0 ppm	Med gray, med-fine SAND, w/some mica, staining, odor		
5			88.4 ppm 85.2 ppm 42.9 ppm	Med dark gray, med-coarse SAND, some product covered fine-coarse GRAVEL, shell frags, staining, odor, saturated sand w/product		
8			0.3 ppm 2.1 ppm	Med dark gray, coarse-med SAND w/some mica, trace shell frags, staining, odor & sheen		
6			45.6 ppm 31.6 ppm 83.9 ppm 112 ppm	Med dark gray, coarse-med SAND, w/some mica, staining, odor Grayish-brown, med-fine SAND saturated w/product, odor, staining		

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-09D2
Location: Rockaway Park	Date(s): 03/09/00 - 03/10/00
Purpose: Monitoring Well, Deep	Total Depth: 107.00'

Depth (ft)	Recovery	Sample Interval	PD	Material Description	Graphic Log	Monitoring Well Screen Zones
			133 ppm 136 ppm 111 ppm	Grayish-black/brownish gray, fine-med, micaceous SAND, saturated w/product, odor, staining, trace fine GRAVEL		
7			53.7 ppm 69.1 ppm 38.2 ppm	Brown-black, fine-med, micaceous SAND, saturated w/product, odor, stain, sheen		
8			5.5 ppm 10.1 ppm 23.6 ppm	Med drk gray/brn-gray, coarse-med, micaceous SAND, loose, lt. stain, sheen, odor Grayish-black, med-fine to med SAND, some mica, saturated w/product, odor, sheen, staining		
9			57.1 ppm 67.7 ppm	Dark gray, med-fine SAND, micaceous, saturated w/product, staining, sheen		
10			25.6 ppm 33.3 ppm 19.8 ppm 13.2 ppm	Dark gray, medium-fine SAND, tar, naphtha odor, wet, loose		
11			54.2 ppm 64.6 ppm 36.3 ppm 8.0 ppm	Gray/black/blue, med SAND, tar waste saturated w/product, odor, wet, dense		
12			89.1 ppm 35.6 ppm 73.4 ppm 55.1 ppm	Gray, medium SAND, tar saturated w/product, strong naphtha odor, sheen, wet, dense		
13			44.3 ppm 77.9 ppm 78.3 ppm 75.4 ppm	Same as above, but loose		
14				See boring log RPSB-31A for description of materials in this boring below well installation depth.		



Site Id: RPMW-10I

Date(s): 02/22/00 - 02/22/00

Datum: Mean Sea Level

Elevation: 2.37'

Measuring Point: 10.67'

Completed Depth: 47.00'

Total Depth: 48.00'

Location:

Purpose: Monitoring Well, Intermediate

Logged By: J. Schafer

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 8.25in

Contractor: LAWES

Screens:

type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00'

type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks:

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
4-6'		0.1 ppm		Gray, fine-medium SAND, w/orange banding, dry, loose		
6-8'		0.1 ppm		Gray to brown, fine-medium SAND, wet at 7', loose		
8-10'		4.1 ppm		Gray to black, fine SAND, loose, wet, slight hydrocarbon odor		
10-12'		14.4 ppm 3.1 ppm		Light black, fine SAND, w/ fine-coarse sand, trace subrounded gravel, hydrocarbon odor		
12-14'		22 ppm 75 ppm		Light black, fine SAND, loose, wet, hydrocarbon odor		
14-16'		35 ppm 70 ppm 33 ppm		Light black, fine-coarse SAND, loose, wet, hydrocarbon odor		
16-18'		91 ppm 50 ppm 20 ppm		Same as above, medium dense		
18-20'		26 ppm 8.0 ppm		Light black, fine-medium SAND, w/trace fine rounded gravel, wet, medium dense hydrocarbon odor		
20-22'		4.8 ppm 2.0 ppm		Light black to black, fine-coarse SAND, w/some rounded gravel and shells, hydrocarbon odor		
22-24'		2.5 ppm 0.5 ppm		Black, fine-coarse SAND, w/rounded gravel and shells, slight hydrocarbon odor		
24-26'		1.7 ppm 0.3 ppm 3.2 ppm 0.3 ppm 0.3 ppm		Light black, fine SAND, w/trace of well rounded gravel and shells		
26-28'		0.3 ppm 0.5 ppm		Light black to dark grey, fine SAND, dense, wet		
28-30'		0.1 ppm		Dark grey, fine-medium SAND, dense, wet		

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-10I
Location:	Date(s): 02/22/00 - 02/22/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
		30-32'	0.0 ppm	Dark gray, fine-medium SAND, dense, wet, trace rounded gravel		
		32-34'	0.0 ppm	Gray, fine to medium SAND, dense, trace of shells, wet		
		34-36'	0.0 ppm	Same as above, w/trace of coarse sand and rounded pebbles, no shells		
5		36-38'	0.0 ppm	Gray, fine-medium SAND, dense, wet		
		38-40'	0.0 ppm	Same as above		
4		40-42'	0.0 ppm	Same as above		
		42-44'	0.0 ppm	Same as above		
4		44-46'	0.0 ppm	Same as above		
				Base of Boring - 48'		
9						
5						
4						
6						



Site Id: RPMW-11D

Date(s): 03/02/00 - 03/02/00

Datum: Mean Sea Level

Elevation: 4.53'

Measuring Point: 9.57'

Completed Depth: 77.00'

Total Depth: 78.00'

Location: Rackaway Park - offsite

Purpose: Domestic Well

Logged By: Jeff Diamond

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delta Well & Pump

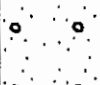
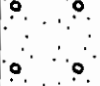
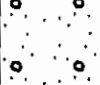
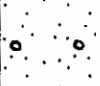
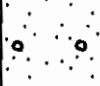
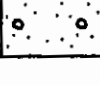
Screens:

type: Slotted size: 0.010in dia: 2.00in fm: 5.00' to: 15.00'
 type: Slotted size: 0.010in dia: 2.00in fm: 35.00' to: 45.00'
 type: Slotted size: 0.010in dia: 2.00in fm: 65.00' to: 75.00'

Remarks: Geologic data derived from boring RPSB-02A
 See log RPSB-02A for recovery/sample details

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
5			0.0 ppm	Brown-tan, fine sandy FILL, dry, med dense		
10			33.1 ppm	Black, fine sandy FILL, tar stains, naphtha odor, wet, loose		
15			33.1 ppm	Same as above		
20			50.3 ppm	Black, fine sandy FILL, naphtha odor, tar stained, clinker, moist, dense		
25			13.7 ppm	Same as above		

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-11D
Location: Rackaway Park - offsite	Date(s): 03/02/00 - 03/02/00
Purpose: Domestic Well	Total Depth: 78.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
5			3.5 ppm	Gray, medium SAND, w/shell fragments, tar staining, naphtha odor, moist, dense		
10			19.2 ppm	Gray, med-fine SAND, naphtha odor, moist, loose		
15			55.0 ppm	Same as above		
20			34.7 ppm	Same as above		
25			12.5 ppm	Same as above		
30			0.0 ppm	Gray, med-fine SAND, wet, w/shell fragments		
35						
40						
45						
50						
55						
60						
65						
70						
75						
80						
85						
90						
95						



Site Id: RPMW-12D2

Date(s): 03/13/00 - 03/13/00

Datum: Mean Sea Level

Elevation: 4.77'

Measuring Point: 12.36'

Completed Depth: 107.00'

Total Depth: 108.00'

Screens:

type: Slotted	size: 0.020in	dia: 2.00in	fm: 5.00'	to: 15.00'
type: Slotted	size: 0.020in	dia: 2.00in	fm: 35.00'	to: 45.00'
type: Slotted	size: 0.010in	dia: 2.00in	fm: 65.00'	to: 75.00'
type: Slotted	size: 0.010in	dia: 2.00in	fm: 95.00'	to: 105.00'

Remarks: Composite geotech sample collected from 94-106'.
Geologic/sample/recovery data from boring
RPSB-41 (0-47') and RPMW-12D2 (54-108').

Location: Rockaway Park

Purpose: Monitoring Well, Deep

Logged By: Jeff Diamond

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delto Well & Pump

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
				FILL, concrete		
		0.0 ppm		Grayish-brown, coarse-med SAND w/some fine GRAVEL & coal tar		
		0.0 ppm		Grayish-yellow, med-fine SAND w/coal tar fragments		
5		35.2 ppm		Gray-yellow/gray-brown, med-fine/med-coarse SAND, w/coal tar frags, slight odor		
		83.4 ppm		Yellowish-gray/dark gray, fine-med SAND, little silt, odor		
		113 ppm		Black, coarse-med SAND, odor, sheen & staining		
		132 ppm		Med dark gray, med-coarse SAND, staining & odor		
		215 ppm		Grayish-black, med-coarse SAND, trace med rounded GRAVEL, odor, staining		
10		2000+ ppm		Med drk gray/med lt. gray, med-coarse, micaceous SAND, odor, staining		
		1038 ppm		Med light gray, coarse-v.coarse SAND w/some mica, light staining, sheen & odor		
		94.6 ppm		thin layer of heavy staining at bottom of spoon		
		136 ppm		Med gray/gray-blk, coarse-v.coarse SAND, heavy staining, odor, sheen, f.GRAVEL		
		1588 ppm		Lt. med gray, coarse-med SAND w/fine-coarse GRAVEL, some heavy staining, odor		
15		2000+ ppm		Dark med gray, coarse-med SAND, micaceous, staining, odor, sheen		
		2000+ ppm		Med gray, coarse-v.coarse SAND, some f.GRAVEL, mica, lt. staining, odor, sheen		
		115 ppm		Grayish-black, coarse-v.coarse SAND, some mica, slight sheen & odor		
		231 ppm		Gray-black, coarse-v.coarse, micaceous SAND, w/fine-coarse GRAVEL, odor, sheen		
20		29.2 ppm		Dark med gray, coarse-v.coarse SAND w/fine-coarse GRAVEL, shell fragments, odor, heavy staining & sheen		
		38.1 ppm		Same as above		
		2000+ ppm		Med gray, coarse-v.coarse, micaceous SAND, odor & sheen		
		1529 ppm		Gray-black, v.coarse-med SAND w/coarse GRAVEL, hvy stains, product, odor, sheen		
25		2000+ ppm		Med light gray, coarse-med, micaceous SAND, odor & sheen		
		900 ppm		Same as above, w/shell fragments		
		2000+ ppm		Med lt. gray, coarse-v.coarse SAND w/shell frags, fine-coarse GRAVEL, silt, odor		
		245 ppm		Same as above, w/shells & sheen		
		190 ppm				
		259 ppm				
		15.7 ppm				
		133 ppm				
		16.4 ppm				
		24.8 ppm				

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-12D2
Location: Rockaway Park	Date(s): 03/13/00 - 03/13/00
Purpose: Monitoring Well, Deep	Total Depth: 108.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
			215 ppm 17.6 ppm	Med gray, coarse-med, micaceous SAND, slight odor Same as above, w/shell fragments & some fine-coarse GRAVEL		
			117 ppm 13.0 ppm 17.9 ppm	Same as above		
3			636 ppm 515 ppm	Same as above, w/sheen		
			89.3 ppm 0.0 ppm	Med gray, med-coarse, micaceous SAND		
4			0.0 ppm	Same as above, some shell fragments		
5			0.0 ppm	Same as above		
6						
7						
8		54-56'	32.9 ppm 2.4 ppm	Medium gray, medium SAND, w/some mica, fine gravel and shell fragments, sheen, staining and odor at top of sample		
9		59-61'	27.4 ppm 0.4 ppm 0.0 ppm	Medium gray, medium-very coarse SAND, w/shell fragments, fine gravel, some mica, slight sheen at top of sample		
10		64-66'	1.3 ppm 0.0 ppm 0.0 ppm	(64-64.3') Med. gray, medium, micaceous SAND, w/some shell fragments, trace of fine gravel (64.3-65.3') Medium dark gray to olive gray, fine, micaceous SAND		
11		69-71'	0.0 ppm	Olive gray, fine to medium, micaceous SAND		

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-12D2
Location: Rockaway Park	Date(s): 03/13/00 - 03/13/00
Purpose: Monitoring Well, Deep	Total Depth: 108.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
74-76'		74-76'	1.1 ppm 0.0 ppm 0.0 ppm	Olive gray, fine-medium, micaceous SAND		
79-81'		79-81'	0.0 ppm	Same as above Dark yellowish brown, medium to coarse, micaceous SAND		
84-86'		84-86'	3.4 ppm 0.3 ppm 0.4 ppm	Same as above		
89-91'		89-91'	1.0 ppm 0.3 ppm 0.2 ppm	Same as above		
94-96'		94-96'	5.0 ppm 0.7 ppm 0.4 ppm	Same as above Olive gray, fine, micaceous, silty SAND		
99-101'		99-101'	3.1 ppm 2.1 ppm 1.9 ppm	Dark yellowish brown, medium, micaceous SAND Olive gray, fine, micaceous, silty SAND		
104-106'		104-106'	0.3 ppm 0.9 ppm 1.3 ppm	Dark yellowish brown to light olive gray, medium-fine, micaceous SAND Olive gray, fine, micaceous, silty SAND Light olive gray, medium to coarse, micaceous SAND		
				Base of Boring - 108'		



Total Depth: 108.00'

Contractor: Delta Well & Pump

type: Slotted	size: 0.020in	dia: 2.00in	fm: 5.00'	to: 15.00'
type: Slotted	size: 0.020in	dia: 2.00in	fm: 35.00'	to: 45.00'
type: Slotted	size: 0.020in	dia: 2.00in	fm: 65.00'	to: 75.00'
type: Slotted	size: 0.010in	dia: 2.00in	fm: 95.00'	to: 105.00'

Remarks: Composite geotechnical soil samples collected from 94-96', 99-101', and 104-106'. Geo/sample data from log for boring RPSB-49, 0-52 ft.

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
4.7			4.7 ppm	Dusky brown, med-v.coarse, sandy TOPSOIL, grass, roots		
3.2			3.2 ppm	Grayish-brown, med-v.coarse, sandy FILL, some SILT		
3.7			3.7 ppm	Grayish-brown, med-v.coarse, sandy FILL, w/chunks of coal tar		
0.9			0.9 ppm	Yellow-bm, coarse-v.coarse, sandy FILL, fine-coarse gravel to red-brown silty clay		
0.0			0.0 ppm	Moderate reddish-brown, silty clayey FILL, w/v.coarse gravel, wet		
5.2			5.2 ppm	Black, med-fine, sandy FILL, w/some mica, odor, staining		
2.1			2.1 ppm	Grayish-brown, coarse-med, sandy FILL, staining, odor, slight sheen		
15.8			15.8 ppm	Moderate brown, silty clayey FILL, w/black med-fine sand, brick fragments		
20.0			20.0 ppm	Grayish-black, coarse SAND, odor, sheen, saturated w/product		
15.0			15.0 ppm	Dark gray, med-coarse SAND, odor, sheen, light staining, coarse GRAVEL		
17.7			17.7 ppm			
20.0			20.0 ppm			
21.7			21.7 ppm			
29.6			29.6 ppm	Dark gray, med-v.coarse SAND, odor		
45.1			45.1 ppm			
20.7			20.7 ppm	Dark gray, coarse-v.coarse SAND w/shell fragments, some mica, fine-coarse GRAVEL		
24.9			24.9 ppm	light staining, odor, sheen		
20.8			20.8 ppm			

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-13D2
Location: Rockaway	Date(s): 03/09/00 - 03/09/00
Purpose: Monitoring Well, Deep	Total Depth: 108.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
				No recovery (30'-32')		
3			387 ppm	Medium gray, medium-fine, micaceous SAND, trace coarse GRAVEL, odor, staining		
8			8.4 ppm 9.7 ppm	Medium gray, medium-fine SAND		
6			1.5 ppm 2.4 ppm	Medium gray-medium light gray, medium-coarse, micaceous SAND		
9			0.0 ppm 5.5 ppm	Same as above, medium gray		
5		54-56'	45.1 ppm 40.6 ppm	Dark gray, medium SAND, loose, odor, sheen, staining		
8		59-61'	23.1 ppm 23.7 ppm 43.4 ppm 26.4 ppm	Dark gray, medium-coarse SAND, loose w/some mica, staining, sheen, odor		
6		64-66'	17.8 ppm 36.1 ppm 37.1 ppm 39.4 ppm	Medium drk gray, medium micaceous SAND, sheen, slight staining, odor		
		69-71'	11.2 ppm 17.4 ppm	Med to med-dark gray, med-coarse, micaceous SAND, loose, sheen, odor		

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-13D2
Location: Rockaway	Date(s): 03/09/00 - 03/09/00
Purpose: Monitoring Well, Deep	Total Depth: 108.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
			21.6 ppm	Med to med-dark gray, med-coarse, micaceous SAND, loose, sheen, odor		
74-76'			9.1 ppm 8.0 ppm 17.5 ppm 26.2 ppm	Medium gray-dk gray, medium-coarse, micaceous SAND, loose, sheen, odor		
79-81'			6.3 ppm 10 ppm 10 ppm	Med gray, med-coarse, micaceous SAND, med dense, slight sheen and odor Brownish gray, fine, micaceous SAND, slight sheen and odor		
84-86'			99.9 ppm 12.6 ppm 6.2 ppm	Dark yellowish brown, fine, micaceous SAND, w/trace silt, slight odor, sheen, zone of product-saturated sand at top of sampler		
89-91'			355.5 ppm	Med and dk gray, med-fine micaceous SAND, product saturated, odor, sheen		
94-96'			8.3 ppm 13.3 ppm 1.4 ppm	Med dk gray, med-fine SAND, product saturated, some mica, odor, sheen Grayish brown, fine, silty, micaceous SAND		
99-101'			12.3 ppm 0.0 ppm 0.0 ppm	Pale and dark yellowish brown, medium-coarse SAND, w/some mica		
104-106'			70.7 ppm 10.3 ppm 7.9 ppm	Dark yellowish brown, medium-coarse, micaceous SAND		
				Base of Boring - 108'		



**Dvirka
and
Bartilucci**
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RPMW-14D

Date(s): 03/13/00 - 03/13/00

Datum: Mean Sea Level

Elevation: 3.65'

Measuring Point: 0.00'

Completed Depth: 78.00'

Total Depth: 78.00'

Screens:

type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00'
type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'
type: Slotted size: 0.020in dia: 2.00in fm: 66.00' to: 76.00'

Remarks: Geologic material/sample/recovery data derived
from boring RPSB-52

Location: Rockaway

Purpose: Monitoring Well, Deep

Logged By:

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 6.00in

Contractor: Delta Well & Pump

Material Description

Graphic Log

Monitoring Well
Screen Zones

Depth (ft)

Recovery

Sample Interval

Vapor

No recovery (2-4')

No recovery (4-6')

700 ppm
600 ppm
800 ppm
1500 ppm

Dark gray, fine-coarse SAND, loose, wet, heavy hydrocarbon odor

110 ppm
50.0 ppm
25.0 ppm

Dark gray-black, fine SAND, loose, wet, heavy hydrocarbon odor

30.0 ppm
85.0 ppm
75.0 ppm
15.0 ppm

Black, fine-coarse SAND, loose, wet, heavy hydrocarbon odor

20.0 ppm
6.5 ppm
15.0 ppm

Black, fine-med SAND, loose, wet, hydrocarbon odor

0.0 ppm

Grayish-black, fine-med SAND, med dense, wet

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-14D
Location: Rockaway	Date(s): 03/13/00 - 03/13/00
Purpose: Monitoring Well, Deep	Total Depth: 78.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
			0.0 ppm 1.4 ppm	Gray, fine, micaceous SAND, med dense, wet		
3			0.0 ppm	Same as above		
4				No recovery (40-42')		
5			0.0 ppm	Gray, fine SAND, med dense, wet		
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						
69						
70						
71						
72						
73						
74						
75						
76						
77						
78						

Site Id: RPMW-14D2



G&E Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/19/02

Date Completed: 08/20/02

Remarks:

Ground Elevation: 9.09'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Vis. Signs of Contamination	Elevation (ft.)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.				
0-7		50			0'-1' Concrete pad, gravel				MP. EL. 0.00
			10.7 ppm		1'-7' Black, MEDIUM to COARSE SAND, some fine sand, little small gravel, no odors or visible impacts				
7-17		100			7'-10' Black, MEDIUM to COARSE SAND, some fine sand, little small gravel, no odors or visible impacts				
			853 ppm	10	10'-14' Black to brown, FINE SAND, wet loose, non-cohesive, bands of light brown and black stained soil, moderate fuel odor.			0	
			578 ppm		14'-17' Dark gray, FINE SAND, wet loose, non-cohesive, faint naphthalene odor, no visual contamination.				

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-14D2



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/19/02

Date Completed: 08/20/02

Ground Elevation: 9.09'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.				
17-27		95	2.7 ppm	17-27	Dark grey, FINE TO MEDIUM SAND, trace shell fragments, wet, loose, non-cohesive, 2' band of shell fragments, medium to coarse sand, and small gravel at 23'			-10	
27-37		93	2.0 ppm	27-37	Dark grey, FINE SAND, trace medium sand, trace shell fragments, wet, loose, non-cohesive, no odors. 3' band of shell fragments, medium sand and small gravel at 29', no odors. 1' band of brown organic material at 31', strong organic odor, no visual impacts 27-37			-20	

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-14D2



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/19/02

Date Completed: 08/20/02

Ground Elevation: 9.09'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
37-47	93	2.1 ppm		37'-47'	Grey, FINE SAND, wet, loose, non-cohesive, no odors, or visual impacts.			-30	

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-14D2



G&E Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/19/02

Date Completed: 08/20/02

Ground Elevation: 9.09'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
47-57	87	6.6 ppm		47-57	Grey, FINE SAND, wet, loose, non-cohesive, no odors, or visual impacts.				
57-67	100	2.8 ppm		57-67	Grey, FINE SAND, trace medium sand, trace shell fragments, wet, loose, non-cohesive. 12" band of medium sand, some shell fragments, trace coarse sand at 65.6-66.6'. No odors or visual impacts.				

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-14D2



GZI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/19/02

Date Completed: 08/20/02

Ground Elevation: 9.09'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
67-77	90	6.6 ppm		67-77'	Grey, FINE SAND, wet, loose, non-cohesive, no visual impacts or odors.			-60	

Legend: Physical
Observations

None

Blebs, Globs, Lenses, Grain Coating, Sheens

Stain

Tar Saturated

Solid Tar

Site Id: RPMW-14D2



GEL Corporation, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/19/02

Date Completed: 08/20/02

Ground Elevation: 9.09'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PD	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
77-87		100	0.3 ppm	77-87	Brown, FINE SAND, trace medium sand, wet, loose, non-cohesive, thin veins of darker brown, medium sand, running vertically from 76-82, no odors or visual contamination.			-70	
87-97		95	0.4 ppm	87-97	Reddish brown, FINE SAND, wet, loose, non-cohesive, no odors or visual impacts.			-80	

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-14D2



GEJ Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/19/02

Date Completed: 08/20/02

Ground Elevation: 9.09'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
97-107		100	0.6 ppm		97'-107' Reddish brown, FINE SAND, wet, loose, non-cohesive, no odors or visual impacts			-90	

Legend: Physical

Observations



None



Blebs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-14D2



GSI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/19/02

Date Completed: 08/20/02

Ground Elevation: 9.09'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 107.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
				110	END OF BORING AT 107'			-100	
								-110	

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar



Site Id: RPMW-151

Date(s): 02/16/00 - 02/16/00

Datum: Mean Sea Level

Elevation: 2.26'

Measuring Point: 9.74'

Completed Depth: 47.00'

Total Depth: 48.00'

Screens:

type: 2.00' 12.00'
type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks: Geotech samples collected from 3-5', 39-41', 35-37', and 43-45'. Screen interval given for pre-existing shallow well PZ-03.

Location: Rockaway Park

Purpose: Monitoring Well, Intermediate

Logged By: Jeff Diamond

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 8.25in

Contractor: LAWES

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
5			0.1 ppm	Dark yellow orange-pale yellow brown, moderate-coarse SAND, loose, dry (drill cuttings)		
5-7'			0.0 ppm 16.2 ppm 28.4 ppm	Mod. yellow br-pale yellow br, med. SAND, w/some mica, loose, wet, odor Grayish bk, med-fine SAND, loose, sheen, odor, oily appearance		
7-9'			340.9 ppm 1999 ppm 614 ppm	Medium dark gray, med-coarse SAND, wet, loose, sheen, xylene odor		
9-11'			1127 ppm 1999 ppm 1999 ppm 749 ppm 865 ppm 186 ppm 194 ppm	Med. dark gray, med. SAND, loose, sheen, light staining, xylene odor Grayish orange-pale yellow br, med-c. SAND, loose, w/tr. v.coarse sand, mica, sheen, strong xylene odor		
11-13'				Medium light gray, medium SAND, loose, w/some mica, odor		
13-15'			760 ppm 380.3 ppm 1999 ppm 121.3 ppm 196.5 ppm 223.9 ppm 378.4 ppm	Medium-medium dark gray, c.-med. SAND, w/some mica, and very coarse sand grading to coarse SAND, w/gravel, loose, odor		
15-17'				Medium dark gray, med-coarse SAND, w/some mica, sheen, odor, loose		
17-19'			67.5 ppm 8.4 ppm 0.7 ppm	Dark gray, v.coarse SAND, fine gravel, w/pebbles, medium dense		
19-21'			20.4 ppm 10.8 ppm 0 ppm	Dark gray, c.-v.c. SAND, w/pebbles, f.gravel, shell fragments Medium Dark Gray, med.-c. SAND, w/some mica, medium dense		
21-23'			4.2 ppm 6.6 ppm 8.2 ppm	Dark gray-medium dark gray, med.-c. SAND, w/shell fragments, fine-coarse gravel, medium dense		
23-25'			10.5 ppm 0.0 ppm 3.50 ppm	Medium dark gray, medium-coarse SAND, w/fine-coarse gravel and shells, loose		
25-27'			2.5 ppm 9.4 ppm 34.8 ppm 13.6 ppm 7.0 ppm 7.8 ppm 0.0 ppm	Medium dark gray, medium-coarse SAND, w/fine-coarse gravel and some shell fragments, loose Medium light gray, medium SAND, w/some mica, loose		
27-29'						
29-31'			0.4 ppm 0.0 ppm	Medium gray, medium SAND, w/some mico, medium dense		

Consulting Firm: Dvirko & Bartilucci	Site Id: RPMW-151
Location: Rockaway Park	Date(s): 02/16/00 - 02/16/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
31-33'		1.9 ppm 0.9 ppm 0.7 ppm		Medium gray, medium SAND, medium dense, w/mica, and a thin lense of dark gray, sandy, micaceous clay		
33-35'		1.4 ppm 0.0 ppm 1.0 ppm		Medium gray, medium, micaceous SAND, medium dense		
35-37'		0.0 ppm		Same as above		
37-39'		4.7 ppm 3.4 ppm 2.7 ppm 4.6 ppm 2.0 ppm		Same as above		
39-41'		46.4 ppm 109.3 ppm		Same as above		
41-43'		25.8 ppm 2.4 ppm 1.8 ppm		Same as above, dark gray		
43-45'		0.0 ppm		Same as above		
				Base of Boring - 48'		

Site Id: RPMW-15D



CEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/20/02

Date Completed: 08/20/02

Remarks:

Ground Elevation: 7.13'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

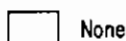
Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Vis. Signs of Contamination	Elevation (ft.)	Well Construction	
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.					
0-7		48		0'-2'	Gravel surface, sand and gravel subgravel. Black, medium SAND and small gravel, dry, loose, non-cohesive fill material, no odors or visual impacts.					
				2'-6'	Orange, FINE TO MEDIUM SAND, trace siltier, trace small gravel, dry, loose, non-cohesive, no odors or visual evidence of impacts.					
			2.8 ppm	6'-7'	Brown to black, FINE SAND, dry, loose, non-cohesive, no odors or visual impacts					
7-17		93		7'-9'	Brown to black, FINE SAND, dry, loose, non-cohesive, faint hydrocarbon odor, no visual impacts.			0		
			9999 ppm	9'-9'6"	Black stained, FINE SAND, strong hydrocarbon odor, wet, loose, non-cohesive.					
			9999 ppm	9'6"-10'	Light grey, FINE SAND, wet, loose, non-cohesive, strong gasoline odor, thin 1/4" band of orange/brown product coated grains.					
			9999 ppm	10'-13'	Light grey, FINE SAND, wet, loose, non-cohesive, strong gasoline odor, light tan staining throughout sample.					
			4463 ppm	13'-16'6"	Light grey, FINE SAND, wet, loose, non-cohesive, faint to moderate gasoline odor, no visual impacts.					

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-15D



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/20/02

Date Completed: 08/20/02

Ground Elevation: 7.13'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PH	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
17-27		100	900 ppm 25.9 ppm	16'6"-17' 17'-21'	Black, MEDIUM SAND, little coarse sand some small gravel, wet loose, non-cohesive, strong naphthalene odor, sheen on soil. Black, MEDIUM SAND, some coarse sand, some small gravel, some medium to large shell fragments, wet, loose, non-cohesive, faint naphthalene odor, no visible impacts.			-10	
			13.2 ppm	20					
				21'-27'	Black, FINE SAND, wet loose non-cohesive, faint to moderate naphthalene odor, no visual impacts.				
27-37		100	0.5 ppm	27'-37'	Dark grey, FINE SAND, wet, loose, non-cohesive, no odors or visual impacts, 6" band of black fine sand at 36'-36'6".			-20	

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-15D



GBI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/20/02

Date Completed: 08/20/02

Ground Elevation: 7.13'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

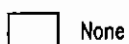
Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PIU	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
37-47	90	0.0 ppm		37-47	Dark grey, FINE SAND, trace medium sand, trace shell fragments, wet, loose, non-cohesive, no odors or visual impacts.			-30	

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-15D



G&E Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/20/02

Date Completed: 08/20/02

Ground Elevation: 7.13'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.				
47-57		95	0.1 ppm	47-57'	Dark grey, FINE SAND, trace medium sand, trace shell fragments, wet, loose, non-cohesive, faint naphthalene odor, no visual impacts.			-40	
57-67		90	0.3 ppm	57-67'	Dark to light grey, FINE TO MEDIUM SAND, some small gravel, little shell fragments, wet, loose, non-cohesive, no odors, or visible contamination.			-50	

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-15D



GHI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/20/02

Date Completed: 08/20/02

Ground Elevation: 7.13'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

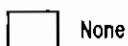
Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
67-77	90	0.1 ppm		67-77	Light grey, FINE TO MEDIUM SAND, trace shell fragments, trace small gravel, wet, loose, non-cohesive, no odors or visual contamination.			-60	

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Site Id: RPMW-15D



ProSonic, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/20/02

Date Completed: 08/20/02

Ground Elevation: 7.13'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 77.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
				80	END OF BORING AT 77.			-70	
								-80	

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar



Site Id: RPMW-16I

Date(s): 02/17/00 - 02/17/00

Datum: Mean Sea Level

Elevation: 2.80'

Measuring Point: 7.86'

Completed Depth: 47.00'

Total Depth: 48.00'

Location: Rockaway Park - offsite

Purpose: Monitoring Well, Intermediate

Logged By: Jeff Diamond

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: LAWES

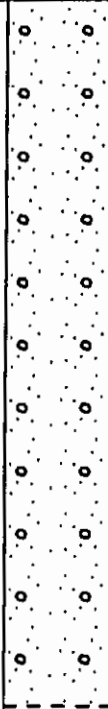
Screens:

type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00'
type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks: Geologic data from log for boring RPSB-58

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
5			0.0 ppm	Pale-moderate yellowish-brown, med-coarse SAND w/trace fine GRAVEL, loose, dry		
5			0.0 ppm	Moderate brown, med-coarse SAND, dry, w/trace fine GRAVEL Yellowish-brown/Brownish gray to light gray, med-coarse SAND, trace black sand on top, wet		
11			0.0 ppm	Pale yellowish-brown, med-coarse SAND, loose, wet, w/some fine GRAVEL & mica Med light gray, med-coarse SAND, loose, w/some mica & coarse GRAVEL		
5			0.0 ppm 0.4 ppm 0.5 ppm	Grayish-brown, coarse-med SAND, wet, loose, w/little mica, fine GRAVEL Med light gray, med-coarse SAND, wet, loose, w/little mica, trace fine GRAVEL		
3			0.0 ppm	Med light gray, med-coarse SAND, med dense, wet, w/coarse GRAVEL Same as above, w/fine GRAVEL, shell fragments		
5			0.0 ppm	Pale yellowish-brown, med-coarse SAND, med dense, wet, w/some mica, little shell fragments		

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-16I
Location: Rockaway Park - offsite	Date(s): 02/17/00 - 02/17/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
			0.0 ppm	Med gray, med SAND, med dense, w/some mica		
3			0.0 ppm	Same as above		
4			0.0 ppm	Same as above		
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-17D
Location: Rockaway Park - offsite	Date(s): 02/24/00 - 02/24/00
Purpose: Monitoring Well, Deep	Total Depth: 78.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
			30.0 ppm 50.0 ppm	Gray, fine SAND, wet, med dense, slight solvent odor		
5			48.2 ppm 50.1 ppm	Gray, fine SAND, dense, wet, no odor		
8			7.3 ppm 11.9 ppm	Same as above		
6			15.5 ppm 13.2 ppm	Gray, fine SAND, wet, med dense, w/shells		
9			17.5 ppm	Gray, fine-med SAND, wet, med dense		
5			8.7 ppm 9.1 ppm	Same as above		
8						
6						



Site Id: RPMW-17D

Date(s): 02/24/00 - 02/24/00

Datum: Mean Sea Level

Elevation: 2.46'

Measuring Point: 7.61'

Completed Depth: 78.00'

Total Depth: 78.00'

Screens:

type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00'
 type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'
 type: Slotted size: 0.020in dia: 2.00in fm: 65.00' to: 75.00'

Remarks: Geologic/sample data derived from lag for boring RPSB-61

Location: Rockaway Park - offsite

Purpose: Monitoring Well, Deep

Logged By: J. Schafer

Drilling Method: 4.25" I.D. Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: LAWES

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
5			20.5 ppm 25.7 ppm 31.3 ppm	Tan-gray, fine-med SAND, wet at 6', loose, sewage odor		
10			200 ppm 2000+ ppm 2000+ ppm	Gray, fine-med SAND, med dense, wet, heavy solvent odor		
15			60.0 ppm 150 ppm 70.0 ppm	Dark gray-black, fine-coarse SAND, w/some GRAVEL & shells, solvent odor		
20			35.0 ppm 19.0 ppm 27.0 ppm	Same as above		
25			11.7 ppm 28.5 ppm 24.9 ppm	Gray, fine-coarse SAND & GRAVEL, solvent odor		

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/21/02

Date Completed: 08/22/02

Remarks: No Material Description Due to Proximity 8
to RPMW-180.

Ground Elevation: 9.45'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 47.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description		Lithology	Vis. Signs of Contamination		Elevation (ft.)	Well Construction	
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.							
					NO MATERIAL DESCRIPTION DUE TO PROXIMITY OF RPMW-18D							

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-17D
Location: Rockaway Park - offsite	Date(s): 02/24/00 - 02/24/00
Purpose: Monitoring Well, Deep	Total Depth: 78.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
10 20 30 40 50 60 70 80 90 100				Base of well boring - 78 ft.		

Site Id: RPMW-181



GHI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks: No Material Description Due to Proximity 8 to RPMW-18D.

Date Started: 08/21/02

Date Completed: 08/22/02

Ground Elevation: 9.45'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 47.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)	Well Construction
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.				
				40				-30	

Legend: Physical

Observations



None



Blebs, Glabs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-181



ProSonic, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks: No Material Description Due to Proximity 8 to RPMW-180.

Date Started: 08/21/02

Date Completed: 08/22/02

Ground Elevation: 9.45'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 47.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PTD	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
				20				-10	
								-20	

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-18D



GMI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 08/21/02

Date Completed: 08/21/02

Remarks:

Ground Elevation: 9.35'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

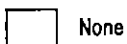
Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Vis. Signs of Contamination	Elevation (ft.)	Well Construction	
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.					
0-7		0			0'-7' No recovery, hand augered, gravel, ash, clinker, MED SAND, no odors or visual impacts.					
7-17		35	3.0 ppm		7'-9' Dark brown, MED SAND, trace coarse sand, some small gravel, dry, loose, non-cohesive, no odors or visual impacts.					
				10	9'-15' Light tan, FINE SAND, trace small gravel, orange iron staining at 11'-12', and light orange stained 1/4" bands at 12'-15'.			0		

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-181



GEL Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks: No Material Description Due to Proximity 8 to RPMW-18D.

Date Started: 08/21/02

Date Completed: 08/22/02

Ground Elevation: 9.45'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 47.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By:

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
				50				-40	
								-50	

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-18D



G&E Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/21/02

Date Completed: 08/21/02

Ground Elevation: 9.35'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
			900 ppm		31'-32' band was heavily tar saturated, tar was brown and heavily viscous, bottom foot of bag was full of water and tar.				
			1446 ppm		32'-37' Dark grey, Fine SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive. 34-35' interval had 1/2" thick tar saturated band in a one foot section of med SAND, some shell fragments, some small gravel, mod tar odor.				
37-47	100	8.1 ppm			37'-47' Light grey, FINE SAND, wet, loose, non-cohesive, strong sulfur odor, no visual impacts			-30	
				40					

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-18D



F&E Consulting, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/21/02

Date Completed: 08/21/02

Ground Elevation: 9.35'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
17-27	90	989 ppm		15'-17'	Black, FINE SAND, wet loose, non-cohesive, slight fuel oil odor, no visual contamination.				
				17'-22'	Dark grey, FINE SAND, trace med sand, trace shell fragments, wet, loose, non-cohesive, mod sheen, faint fuel oil odor, faint naphthalene odor. Thin 1/2" bands of brown stained med SAND and small gravel with some shell fragments, bands have mod naphthalene odor.			-10	
			90.9 ppm	22'-27'	Dark grey, FINE SAND, wet, loose, non-cohesive, faint naphthalene odor, no visual impacts.				
27-37	95			27'-31'	Dark grey, FINE SAND, wet, loose, non-cohesive, patchy sheen and brown tar staining at 30'-31'.			-20	

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-18D



GFI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/21/02

Date Completed: 08/21/02

Ground Elevation: 9.35'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft.)	Well Construction
67-77	95	13.3 ppm			67'-77' Brown, FINE SAND, wet, loose, non-cohesive, mod sulfur odor and patchy sheen at 76-77'.				

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Site Id: RPMW-18D



ODI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/21/02

Date Completed: 08/21/02

Ground Elevation: 9.35'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
47-57	100			47-52'	As Above with strong sulfur odor. No visual impacts.				
			409 ppm	52-57'	As Above with 1" to 4" bands of tar saturated MED SAND, med tar odor, veins of tar stained sand running vertically through interval.			-40	
57-67	75		70.7 ppm	57-67'	Grey, FINE SAND to MED SAND, some shell fragments, little small gravel. Thin 1/4" bands of tar saturated material at 58' and 59'. Strong tar odor in bands.			-50	

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPMW-18D



JMI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Remarks:

Date Started: 08/21/02

Date Completed: 08/21/02

Ground Elevation: 9.35'

Datum: Mean Sea Level

Contractor: ProSonic, Inc.

Total Depth: 97.00'

Drilling Method: Sonic Drilling

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PD	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Lithology	Physical Observations	Elevation (ft)	Well Construction
77-87	80	173 ppm 12.7 ppm		80	77'-84' Dark gray to black, FINE SAND, wet, loose, non-cohesive, organic odor and patchy sheen from 81'-83'. Bands of 2" stained and saturated material alternating from 83'-84', mod tar odor, bands are med sand and small shell fragments.			-70	
87-97	100	45.5 ppm 6.1 ppm 2.7 ppm			84'-87' Brown, FINE SAND, wet, loose, non-cohesive, no visual impacts or odors.				
					87'-97' Brown, FINE SAND, wet, loose, non-cohesive, no odors or visual impacts.			-80	

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

BORING B-03

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/20/98
 DATE COMPLETED: 11/20/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 2.5 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL: FEET MSL
 WEATHER: 55° F, SUNNY AND HAZY, LIGHT WIND
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SPLIT SPOON SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	NONE	SLIGHT	MODERATE	STRONG		
Hand dug				SM: Silty sand with clinker and cinders. Brown to light brown at 3'.								0	
3-4	4,8	90	0	SP: Sand, fine to medium. Light reddish brown. Moist. Slight iron staining.									
4-6	3,3 3,4	75	0	SP: Sand, fine to medium. Light gray. Increasing moisture, wet at base. Slight iron staining. No odor.								5	
6-8	2,3 3,2	75	2	SP: Sand. Light gray/light brown. Wet. No stain. Slight sulfur/ septic odor.									
8-10	4,6 9,7	75	16 28	SP: Sand. Light gray. No stain. No odor. SP: Sand. Black, with sharp contrast to gray above. Stained. Slight naphthalene odor.								10	
10-12	2,7 16,11	70	115	SP: Sand, fine to medium. Dark gray, with lighter tone at base. Stained. Slight naphthalene/sulfur odor mixed.									
12-14	6,9 7,10	75	109	SP: Sand, as above. Gray with a lighter tone. No stain. Slight odor.									
14-16	1,3 12,10	55	210	SP: Sand. Dark gray. Black at base of sample. Dissolved staining. Slight to moderate naphthalene more than sulfur odor.								15	
16-18	5,7 9,12	40	79	SP: Sand as above, fine to medium with few coarse grains. Black. Stained. Slight to moderate naphthalene odor.									

BORING B-03

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/20/98
 DATE COMPLETED: 11/20/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 2.5 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL: FEET MSL
 WEATHER: 55° F, SUNNY AND HAZY, LIGHT WIND
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SPLIT SPOON SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEN	NONE	SLIGHT	MODERATE			
16-18	5,7 9,12		22	SP: Sand as above. Few shell fragments. Dark gray. Stained. Slight odor.								17	WELL MW-2
18-20	5,13 34,30	75		SM: Silty sand, fine to medium. Black, darker tone than above. Impermeable?									
20-22	11,18 18,20	50	54	SW: Sand, fine to coarse with shells. Gray. Slight odor.									
22-24	12,17 23,22	45		SW: Sand, fine to coarse with shell fragments. Slight stain. Slight naphthalene odor.								22	
24-26	13,25 20,32	25		SW: Sand as above. No stain. Very slight odor.									
				TD = 26 feet.									
				Interval sampled for laboratory analysis: 4'-6' and 12'-14'								27	
												32	

ATLANTIC

BORING B-04

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/20/98
 DATE COMPLETED: 11/20/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 50' F, PT. CLOUDY, LT. WINDY 5-10 MPH
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug				Clean sand.									0	
4-6	3,5 8,6	55	6	SW/GW: Sand and small gravel. Reddish brown. Moist. Iron staining. No odor. SW: Sand with gravel. Fine sand, small gravel stones. Light tan. No stain. No odor.									5	
6-8	1,1 2,3	100	10	SP: Sand with few shells. Light brown grading to dark gray. Wet. Slight staining. Slight odor.										
8-10	1,2 1,3	55	52	SW: Sand with cinders, ash and coal. Wet NAPL. Stained with black tar. Heavy staining. Strong odor. SW: Sand as above with cinders, ash, and clinker fragments. Wet with NAPL. Heavy staining. Strong odor.										
10-12	6,2 3,9	30	49	SP: Sand. Fine to medium. Stained with NAPL. Moderate odor. SP: Sand as above. Black. Watery, not NAPL - transition to dissolved phase. Stained with sheen on surfaces. Moderate odor.									10	
12-14	6,5 8,5	40	45	SW: Sand, fine to coarse. Gray, dissolved phase contamination. Stained, with no observed sheen. Moderate odor.										
14-16	9,7 9,12	45	8	SP: Sand, fine to medium. Gray. Stained. Slight odor. SP: Sand as above, with numerous shell fragments and trace of coarse grains. Stained. Slight odor.									15	

BORING B-04

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/20/98
 DATE COMPLETED: 11/20/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 50° F, PT. CLOUDY, LT. WINDY 5-10 MPH
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
16-18	8,13 23,17	45	8	SP: Sand as above. Fine to coarse with few shell fragments. Gray. Slight staining. Slight odor. SP: Sand, fine to medium, with no coarse grains. Slight stain and odor as above.									16	
18-20	4,15 24,25	65	13	SP: Sand, fine to medium. Gray to light gray. Slight stain and odor as above.										
20-22	18,20 13,13	45	6	SP: Sand as above, fine to medium. Bottom of sampler has larger sand grains and small gravel. Gray. Hard to determine between staining and gray mineralogy (transitioning to no stain). Slight odor.									21	
22-24	10,20 25,23	60	2	SW: Sand, fine to coarse with small gravel: rounded quartz and angular shell fragments. Light gray. No staining. Slight odor.										
24-26	6,17 28,23	25		SW: Sand as above with quartz stones and shell fragments. No stain. Very slight odor.										
				TD = 26 feet Interval sampled for laboratory analysis: 22'-24'									26	
													31	

ATLANTIC

BORING B-05

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/18/98
 DATE COMPLETED: 11/18/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 50° F, SUNNY, LT. WIND 5-10 MPH, N-NW
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.					ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG			
hand dug				SM: Silty sand. Dark Brown. No stain. No odor.										0	
				SP: Sand, fine to medium. Light tan.											
			0	SP: Sand, fine to medium. Tan. No stain. No odor.											
3-5	4,6 5,9	70		Iron staining with slight odor.											
			35	SW: Small gravel and cinders. Wet. Black staining. Moderate to strong diesel odor.										5	
5-7	3,4 4,6	55	197	SW: Sand and small gravel with cinders and ash. Black. Wet with tar/oil NAPL. Heavy staining. Strong odor.											
				SW: Sand and small gravel with clinker and ash. Black. Wet with tar/oil NAPL. Heavy staining. Strong diesel/tar odor.											
7-9	4,5 20,26	50	137	SP: Sand, fine to medium. Black. Stained. Strong odor.											
				SP: Sand. Black to dark gray. Wet. Stained/sheen. Diesel/tar odor.										10	
9-11	21,20 26,30	50	91	SP: Sand. Black to dark gray. Tar staining. Moderate to strong tar odor.											
			225	No recovery. Rock may have blocked shoe.											
13-15	30,14 26,20		0												
				SP: Sand, fine to medium with some coarse and small rounded gravel. Black staining. Tar odor.										15	
15-17	10,10 11,13	60	330												

BORING B-05

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/18/98
 DATE COMPLETED: 11/18/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

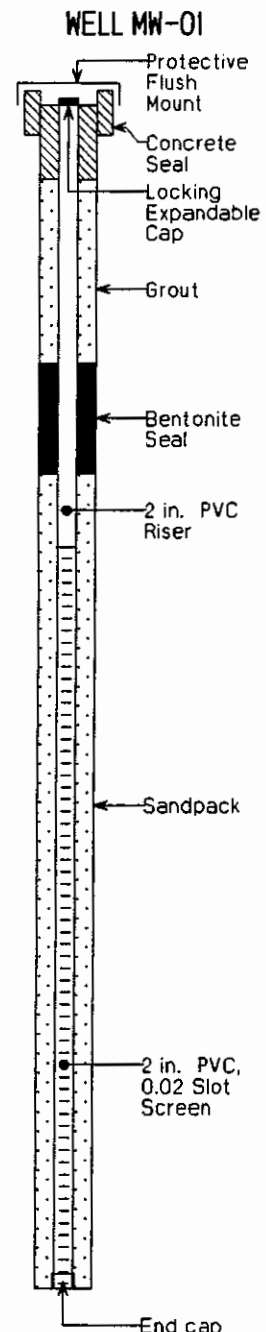
DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 50' F, SUNNY, LT. WIND 5-10 MPH, N-NW
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
17-19	10,11 13,22	80	571	SP: Sand. Black staining. Moderate tar odor.									17	
				SW: Sand, fine to coarse. Rounded quartz. Tar staining with no sheen on water. Moderate odor.										
19-21	14,18 26,22	75	48	SW: Sand, fine to coarse with small rounded gravel and quartz. Black staining, decreasing at base. Slight odor at base.										
21-23	14,18 26,32	40	28	SW: Sand, fine to coarse with few shell fragments. Black staining, with no sheen. Slight to moderate odor.									22	
			51	SP: Sand, fine to medium with some coarse grains. Dark gray to gray. Stained. Slight odor.										
23-25	4,5 15,18	65	28	SP: Sand, fine to medium. Gray to light gray. Slight stain. Slight odor.										
				TD = 25 feet										
				Interval sampled for laboratory analysis: 23'-25'									27	
													32	

BORING B-06

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/19/98
 DATE COMPLETED: 11/19/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 50° F, CLOUDY, LT. WIND
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SPLIT SPOON SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
hand dug				Clinker and gravel.									WELL MW-01 
3-5	2,4 4,5	80	0	SP: Sand, fine to medium with few coarse grains. Light tan. Moist. No stain. No odor.									
5-7	2,3 5,4	75	0	SP: Sand, as above. Light tan/brown. Numerous shell fragments 5.6-5.9'. Moist grading to wet at base. No stain. No odor.									
7-9	3,3 4,3	45	0	SP: Sand, fine to medium with few shell fragments. Light tan grading to light brown. No stain. No odor.									
9-11	2,3 2,2	70	2	SW: Sand with shell fragments. Light brown grading to gray. Slight stain. Septic odor. SP: Sand. Gray. Slight stain. Septic odor.									
11-13	5,4 3,4	70	0	SP: Sand, fine to medium grains with few shell fragments. Gray. No stain. Moderate septic or sulfur odor.									
13-15	3,7 17,19	65	5	SP: Sand as above. Dark gray. Staining (not MGP). Septic odor. SP: Sand, fine to medium grains. Light gray. No stain. Slight odor.									
15-17	10,9 19,12	35	7	SP: Sand as above, fine to medium with few coarse grains and a trace of small gravel. Light gray. No stain. No odor.									

ATLANTIC

BORING B-06

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/19/98
 DATE COMPLETED: 11/19/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 50° F, CLOUDY, LT. WIND
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SPLIT SPOON SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE			STRONG
17-19	15,17 11,22	55	0	SP: Sand as above. No stain. No odor.									17	
19-21	8,7 15,22	45	0	SP: Sand as above. No stain. No odor.										
21-23	7,9 10,22	30	0	SP: Sand as above. No stain. No odor.									22	
23-25	24,37 36,38		0	No recovery.										
				TD = 25 feet No sample collected.									27	
													32	

BORING B-07

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/19/98
 DATE COMPLETED: 11/19/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 45° F, CLOUDY, MOD. WIND, N
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.					ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG			
hand dug			18	Encountered dried tar material. Sticky, black with strong odor - coal tar.										0	
3-5	2,3 5,4	90	0	SP: Sand, fine to medium. Light brown and brown with some dark brown bands at 3.0'-3.3', 3.6' and 4.1'. Dry to moist. No stain. Slight odor.										5	
5-7	7,4 4,4	65	0	SP: Sand, fine to medium with few coarse grains. Light brown. Moist to wet at 6.0'. No stain. Slight to moderate septic odor.											
7-9	1,3 2,4	100	0	SP: Sand as above. Few shell fragments. Light tan/brown. Wet. No stain. Very slight tar and septic odor.											
9-11	2,1 1,2	70	2	SP: Sand as above, fine to medium. Light brown grading to gray at base. No stain. Slight tar and septic odor.										10	
11-13	1,4 6,8	55	12	SP: Sand as above. Light gray with dark gray zones grading to gray at base. Tar stains and odor.											
13-15	4,5 4,6	60	38	SP: Sand as above, fine to medium with few coarse grains. Light gray to gray. Slight stain. Slight tar odor.											
15-17	9,9 16,22	45	19	SP: Sand. Mineralogy appears to be slate or gray igneous stones, with some quartz. Light gray to gray. Slight stain. Slight tar and septic odor.										15	

BORING B-07

PROJECT: KEYSAN ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/19/98
 DATE COMPLETED: 11/19/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 45° F, CLOUDY, MOD. WIND, N
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
17-19	7,9 15,12	55	2	SP: Sand, fine to medium grains. Light gray. No stain. Very slight tar and septic odor.								17	
19-21	7,12 14,20	65	0	SP: Sand, as above, with few coarse grains and shell fragments. Light gray. No stain. Very slight odor.									
21-23	4,11 17,22	55	2	SP: Sand, as above. No stain. Very slight tar/naphthalene odor.								22	
23-25	10,17 20,22		1	SP: Sand, as above. Increased coarse grain content (10%). Few shell fragments. No stain. Very slight tar/septic odor.									
				TD = 25 feet SP: No samples collected.								27	
												32	

BORING B-08

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/23/98
 DATE COMPLETED: 11/23/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD:
 SAMPLING METHOD:
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 45° F, SUNNY, W-NW WIND 10-20 MPH
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
hand dug				Light brown fine to medium sand. No stain or odor.								0	
				Concrete gas holder tank base, 18" thick.									
				Hand dug soil beneath gas holder base. SP: Light brown sand, fine to medium. Moist. No stain. Strong solvent odor.									
				TD = 4.5 feet									
				Location not augered due to similarity of contamination observed at other locations beneath the gas holder base. No samples collected for laboratory analysis.								5	
												10	

ATLANTIC

BORING BH-11

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/23/98
 DATE COMPLETED: 11/23/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 45° F, SUNNY, W-NW WIND 10-20 MPH
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
hand dug				Rubble.									
3-5	8,6 4,5	65	100	SW/GW: Fill. Silty sand, with wood fragments, coal, and coke. Dark brown. Moist. Stained. Moderate odor.									
5-7	4,1 3,2	60		SP: Sand. Gray. Wet. Stained. Slight solvent and tar odor.									
			172	SM: Silty sand with organics, wood, coal. Stained. Tar/oil odor.									
7-9	3,2 2,3	15	72	SP: Sand, fine to medium. Mostly cave-in in sample. Dark gray. Wet. Stained. Solvent/tar odor.									
9-11	4,2 6,10	65	384	SP: Sand, fine to medium. Gray. No stain. Solvent odor.									
11-13	5,9 10,18	45	121	SP: Sand, fine to medium with some coarse grains. Dark gray. Some staining. Solvent/tar odor.									
13-15	8,16 23,16	50	55	SP: Sand as above. Dark gray. Slight staining. Slight to moderate solvent/tar odor.									
15-17	11,22 37,22	60	61	SP: Sand, fine to coarse. Dark gray. Slight stain. Moderate sulfur odor.									

ATLANTIC

BORING BH-11

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/23/98
 DATE COMPLETED: 11/23/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 45° F, SUNNY, W-NW WIND 10-20 MPH
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.						ODOR	LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
17-19	12,21 33,25	60	17	SP: Sand as above. Gray. No stain. Moderate sulfur odor.									17	
19-21	5,15 29,32	55	26	SP: Sand, fine to medium with some coarse grains and shell fragments. No stain. Sulfur or weathered tar odor.										
				TD = 21 feet Interval sampled for laboratory analysis: 13'-15'									22	
													27	
													32	

BORING B-12

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION

PROJECT NO: 98318-2003

LOCATION: ROCKAWAY BEACH, NEW YORK

DATE STARTED: 11/23/98

DATE COMPLETED: 11/23/98

DRILLING CONTRACTOR: FENLEY & NICOL

DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA

SAMPLING METHOD: 2 FOOT SPLIT SPOONS

GROUND ELEVATION: FEET MSL

WATER LEVEL:

WEATHER: 45° F, SUNNY, W-NW WIND 10-20 MPH

INSPECTOR: TOM STIEGEMEIER

CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	NONE	SLIGHT	MODERATE	STRONG		
hand dug				Concrete pad. Center of holder.								0	
				Hand dug soil below concrete. Strong solvent odor.									
3-5	2,4 10,18	85	601	SP: Sand, fine to medium. Light gray. Moist. Wet at 3.5'. No stain. However, brown stain on gloves handling sample. Oily texture to fluid. Strong odor.									
5-7	2,7 8,23	55	995	SP: Sand, fine to medium. Gray. Wet. No stain. Strong odor.								5	
7-9	4,10 14,20	85	768	SP: Sand as above. Gray to light brown. SW: Sand. Increasing coarse grain content. Dark gray. Less fluid in sample.									
9-11	9,18 24,24	80	793	SP: Sand, fine to medium with some coarse grains. Gray, grading to a darker gray at 10.0'. No stain. Strong odor.								10	
11-13	9,17 22,25	50	584	SP: Sand as above. Gray. No stain. Decreasing strong odor.									
13-15	29,44 26,33	60	330	SP: Sand, fine to medium, with few coarse grains. Dark gray. SP: Sand, with increased silt content. Color grades to black. Stained. Moderate solvent odor.									
15-17	5,19 33,28	85	237	SP: Sand, fine to medium. Gray. SW: Sand, fine to coarse with some shell fragments and few small round quartz gravel. (0.5" max.) Gray color from mineralogy. No staining. Moderate odor.								15	

ATLANTIC

BORING B-12

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/23/98
 DATE COMPLETED: 11/23/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 45° F, SUNNY, W-NW WIND 10-20 MPH
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, DRIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
17-19	9,26 34,30	65	65	SW: Sand as above. Fine to coarse with few shell fragments. Gray. No stain. Moderate to slight odor.									17	
19-21	12,25 30,30	70	105	SW: Sand as above. Fine to coarse, with few shell fragments. 2" layer of fine sand at base. No stain. Slight solvent odor.										
21-23	13,23 36,27	30	166	SW: Sand as above. Fine to coarse. 2" layer of fine sand at base, like previous sample. No stain. Slight odor.									22	
23-25	7,10 10,14	35	149	SP: Sand, fine to medium with some coarse grains. Light gray. Fine sand at base of sampler. No stain. Slight solvent odor.										
				Fine sand may extend from 20', but washed from sampler when retrieved. TD = 25 feet Interval sampled for laboratory analysis: 9.5'-10.7'									27	
													32	

BORING B-13

PROJECT: KEYSPAN ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/24/98
 DATE COMPLETED: 11/24/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 50° F, SUNNY, LIGHT WIND
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SPILL	NONE	SLIGHT	MODERATE	STRONG		
hand dug												0	
3-5	2,8 6,6	65	0	SP: Sand, fine to medium. Brown. Moist. No stain. No odor. SW: Sand, fine to coarse with some small gravel. Reddish brown. No stain. No odor.								5	
5-7	4,5 4,4	75	31	SP: Sand. Fine to medium. Brown. Wet. No stain. No odor. SP: Sand. Dark brown to black stained with tar/oil. Moderate odor. Color alternates to gray. Some reddish tar 2" thick. Strong odor. SP: Sand. Light gray. No stain. Moderate odor.									
7-9	1,2 4,6	75	7	SP: Sand. Fine to medium. Gray. Wet. Grades to light gray at 7.4'. Dark gray at 8.2'; then gray at 8.3+'. Stained 8.0-8.5'. Moderate tar/oil odor 7-8.2'. Moderate sulfur odor 8.2-8.3'.									
9-11	3,6 6,9			SP: Sand, fine to medium. Light gray. No stain. Slight sulfur odor.								10	
		70	3										

ATLANTIC

BORING B-13

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/24/98
 DATE COMPLETED: 11/24/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 50' F, SUNNY, LIGHT WIND
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
9-11	3,6 6,9	30	2	SP: Sand as above. Light gray. No stain. Slight sulfur odor.									10	
11-13	4,8 7,12													
13-15	7,13 20,22	45	1	SP: Sand as above. Light gray. No stain. Slight sulfur odor.									15	
				TD=15 feet Interval sampled for laboratory analysis: 8.2-8.5' and 9-11'.									20	

BORING B-15

PROJECT: KEYSAN ROCKAWAY BEACH SUBSTATION

PROJECT NO: 98318-2003

LOCATION: ROCKAWAY BEACH, NEW YORK

DATE STARTED: 11/24/98

DATE COMPLETED: 11/24/98

DRILLING CONTRACTOR: FENLEY & NICOL

DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA

SAMPLING METHOD: 2 FOOT SPLIT SPOONS

GROUND ELEVATION: FEET MSL

WATER LEVEL:

WEATHER: 50° F, SUNNY, LIGHT WIND

INSPECTOR: TOM STIEGEMEIER

CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	RECOVERY %	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	NONE	SLIGHT	MODERATE	STRONG		
hand dug												0	
3-5	10,11 13,10	60	0	SP: Sand, fine to medium. Light brown. Moist. Slight stain. No odor. SP: Sand, fine to medium. White. Moist. No stain. No odor.								5	
5-7	7,8 7,7	60	0	SP: Sand, fine to medium. White to light tan. Moist. Wet at base. No stain. Very slight sulfur odor.									
7-9	6,5 6,4	50	0	SP: Sand, fine to medium. Light brown. Wet. No stain. Very slight sulfur odor.									
9-11	3,1 2,2	70	0	SP: Sand, fine to medium. Light gray to white. Few shells. Wet. No stain. Very slight sulfur odor.								10	
11-13	3,1 1,1	65	0	SP: Sand, fine to medium. Light brown. Color grades at 11.8' to black. Slight stain. Slight sulfur odor. SM: Silty sand with thin silty layers. Black. Wet. Moderate sulfur odor.									
13-15	2,3 2,15	75	1	SP: Sand, fine to medium with shell fragments. Dark brown/black. Stained at 13.0-13.3' then color grades to gray at base of shoe. Slight sulfur odor.								15	
				TD=15 feet Interval sampled for laboratory analysis: 13-15'									

ATLANTIC

BORING B-16

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/24/98
 DATE COMPLETED: 11/24/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 50° F, SUNNY, LIGHT WIND
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	GREEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug				SP: Sand. Dark brown.									0	
				SW: Sand, fine to coarse. Orange/reddish brown. No stain. No odor.										
3-5	13,9 10,14	50	0	SP: Sand, fine to medium. Yellow brown. Moist. No stain. No odor.										
5-7	4,6 8,8	60	0	SP: Sand as above, few shell fragments. Wet at 6 foot. No stain. Slight sulfur odor.									5	
7-9	5,4 4,7	75	0	SP: Sand as above, fine to medium with few shell fragments. Wet. No stain. No odor.										
9-11	4,5 4,5	60	0	SP: Sand as above, fine to medium. Gray. No stain. Slight sulfur odor.									10	
11-13	8,16 31,30	80	0	SP: Sand, fine to medium with few shell fragments. Dark gray. SP: Sand with silt and peat material. Black. SP: Sand. Gray grading to light gray at 12.0. Stained (?). Sulfur odor.										
13-15			0	SP: Sand, fine to medium. Light gray. Wet. No stain. Slight sulfur odor (peat, organics)										
				TD=15 feet Interval sampled for laboratory analysis: 9-11'									15	

BORING B-18

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/18/98
 DATE COMPLETED: 11/18/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 55° F, SUNNY, LT. WINDY
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

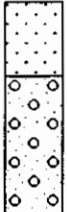
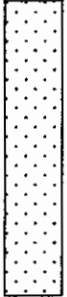
SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE			STRONG
0-2	4,4 5,6	70		SW: Sand with few cinders and gravel. Light gray to reddish brown. Moist. No stain. No odor.									0	
2-4	4,4 6,5	90		SP: Sand with coal and cinder fragments. Reddish brown grading to light tan. Iron staining. No odor. SP: Sand. Uniform. Tan. Slightly moist. No stain. No odor.										
4-6	4,5 7,8	90	23	SW: Sand, fine to medium. Light gray. Wet at 5.5'. No stain. Slight solvent odor.									5	
8-8	4,3 7,7	85	547	SP: Sand as above. Light gray. Wet. No stain. Moderate to strong solvent odor.										
8-10	9,10 12,19	75	1330	SP: Sand as above. Light gray. Wet. No stain. Strong solvent odor.										
10-12	5,3 10,8	90	1250	SP: Sand as above. Light gray. No stain. Strong solvent odor.									10	
12-14	4,5 9,7	60	47	SP: Sand as above. No stain. Strong solvent odor.										
14-16	4,9 14,18	60	127	SP: Sand, fine to medium with trace rounded coarse grains. Gray to dark gray. Stained. Moderate tar odor, with some solvent smell.									15	
16-18	15,15 20,32	55	145	SP: Sand, fine to medium with trace of loam (1-3%). Gray. Slight staining. Slight tar odor.										

ATLANTIC

BORING B-18

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/18/98
 DATE COMPLETED: 11/18/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 55° F, SUNNY, LT. WINDY
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.					ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG			
16-18	15,15 20,32	65	12	SW: Sand, fine to medium with trace of coarse sand and shell fragments. Gray to light gray. Stained. Tar odor.										17	
18-20	14,12 21,32														
20-22	4,17 20,30	0	17	No recovery											
22-24	15,20 26,40			SP: Sand, with trace of coarse sand grains and shell fragments. Gray. Stain. Slight tar odor.										22	
24-26	14,20 40,45			SP: Sand, fine to medium, with trace of coarse grains and shell fragments. Slight stain. Slight odor.											
			18	TD = 26 feet Interval sampled for laboratory analysis: 8'-10'										27	
														32	

BORING B-19

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/19/98
 DATE COMPLETED: 11/19/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 45° F, SUNNY, LT. WIND, N
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION	
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE				STRONG
0-2	4,6 5,6	70		SP: Sand with some fines and organic matter. Dark brown. No stain. Slight naphthalene odor. SW: Sand, fine to medium with some gravel. Light tan. Dry. No stain. No odor.									0		
2-4	3,6 7,4	60	0	SP: Sand, fine to medium. Light tan. Very slightly moist. No stain. No odor.											
4-6	1,1 2,4	85		SP: Sand as above. Light tan. Thin bands of brown silty sand with coal and cinders. Wet at 5.0'. No stain. Very slight odor.											
6-8	4,6 9,9	75	57	SP: Sand as above. Light gray grading to dark gray at 6.8'. Wet. Stained. Moderate solvent odor as at B-18, but lighter.											
8-10	2,8 15,9	80	135	SP: Sand as above. Light gray to tan at 8.4'. No stain or sheen. Strong solvent odor.											
10-12	9,9 11,15	65	212	SP: Sand as above. Light gray to light brown color. Wet, but with oily fluid (water beads on spoon surface). No stain. Strong odor.											
12-14	6,7 10,9	70	252	SP: Sand as above. Fine to medium. Light tan. Wet with oily fluid. No stain. Strong odor.											
14-16	10,9 13,10	55	289	SP: Sand. Light tan grading to light gray at base of shoe. Fluid appears more watery versus the notes above. Slight stain. Strong odor.											

BORING B-19

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/19/98
 DATE COMPLETED: 11/19/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 45° F, SUNNY, LT. WIND, N
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
16-18	3,9 20,20	90	121	SP: Sand, fine to medium with few coarse grains and shell fragments. Gray to dark gray grading to black. Dissolved tar/oil contaminated zone. Stained with no sheen. Solvent with tar odor.									16	
18-20	10,25 30,34	90	79	SW: Sand and gravel. Fine to coarse with some small rounded quartz gravel and shell fragments. Dark gray grading to light gray. Stained, decreasing below 18.5'. Tarry odor.										
20-22	25,30 30,24	80		SW: Sand and gravel. Fine to coarse sand with small gravel (0.5" dia.) quartz. Rounded.									21	
22-24	11,10 7,12	75	19	SP: Sand, fine to medium. Light gray. Very slight stain. Very slight tar/naphthalene odor.										
24-26	10,21 35,30	35	12	SP: Sand as above, fine to medium, with few coarse grains. No stain. No odor.										
				TD = 26 feet									26	
				Interval sampled for laboratory analysis: 9'-10', 23'-24'.									31	

BORING B-20

PROJECT: KEYSPAN ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/20/98
 DATE COMPLETED: 11/20/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 55° F, SUNNY WITH HAZE, LIGHT WIND
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug				SM: Silty sand with clinker and cinders. Dark brown.									0	
				SP: Sand, fine to coarse with small gravel. Reddish brown iron stain.										
				SP: Sand. Light tan.										
3-5	4,6 6,8	75	1	SP: Sand, fine to medium with few shell fragments and gravel. Light gray. Dry. No stain. No odor.										
5-7	3,4 3,5	80	8	SP: Sand, fine to medium with few shell fragments. Light gray. Moist. No stain. Very slight odor.									5	
				SP: Sand as above. Wet.										
7-9	3,2 2,3	25	35	SP: Sand. Gray grading to black at base. Dissolved NAPL staining. Moderate odor.										
9-11	7,6 15,8	75	339	SP: Sand with tar/oil contamination. Black. Stained with sheen on surfaces. Moderate odor.									10	
				SP: Sand. Dark brown. Stain, but no sheen. Moderate odor.										
11-13	4,8 11,9	50	205	SP: Sand. Dark brown/gray. Dissolved phase contamination. Sight sheen on water surfaces. Moderate tar odor.										
				TD = 13 feet										
				Interval sampled for laboratory analysis: 9.0'-9.5'									15	

BORING B-21

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/20/98
 DATE COMPLETED: 11/20/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 55° F, SUNNY AND HAZY, LT. WIND
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SPLIT SPOON SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug				Hand dug upper 3 feet.									0	WELL MW-03
3-5	10,9 10,5	60	1	SP: Sand. Light brown. Moist. No stain. No odor.	■				■					
				SP: Sand. Very moist. No stain. Slight to moderate solvent odor.						■				
5-7	11,4 3,7	65	85	SP: Sand as above. Grading to dark brown. Clinker, ash, and cinders.	■								5	
7-9	10,11 16,13	65	185	SP: Sand, fine to medium. Light brown. Stained with MGP material. Strong solvent odor.	■									
9-11	9,10 34,26		222	SP: Sand as above, fine to medium. Light tan. No stain. Strong solvent odor that is very light. Cannot distinguish if it is free phase or dissolved.	■								10	
11-13	2,5 7,7		491	SP: Sand as above. Light brown to tan. No stain. Strong odor.	■									
				TD = 13 feet Interval sampled for laboratory analysis: 10'-11'									15	

BORING B-22

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/23/98
 DATE COMPLETED: 11/23/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 45° F, SUNNY, W-NW WIND 10-20 MPH
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
hand dug				Fill.								0	
3-5	5,9 10,9	70		SW: Sand, fine to coarse. Light brown. Some iron staining. No odor.									
5-7	5,5 7,7	65		SP: Sand with few shells. Light brown with some reddish brown iron staining. Moist. No odor.									
7-9	2,3 3,7	35	335	SP: Sand. Light gray. Wet. No stain. Very slight odor.									
9-11	7,11 10,14	80		SP: Sand as above, fine to medium grains. Gray to dark gray. No stain. Slight odor.									
11-13	16,14 15,20	25		GW: Sand with cinders and cilnker with tar/oil NAPL. Heavy staining. Strong odor.									
				SP: Sand with tar/oil NAPL. Black. Heavy stain. Strong odor.									
				SP: Sand as above, fine to medium with few shells. Gray. Dissolved contamination, no NAPL. Slight staining. Moderate to slight naphthalene odor.									
				SP: Sand, fine to medium. Light gray. Slight staining. Slight naphthalene odor.									
				TD = 13 feet									
				Interval sampled for laboratory analysis: 0'-3' and 9'-11'.									

ATLANTIC

BORING B-23

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 11/23/98
 DATE COMPLETED: 11/23/98
 DRILLING CONTRACTOR: FENLEY & NICOL
 DRILLER: CHARLES BLUMBERG

DRILLING METHOD: 4.25 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 45° F, SUNNY, W-NW WIND 10-20 MPH
 INSPECTOR: TOM STIEGEMEIER
 CHECKED BY:

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug				GW: Sand and gravel. Black.									0	
3-5	1,5 8,8	30	4	SW/GW: Sand and gravel fill with clinker, cinders and ash. Black to dark brown. Moist. Stained. Very slight odor.										
5-7	15,5 3,3	50	18	SW: Sand with small gravel. Dark brown. Wet. Stained. Very slight odor SW: Sand with cinders and ash. Reddish brown. Wet. Stained. Very slight odor.									5	
7-9	7,2 7,3	30	108	SW: Sand with clinker fragments. Wet. Stained. Slight odor. GW: Sand with clinker, cinders, and ash. Wet with tar/oil NAPL. Heavy stain. Strong odor.										
9-11	8,7 13,19	60	640	GW: Sand with clinker, ash and tar/oil NAPL. Heavy stain. Strong odor. SP: Sand. Black with reddish tar. Sheen. Moderate odor. SP: Sand. Color grades to brown. Sheen. Moderate odor.									10	
11-13	10,10 9,10	70	340	SP: Sand, fine to medium with some coarse grains. Brown. Stained. Slight odor.										
				TD = 13 feet Interval sampled for laboratory analysis: 9.5'-10.0' and 11'-13'.									15	

BORING MW-A

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 10/22/98
 DATE COMPLETED: 10/23/98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING
 DRILLER: OSAMI OSMAN

DRILLING METHOD: 2.5 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL: FEET MSL
 WEATHER: 60° F, SUNNY, WINDY
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
				Augered to 10 feet.								0	
augered												5	
10-12	1,1 1,2	90		SP: Sand with few shells. Reddish brown. Wet. Slight odor.								10	
12-14	1,2 4,9	90	75	SP: Sand as above. Black stained, forming sharp contrast with sand above, moderate naphthalene odor and staining.								15	
14-16	4,6 10,30	100	35	SP: Sand as above. Dark gray. Naphthalene odor and sheen on wet surfaces.								20	
16-18	2,4 8,12	45	20	SP: Sand as above. Fine to medium, with some coarse. Gray. Stained with minor sheen. (Sheen possibly due to water in augers) Naphthalene odor.								25	
18-20	2,5 8,12	100	8									30	
20-22	4,12 14,28	100	10	SP: Sand as above with trace shells.								35	
augered				SP: Sand, fine to coarse with some small rounded gravel. Gray. Very slight sheen. Moderate naphthalene odor.									
				Augered to 28 feet.									
28-30	3,4 8,14	70	N/A	SP: Sand as above, with trace shells. Gray. Stained with slight naphthalene odor.									
				TD=30 feet.									
				Augers pulled from borehole to allow deep sand to collapse. Redrilled with 4.5" HSA to install well to 16 feet depth.									

ATLANTIC

BORING BOR-B

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 10/22/98
 DATE COMPLETED: 10/22/98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING
 DRILLER: OSAMI OSMAN

DRILLING METHOD: 2.5 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL:
 WEATHER: 60° F, SUNNY, WINDY 10-15 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
augered				Auger to 10 foot depth. Brown sand with gravel clinker and brick brought to the surface in cuttings. As augers approached 10 foot depth oil/tar stained soils were brought to surface. Groundwater and oil/tar contaminated soils <10 feet.									0	
10-12	3,4 5,3	75	197	GW: Black tar/oil stained clinker and coal fragments with sand. Wet. Strong odor.									5	
12-14	1,1 1,2	20	24	SW: Sand with clinker and coal fragments, and oil/tar NAPL. Black. Wet. Strong odor. Large fragments in shoe blocking recovery.									10	
14-16	1,1 10,12	100	N/A	SP: Sand, fine to coarse with few shells. Black. Heavy stain and strong odor.									15	
16-18	2,2 6,7	75	92	SP: Sand as above. Dark gray. Small gravel at 16.5, moderate odor.									20	
18-20	3,7 15,14	50	71	NOTE: Sands running into augers.									25	
20-22	11,1 4,13	40	N/A	SP: Sand as above. Oily sheen with moderate odor.									30	
22-24	2,7 12,13	75	28	SP: Sand as above. Brown to grading to gray, with thin darker stained zones. Sheen. Moderate odor.									35	
24-26	7,10 13,14	0	N/A	SP: Sand as above. Few rounded and angular stones/shells at 23.2 feet, slight sheen with odor.										
augered				No recovery- few coarse sand grains remain in sampler.										
28-30	2,2 7,8	100	N/A	SP: Sand, fine to medium with shell fragments. Gray. Stained. Slight odor.										
				SP: Sand as above. Reddish brown. Tar/oil (DNAPL). Stained. Strong odor.										
				TD=30 feet.										
				Interval sampled for laboratory analysis: 29.6-29.9 feet.										

BORING BOR-C

PROJECT: KEYSpan ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-2003
 LOCATION: ROCKAWAY BEACH, NEW YORK
 DATE STARTED: 10/23/98
 DATE COMPLETED: 10/23/98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING
 DRILLER: OSAMI OSMAN

DRILLING METHOD: 2.5 INCH I.D. HSA
 SAMPLING METHOD: 2 FOOT SPLIT SPOONS
 GROUND ELEVATION: FEET MSL
 WATER LEVEL: 8 feet
 WEATHER: 60° F, SUNNY, WINDY
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.					ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG			
augered				Augered to 6 feet.										0	
6-8	4,3 3,4	75	0	SP: Sand, fine to medium. Dark brown. Dry. Some iron staining and slight odor.										5	
8-10	3,4 1,1	50	275	SW/GW: Sand and gravel, with clinker, cinders, coal fragments. Dark brown grading to black. Moist. Stained naphthalene odor.										10	
10-12		60	760	GW: Fill: clinker and coal fragments, some bottom ash in shoe. Black. Wet. Tar/oil stain and sheen on surface. Tar odor.										15	
12-14	0.5,1 1,1	35	1150	GW: Same as above. Fill with tar/oil NAPL, strong odor, sandy material in base of shoe. Black.										20	
14-16	1,1 10,10	100	N/A	SW: Sand with clinker and ash. Black. Heavy tar/oil NAPL with strong odor.										25	
16-18	1,6 10,12	40	12	SM: Organic sandy silt, fibrous material and grass blade, appears to be peat. Cohesive. Black. Heavy stain and strong odor.											
18-20		50	N/A	SP: Sand, fine to medium with trace coarse. Gray. Stained. Moderate naphthalene odor.											
				SP: Sand as above. Light gray band with slight stain and odor.											
				TD=20											

BORING GP-01

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-16-98
 DATE COMPLETED: 10-16-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: SUNNY, 60°, WIND 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	GREEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug			2	SW: Sand (Fill). Fine to coarse with gravel, coal, and clinker fragments. Dark brown to black. Moist. Stained with slight odor.									0	
			4.2											
			13	Composite headspace sample 16.9 ppm										
			10.2	SW: Sand and gravel as above. Brown. No stain. Slight odor.										
3-7		63	12.2	SW: Sand as above.										
			16											
			21	GW: Clinker fragments with sand. Moist. Moderate odor.									5	
			68	Wet at 6 feet (approx).										
7-10		66	300	SW: Sand with coal and gravel. Fine to coarse grains. Heavy oil/tar stain. Strong odor.										
				TD= 10 feet									10	
				Interval sampled for laboratory analysis: 0-3 feet, and 9.5-10 feet									15	

BORING GP-02

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-19-98
 DATE COMPLETED: 10-19-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 7 FEET
 WEATHER: SUNNY, 70°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.					ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG			
hand dug			0	SW/GW: Sandy gravel. Brown to reddish brown. Moist.										0	
				SW/GW: Sandy gravel as above. Minor iron staining.											
3-7		50	0	SW: Sand and gravel with ash and coal. Fine to coarse sand and medium gravel. Moist. Slight stain and odor.										5	
			7	SM: Sand with solidified tar, small coal fragments and coarse sand grains. Black. Tarry material is cohesive. Heavy stain. Strong naphthalene odor.											
			62	SM: Sand with solidified tar, small coal fragments and coarse sand grains. Black. Tarry material is cohesive. Heavy stain. Strong naphthalene odor.											
7-11		58	180	Layer of brick fragments blocking recovery.										5	
			121	SW/GW: Sand with gravel, coal, clinker, oil/tar NAPL. Black to dark brown. Wet. Heavy stain. Strong odor.											
			266	SP: Sand, fine to medium. Wet. Heavy stain, with iridescent sheen wet surface. Strong naphthalene odor.											
				TD=11 feet											
				No samples collected for laboratory analysis.											
														15	

BORING GP-03

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-19-98
 DATE COMPLETED: 10-19-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 7 FEET
 WEATHER: SUNNY, 70°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	RECOVERY %	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.						ODOR NONE SLIGHT MODERATE STRONG	LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug			0	SW: Sand with gravel and clinker. Fine to coarse grains. Rounded gravel. Clinker has 3" diameter. Brown to reddish brown. Moist. No stain. No odor.									0	
				SW: Sand as above, no gravel.										
			0 36	SP: Sand, fine to medium. Brown. Moist. Some iron staining. No odor. SP: Sand as above. Gray.									5	
4-8		60		SW: Sand with coal and cinders. Fine to coarse grains. Brown to black. Moist. Stained with moderate odor.										
			8	SW: Sandy gravel, with coal, cinders, and gravel. Black. Wet. Tar/oil stained. Moderate odor.										
8-11.5		71	7 9 13 54										10	
				TD=11.5 feet Interval sampled for laboratory analysis: 0-3 feet.									15	

BORING GP-04

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-16-98
 DATE COMPLETED: 10-16-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: SUNNY, 70/G, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
hand dug			7.2	SW/GW: Compacted clinker, rock and brick debris with sand. No odor.									
3-7		73	13.1	SP: Sand with some shells. Fine to medium grains. Moist. Tan. Very slight iron staining, no odor.									
			14	Wet at 6 feet.									
7-10		83	19.2	SP: Sand as above. Tan. No stain or odor.									
			21.5										
			19.5	TD=10 feet Interval sampled for analysis: 0-3 feet.									

BORING GP-05

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-21-98
 DATE COMPLETED: 10-21-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 6.5 FEET
 WEATHER: LIGHT RAIN, 60°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug			0	SW/GW: Sand with gravel, clinker and shells. Fine to coarse sand. Brown. No odor.									0	
3-7		80	0	SW: Sand with gravel, coal and clinker fragments. Fine to coarse sand. Reddish brown. SW: Sand as above. Color grades to gray. Moist. No stain. No odor. SP: Sand, fine to medium. Moist.									5	
7-11		68	0	SP: Sand as above. Wet. SP: Sand as above. Brown/gray grading to gray. No stain or odor.									10	
			0	SP: Sand as above. No stain. Septic odor.									10	
				TD=11 feet Interval sampled for laboratory analysis: 0-3 feet.									15	

BORING GP-06

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-21-98
 DATE COMPLETED: 10-21-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL:
 WEATHER: PARTLY CLOUDY, 60°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug			0	SW: Gravel cover over medium to coarse sand. Brown. Moist to wet. Stained. No odor.									0	
				TD=1.5 feet: Asphalt surface.										
				Interval sampled for laboratory analysis: 0-1.5 feet.										
				NOTE: Location is in gravel covered island within transformer bank at eastern end of substation. Asphalt surface appears to be continuous.										
													5	
													10	
													15	

BORING GP-07

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-16-98
 DATE COMPLETED: 10-16-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: SUNNY, 60°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug				SW: Sand with gravel. Brown.									0	
			2.3											
			1.7	SW: Sand as above. Reddish brown - iron stained. No odors.										
3-7		75	3.3	SP: Sand, fine to medium. Shell fragments at 3.8 feet. Reddish brown.										
			5.5	SP: Sand as above, thin banded zones of brown and light tan, grading to tan. Slight stain and odor.										
			7.4											
			7.4											
7-10		100	23											
			65											
			910	SW/GW: Sandy gravel with clinker, bottom ash, cinders. Wet. Oil/tar NAPL. Strong naphthalene/diesel odor.										
			1300	TD=10 feet Interval sampled for laboratory analysis: 0-3 feet.									10	
													15	

BORING GP-08

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-19-98
 DATE COMPLETED: 10-19-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: SUNNY, 60', WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.						ODOR	LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug			0	SW: Sand with shells. Brown to dark brown. Moist. No odor.									0	
			0	SP: Sand, fine to medium. Light brown to gray. Moist. No stain or odor.										
			0	SP: Sand as above. Uniform tone and texture. No stain or odor.										
3-7		80	0	SW: Cinders and slag with sand and coal fines. Dark brown to black. Slight odor.									5	
			2											
			16	SW: Sand/cinder/gravel with brick fragments and coal. Black. Wet with oil/tar NAPL. Strong naphthalene odor.										
7-11		63	49										10	
			17	SP: Sand, fine to medium with few coarse. Heavy black staining (NAPL), with iridescent sheen. Naphthalene/diesel odor.										
			77											
11-15		75	20	SW/GW: Sand with coal fragments, fines and coarse grains. Rounded coarse sand ends at 13.5. Wet. Heavy tar/oil stain. Strong odor.										
			120											
				TD=10 feet									15	
				Interval sampled for analysis: 8-10 feet.										

BORING GP-09

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-19-98
 DATE COMPLETED: 10-19-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: COOL, SUNNY, 50° , WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	NONE	SLIGHT	MODERATE	STRONG		
			0	SW: Sand/gravel with clinker material. Dark brown.								0	
hand dug			0	SW: Sand. Reddish brown to tan. Moist.									
				SP: Sand, fine to medium. Moist. No odor.									
3-7		60	40	SW: Sand with coal. Dark brown. Platy appearance with tarry material. Weathered, cohesive. Moist. Stained. Moderate odor. Wet.								5	
			17	SW/GW: Sandy gravel, with bottom ash and coal, oil/tar NAPL. Heavy stain. Strong odor.									
7-11		75	81										
			250										
			31									10	
			73										
11-15		63	55	SP: Sand, fine to medium. Dark brown. Thick zone of coarse grains at 12.5, oil/tar NAPL. Heavy stain. Strong odor.									
			270										
				TD=15 feet. Attempt to sample 15 to 19 foot interval was unsuccessful as wet sand collapsed borehole. Interval sampled for analysis: 8-11 feet.								15	

BORING GP-10

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-19-98
 DATE COMPLETED: 10-19-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 7 FEET
 WEATHER: SUNNY, 60°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	NONE	SLIGHT	MODERATE	STRONG		
hand dug			0	SW/GW: Sand and gravel with clinker, some iron staining in bands. Brown. No odor.								0	
3-7		75	0	SP: Sand, fine to medium with trace of coarse grains. Brown, tone grades to tan. Slight odor.								5	
			61	SW: Sand with slag, cinders, and coal. Dark brown to black, grades to tan. Stained with naphthalene, moderate odor.									
7-11		75	150	SW: Sand, as above, with coal, slag, cinders, wet, heavy stain (NAPL). Strong odor.									
			347	SW: Increasing sand content. Heavy stain. Strong odor.								10	
			230										
				TD=11 feet Interval sampled for analysis: 0-3 feet.								15	

ATLANTIC

BORING GP-11

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-19-98
 DATE COMPLETED: 10-19-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 7.7 FEET
 WEATHER: SUNNY, 70°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.					ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG			
hand dug			0	SW: Gravel surface over sand, fine to medium sand with rounded gravel. Reddish brown.										0	
			0	SP: Sand with some gravel. Fine to medium grains. Moist. No stain. No odor.											
			0	SP: Sand as above. Uniform tone and texture. No stain. No odor.											
3-7		63	0											5	
			0												
			0	SP: Sand as above. Reddish iron staining. Very moist.											
			0	SP: Sand, fine to medium. Gray (stained?), grading to black. Slight staining and odor.											
7-11		90	0	SP: Sand with coal and cinders. Fine to coarse grains. Dark brown to black. Wet. Slight staining and odor.										10	
			14												
				TD=11 feet											
				Interval sampled for laboratory analysis: 0-3 feet.											
														15	

BORING GP-12

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-20-98
 DATE COMPLETED: 10-20-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 7.5 FEET
 WEATHER: SUNNY, 70°, WIND 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHOWN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
hand dug			0	SW/GW: Sand and gravel. Dark brown.									
			0	SW: Sand with clinder and coal fragments. Fine to medium sand. Light tan to white. No stain or odor.									
3-7		80	0	SP: Sand with few shells, fine to medium grains. Gray.									
			0	SP: Sand as above with gravel, small rounded (0.75"). Moist. No stain or odor.									
				SP: Sand as above. Wet.									
7-11		58	0	SP: Sand as above. Thin black zone, then grades to reddish brown, iron stained, then grading gray to dark gray at base of sample. Slight naphthalene odor.									
				SP: Sand, banded gray and brown.									
11-15		38	N/A	SP: Sand with coal and gravel fragments and 2" silty sand (SM) layer Dark gray. Stained. Tar odor.									
				SP: Sand, fine. Uniform gray tone. Very slight odor and staining.									
				TD=15 feet									
				Interval sampled for laboratory analysis: 0- feet.									

BORING GP-13

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-16-98
 DATE COMPLETED: 10-16-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: SUNNY, 70°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug			0	SW: Sand with gravel and some shell fragments. Fine to medium grains. Brown. Wooden object with creosote (timber?) SW: Sand, fine to coarse. White. No stain. No odor.									0	
3-7		68	N/A	SP: Sand, fine to medium, with few shell fragments. Gray. Moist.									5	
7-10		83	N/A	SP: Sand as above. Increasing moisture. Wet. SP: Sand, fine to medium. Dark gray. Stained with naphthalene/diesel odor. TD=10 feet Interval sampled for analysis: 0-3 feet.									10	
													15	

BORING GP-14

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-20-98
 DATE COMPLETED: 10-20-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: 8 FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: SUNNY, 70°, WINDY 5-15 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug			1	SW/GW: Gravel surface, over sand/gravel with clinker, gravel, and brick. Brown.									0	
				SP: Sand, fine to medium. Tan to white color. Moist. No odor.										
3-7		63	0	SP: Sand as above. No stain. No odor.										
				SP: Sand as above. Minor light brown staining. No odor.									5	
7-11		70	0	SP: Sand as above. Light brown grading to gray at base. Stained. very slight naphthalene odor.										
				SP: Sand as above. Light brown grading to gray at base. Stained. very slight naphthalene odor.									10	
			9	TD=11 feet Interval sampled for laboratory analysis: 5-6 feet.									15	

BORING GP-15

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-16-98
 DATE COMPLETED: 10-16-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION:
 WATER LEVEL:
 WEATHER: SUNNY, 60°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug				SW: Sand with gravel, coke/clinker fragments. Fine to coarse grains. Black to brown. Moist.									0	
			1	SP: Sand, fine to medium. Light brown to tan. Moist. No stain. No odor.										
			1.2											
3-7		72	4	SP: Sand as above.										
			6.7											
			8.3										5	
			3.8											
7-10		90	4.8	SP: Sand as above. Gray. Wet. Slight stain and odor. PID head space analysis at 8'=340ppm.										
			25											
			34	TD=10 feet Interval sampled for laboratory analysis: 0-3 feet									10	
													15	

BORING GP-16

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-20-98
 DATE COMPLETED: 10-20-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION:
 WATER LEVEL: 7.5 FEET
 WEATHER: SUNNY, 60°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
				GW: Compacted gravel surface.								0	
hand dug			4	SW/GW: Sandy gravel. Dark brown. SP: Sand, fine to medium Light brown to reddish brown. Moist. Slight iron staining. Slight odor.									
			0	SP: Sand as above, with trace of shells grading to gray.									
			0										
3-7		70	0									5	
			0	SP: Sand as above. Increasing moisture. Stain. Slight odor.									
				SP: Sand as above. Uniform tone and texture.									
7-11		75	0	SP: Sand, fine to medium. Uniform texture. Light brown, grading to tan and dark gray at depth. Wet. Increasing stain.									
			2	SP: Sand as above. Gray grading to black tone. Increasing stain and moderate naphthalene/diesel odor, small dabs of oil/tar.									
11-13		100	4										
			13										
			102	TD=13 feet, headspace at base of sample-102 ppm Interval sampled for laboratory analysis: 3-6 feet.									
												15	

BORING GP-17

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-20-98
 DATE COMPLETED: 10-20-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 7.6 FEET
 WEATHER: COOL, SUNNY, 50°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
hand dug			14	SW: Sand and gravel with clinker. Brown to black.									
			14	SW: Sand as above: encountering large asphalt, concrete fragments and brick. Moist. Slight stain and odor.									
3-7		88	0	SP: Sand, fine to medium. Light brown grading to reddish brown. Few shells at 4.8. Moist. Iron staining. Slight odor.									
			2										
7-11		75	1	SP: Sand as above, some coarse grains.									
			0.7	SP: Sand as above, thin zone of rounded quartz coarse sand, two inch thick zone, sand grading to light gray. Wet. No stain. Slight odor.									
11-15		75	1										
			9.4	SP: Sand, fine to medium. Dark brown grading to black. Stained with moderate naphthalene odors.									
			4	SP: Sand as above. Dark brown to black. Stained. Naphthalene odor.									
			5										
			16										
				TD=15 feet Interval sampled for laboratory analysis: 0-3 feet.									

BORING GP-18

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-20-98
 DATE COMPLETED: 10-20-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: SUNNY, 70°, WINDY 5-15 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
				SW/GW: Sand with gravel, brick fragments and clinker. Fine to coarse. No odor.								0	
hand dug			6	SP: Sand, fine to medium. White grading to tan. Moist. No odor.									
			0	SP: Sand as above with few small shell fragments. Uniform color and texture. No stain. No odor.									
			0										
3-7		80	0									5	
			0										
				SP: Sand with shell fragments, fine to coarse grains. Tan tone grades to brown and dark gray at base of sample (staining).									
7-11		50	N/A	SP: Sand as above. Increased stain and naphthalene/diesel odor. No sheen.								10	
				TD=11 feet									
				Interval sampled for laboratory analysis: 0-3 feet.								15	

BORING GP-19

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-21-98
 DATE COMPLETED: 10-21-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 7.5 FEET
 WEATHER: PARTLY CLOUDY, LIGHT RAIN, 60°, WIND 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug				SW/GW: Sand and gravel. Brown. No odor.									0	
3-7		55		SP: Sand, fine to medium. Light brown grading to brown/gray. Moist. No stain. No odor.									5	
7-11		75		SP: Sand. Light brown. No stain. Very slight odor. SW: Sand with numerous shells. Dark brown to reddish brown. SP: Sand, fine to medium. Gray. Moderate stain and odor. SW/GW: Sand and gravel with clinker, coal, ash and oil/tar NAPL. Dark brown to black. Heavy stain. Strong odor.									10	
				TD=11 feet No sample collected for laboratory analysis.									15	

BORING GP-20

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-20-98
 DATE COMPLETED: 10-20-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 8.5 FEET
 WEATHER: SUNNY, 70°, WIND 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE			STRONG
				Asphalt surface and subgrade.									0	
hand dug			3	SW/GW: Sand and gravel, large clinker fragments. Brown.										
			0	SP: Sand with shells, fine to medium with trace coarse grains. Moist. No stain. No odor.										
3-7		83	0	SP: Sand as above. Tan.									5	
			0	SP: Sand, fine to medium. Gray. No stain. No odor.										
7-11		60	0	SP: Sand as above. Wet. Gray, grading to dark gray, uniform lithology. Slight staining and naphthalene odor.									10	
			0	SP: Sand, fine to medium. Dark gray grading to black. Stained with naphthalene odor.										
2		80	9											
				TD=14.5 Interval sampled for laboratory analysis: 0-3 feet and 13.2-14 feet.									15	

BORING GP-21

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-21-98
 DATE COMPLETED: 10-21-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 6.5 FEET
 WEATHER: SUNNY, 60°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug			0	SW/GW: Sand with gravel with brick fragments and clinker (3" diameter). Brown to dark brown.									0	
			0	SP: Sand, fine to medium. Light brown.										
			0	SP: Sand with trace shells. Fine to medium grains. Moist. No stain. No odor.										
3-7		70	0										5	
			0											
			0	SP: Sand as above. Wet. No stain. No odor.										
			0	SP: Sand with shell fragments. Fine to medium grains. Light brown to brown. Slight naphthalene odor.										
7-11		38	0	SP: Sand as above. Dark gray. Stained with naphthalene odor.									10	
			0	SP: Sand as above. Dark gray grades to light gray at 12.5 feet.										
11-14		94	2											
			4	TD=14 feet										
				Interval sampled for analysis: 4-5 feet.									15	

BORING GP-22

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-20-98
 DATE COMPLETED: 10-20-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 7 FEET
 WEATHER: SUNNY, 70°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
hand dug			0	GW: Gravel with sand, large clinker fragments (4-5" diameter)									
				SW: Sand with gravel, coal, and clinker.									
3-7		70	N/A	SP Sand as above, fine to medium. Gray. Uniform tone and texture throughout sample. Moist to wet at base. No stain. No odor.									
7-11		68	N/A	SP: Sand as above with shells, one inch rounded quartz stone at 9'. Gray to light brown. No odor or stain.									
11-14		93	N/A	SP Sand as above with few shells. Gray. Uniform tone and texture. No stain. Slight naphthalene odor.									
				TD=14 feet									
				Interval sampled for laboratory analysis: 0-3 feet.									

BORING GP-23

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-21-98
 DATE COMPLETED: 10-21-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 6.5 FEET
 WEATHER: SUNNY, 50°, WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	RECOVERY %	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.					ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG			
hand dug			0	SW/GW: Sand with gravel, shells, and small clinker fragments. Brown. Moist. No odor. Encountered copper ground wire along posthole sidewall.										0	
3-7		63	N/A	SP: Sand, fine to medium, with trace coarse and shell fragments. Light brown grading to light gray.										5	
7-11		58	N/A	SP: Sand as above. Wet. No stain. No odor. SP: Sand as above, with shell fragments. Fine to medium grains. Light brown SP: Sand as above. Gray. Wet. Stained. Naphthalene/diesel odor.										10	
11-15		68	3	1 SP: Sand as above, fine to medium. Gray. Slight stain and odor. 4 Dark gray interval 11.9 to 12.2 SW: Sand, fine to coarse. Light gray. Wet. No stain. Septic odor.										15	
				TD=15 feet Interval sampled for laboratory analysis: 0-3 feet.											

BORING GP-24

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 10-21-98
 DATE COMPLETED: 10-21-98
 DRILLING CONTRACTOR: AQUIFER DRILLING & TESTING, INC.
 DRILLER: CHRIS STRATTON

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: 7 FEET
 WEATHER: PARTLY CLOUDY, 60', WINDY 5-10 MPH
 INSPECTOR: MICHELLE LITTEKEN
 CHECKED BY: TOM STIEGEMEIER

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
hand dug			0	SW: Sand with gravel and shells. Fine to medium grains. Brown. No stain. No odor.									0	
3-7		55	0	SP: Sand, fine to medium. Light brown. Some iron staining. Moist. Wet at base.									5	
7-11		50	0.4	SP: Sand as above, fine to medium. Reddish brown grading to gray. Wet. Slight staining and odor.										
				SP: Sand. Black staining and moderate odor. Sharply contrasts to gray sand above.									10	
				TD=11 feet No sample collected.									15	

BORING GP-30

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 12-30-98
 DATE COMPLETED: 12-30-98
 DRILLING CONTRACTOR: IMPACT DRILLING
 DRILLER:

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: COLD, WINDY, 30/G,
 INSPECTOR: JOHN RIPP
 CHECKED BY:

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODDR				LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG			
0-4		78	0.1	Topsoil. Dark brown. Debris: Coal material with sand and gravel. Fine to medium sand, small gravel. Black. SW/GW: Sand and gravel. Medium sand, round small gravel. Tan to light brown. SW: Sand, fine to coarse.										0	
4-8		100	0	SP: Sand, fine. Dry. Gray. No odor. SW/GW: Sand with shell fragments and gravel. Fine sand, small round gravel. Dark gray. SW/GW: Sand with gravel and shell fragments. Fine sand, small pea gravel. Black. No odor. Wet at 6.0 feet bgs SP: Sand, fine to medium. Wet. Light brown. No odor.										5	
8-10		33	0.2	SP: Sand, fine to medium. Wet. Light brown. No odor. SW: Sand with trace of shell fragments. Gray. No odor.										10	
10-12		70	0.2	SP: Sand, fine. Wet. Gray.											
12-14		40	0	SP: Sand, fine. Gray with brown staining. Slight odor.											
			1.0	SP: Sand, fine. Dark gray. No odor.											
			0	SP: Sand, fine. Wet. Dark gray. Oily odor.											
				SP: Sand, fine. Wet. Medium gray. Oily odor.											
14-16		95	0.2	SP: Sand, fine to medium. Gray. Uniform. Slight fuel oil odor.										15	
				TD=16 feet Interval sampled for analysis: 13'-15'											

BORING GP-31

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 12-30-98
 DATE COMPLETED: 12-30-98
 DRILLING CONTRACTOR: IMPACT DRILLING
 DRILLER:

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: COLD, WINDY, 30/G,
 INSPECTOR: JOHN RIPP
 CHECKED BY:

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.			ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG	
0-4		88	0	SM: Silty sand. Tarry. Dark gray. Roots. No odor. SM: Silty sand fill with crushed stone. Fine to medium sand. Black to gray. No odor. SP: Sand, fine to medium. Iron stained. GW: Gravel, fine to medium. Rounded. Layer of shells at 2.6'. No odor. SP: Sand, medium. Rust stained. No odor.								0	
4-8		63	0	SP: Sand, fine to medium. Gray. Rust stained. No odor. Wet at 6 feet bgs.								5	
8-10		70	0	SP: Sand, fine. Soft. Gray. Slight naphthalene odor.								10	
10-12		65	0	SP: Sand, fine. Wet. Gray. Slight oil odor.								15	
12-14		0	NA	No recovery.								20	
14-16		0	0	SP: Sand, fine. Disturbed sample. Slight odor.									
16-18		90	0	SP: Sand, fine to medium. Gray. No odor.									
				TD=18 feet Interval sampled for analysis: 1.5'-3.0'.									

BORING GP-32

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 12-30-98
 DATE COMPLETED: 12-30-98
 DRILLING CONTRACTOR: IMPACT DRILLING
 DRILLER:

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: COLO, WINDY, 30/G,
 INSPECTOR: JOHN RIPP
 CHECKED BY:

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION color, density, SOIL, admixtures, moisture, other notes, ORIGIN	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
					NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
				SM: Silty sand fill with 2" piece of weathered tar (0.6-0.8). Grass roots at surface.									0	
0-4		80	0.2 0	SP: Sand, fine. Light tan. SP: Sand. Mottled. Light tan. Rust streaks. SP: Sand, fine to medium. Some small gravel. Iron staining. Shell fragments at 2.7-2.9. Dry. No odor.										
4-8		70	0 0.2	SP: Same as above. Shell fragments at 4.4 feet. SP: Sand, fine to medium. Color changing from rust to gray. No odor. SP: Sand, fine to medium. Light brown. No odor.										
8-10		100	0	SP: Sand, fine. Rust stained. SP: Sand, fine. Wet. Gray. Boggy odor. No contamination.										
10-12		15	0	SP: Sand, fine. Dark gray. SM: Silty sand. Black. Organic odor.										
12-14		0	NA	No recovery.										
				TD=14 feet No sample collected for analysis.									15	

BORING GP-33

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 12-30-98
 DATE COMPLETED: 12-30-98
 DRILLING CONTRACTOR: IMPACT DRILLING
 DRILLER:

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: COLD, WINDY, 30/G,
 INSPECTOR: JOHN RIPP
 CHECKED BY:

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
0-4		75	0	SW: Sand, fine to medium with some silt and gravel. Roots. Dark brown to black. No odor. SP: Sand, fine to medium, with some shell fragments. Red mottled. Some layers of fine, light gray sand.									0	
4-8		73	0	SW: Sand and shell fragments. Red. SP: Sand, fine to medium. Dry. Red mottled. No odor. SP: Sand as above. SP: Sand, fine to medium with shell fragments. Light gray with black streak at 5.7.									5	
8-10		80	0	SP: Sand, fine to medium. Red mottled. SP: Sand, fine to medium. Gray with some red staining. SP: Sand, fine to medium. Gray.									10	
				TD=10 feet Interval sampled for analysis: 4-8 feet.									15	

BORING GP-34

PROJECT: KEYSpan - ROCKAWAY BEACH SUBSTATION
 PROJECT NO: 98318-1003
 LOCATION: ROCKAWAY, NEW YORK
 DATE STARTED: 12-30-98
 DATE COMPLETED: 12-30-98
 DRILLING CONTRACTOR: IMPACT DRILLING
 DRILLER:

DRILLING METHOD: GEOPROBE
 SAMPLING METHOD: GEOPROBE
 GROUND ELEVATION: FEET (MSL)
 WATER LEVEL: FEET
 WEATHER: COLD, WINDY, 30/G.
 INSPECTOR: JOHN RIPP
 CHECKED BY:

SAMPLE DEPTH (ft)	SAMPLE INTERVAL	% RECOVERY	PID (ppm)	SOIL DESCRIPTION	VISUAL CONTAM.				ODOR			LITHOLOGY	DEPTH	WELL CONSTRUCTION
				color, density, SOIL, admixtures, moisture, other notes, ORIGIN	NONE	STAIN	SHEEN	HEAVY	NONE	SLIGHT	MODERATE	STRONG		
0-4		60	0	SM: Silty sand. Brown. Roots. GW: Gravel. Dolomite. Crushed. Gray. SW: Sand with pea gravel. Fine. Gray to dark brown. SP: Sand, fine. Light red.									0	
4-8		70	0	SP: Sand as above. SP: Sand, fine. Gray, with some rust staining. Wet at 4.5' bgs. SP: Sand, fine. Dark gray with black streaks. SP: Sand, fine. Gray. Wet.									5	
8-10		50	0	SP: Sand, fine to medium. Uniform color. Dark gray. Some slight mottling.									10	
				Silty sand. Wet. Black. Organic odor. TD=10 feet Interval sampled for analysis: 4-8 feet.									15	

Site Id: RPGP-25



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/16/02

Date Completed: 07/18/02

Remarks:

Ground Elevation: 7.13'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-4		75	0.0 ppm	0-4'	Dry, light gray, little small gravel, FINE SAND, no odors or visual impacts			
4-8		100	0.0 ppm	4-5'	Dry, light gray, little small gravel, FINE SAND, no odors or visual impacts			
				5.8'	Wet, light gray, FINE SAND, sl. sewage odor at 5'-5.2'			
8-12		79	0.0 ppm	8'-12'	Wet, light gray, FINE SAND, well sorted, non-cohesive, no odors or visual impacts			
				8'3"-8'8"	MED to COARSE SAND, some small gravel			
				10				
				11'2"-11'4"	MED to COARSE SAND, some small gravel			
12-16		54	0.0 ppm	12-13.9'	Wet, light gray, FINE SAND, well sorted, non-cohesive, no odors or visual impacts			
				14-14.5'	Wet, light brown, little fine gravel, MED SAND, poorly sorted, non-cohesive, no odors or visual impacts			

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RGP-25



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/16/02

Date Completed: 07/18/02

Remarks:

Ground Elevation: 7.13'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
16-20		100	0.0 ppm	16-20'	Wet, light gray, FINE SAND, non-cohesive, well sorted. Layers of MED. SAND some small gravel at 16.3-16.9 and 17.7-18.0'. No visual impacts or odors.			-10
20-24		100	0.0 ppm	20-24'	Wet, light gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts.			
24-28		60	0.0 ppm	24-28'	Wet, light gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts.			
28-32		50	0.0 ppm	28-32'	Wet, olive gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts.			-20

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPGP-25



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/18/02

Date Completed: 07/18/02

Remarks:

Ground Elevation: 7.13'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
32-36	50	0.0 ppm		32-36'	Wet, olive gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts			
36-40	60	0.0 ppm		36-40'	Wet, olive gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts			
40-44	70	0.0 ppm		40-44'	Wet, olive gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts			
44-48	60	0.0 ppm		44-48'	Wet, olive gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts			

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPPG-25



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/16/02

Date Completed: 07/18/02

Remarks:

Ground Elevation: 7.13'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
48-52	45	0.0 ppm		48-52'	Wet, olive gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts			-40
52-56	45	0.0 ppm		52-56'	Wet, olive gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts			
56-60	100	0.5 ppm		56-57.8'	Wet, olive gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts			
				57.8-60'	MED SAND, shell fragments, poorly sorted, no odors or visual impacts			-50

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPGP-25



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/16/02

Date Completed: 07/18/02

Remarks:

Ground Elevation: 7.13'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Matt O'Neil

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
60-64		100	0.2 ppm		60-64' Wet, olive gray, FINE to MED SAND with shell fragments, poorly sorted, non-cohesive, no odors or visual impacts			
64-68		100	0.2 ppm		64-68' Wet, olive gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts			
68-72		100	0.5 ppm		68-72' Wet, olive gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts			
72-75		100	0.2 ppm		72-75' Wet, light gray, FINE SAND, non-cohesive, well sorted, no odors or visual impacts			
					END OF BORING AT 75'			

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPGP-26



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/19/02

Date Completed: 07/22/02

Remarks:

Ground Elevation: 7.10'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 40.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-4		75			0-0.5' Concrete			
					0.5'-1.5' Dark brown, FINE SAND, dry, some asphalt. No odors or visual impacts.			
			0.7 ppm		1.6'-2.6' Dry, tan, FINE SAND. No odors or visual impacts.			
4-8		75	0.8 ppm		4'-5' Moist, tan, FINE SAND, well sorted, non-cohesive. No odors or visual impacts.			
					5'-6' Moist, dark tan, FINE SAND with 1" FINE CLAY seam with iron oxide markings. No odors or visual impacts			
					6'-8' Moist, tan, FINE SAND well sorted non-cohesive. No odors or visual impacts.			0
8-12		87	1.0 ppm		8'-11'6" Dark tan, moist, FINE SAND. No stains or odors. Wet, tan FINE SAND some gravel at 9'2" and 11'2". Non-cohesive. No odors or visual impacts.			
				10				
12-16		75	0.8 ppm		12'-14'6" Wet, tan, FINE SAND, non-cohesive. No odors or visual impacts.			
					14'6" -14'11" Wet, tan, COARSE SAND and SMALL GRAVEL. No odors or visual impacts.			

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Page 1 of 3

Site Id: RGP-26



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/19/02

Date Completed: 07/22/02

Remarks:

Ground Elevation: 7.10'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 40.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
16-20	75	1.0 ppm			16'-17' Wet, tan, COARSE SAND and SMALL GRAVEL, and shell fragments, no odors or visual impacts.			-10
					17'-18' Wet, tan, FINE SAND, non-cohesive. no odors or visual impacts.			
					18'-18'5" Wet, tan, COARSE SAND and SMALL GRAVEL and shell fragments. No odors or visual impacts			
20-24	88	1.5 ppm		20	18'5"-19' Wet, tan, FINE SAND, non cohesive. No odors or visual impacts.			
					20'-24' Wet, tan, FINE SAND, non-cohesive. NO odors or visual impacts.			
24-28	65	0.8 ppm			24'-24'6" Wet, tan, FINE SAND, non-cohesive. No odors or visual impacts.			
					24'6"-24'10" Wet, tan, COARSE SAND and SMALL GRAVEL, no odors or visual impacts.			
					24'10"-26'6" Wet, tan grading to olive gray, FINE SAND, non-cohesive. No odors or visual impacts.			-20
28-32	100	0.8 ppm			28'-32' Wet, olive gray, FINE SAND, non-cohesive. No odors or visual impacts			

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tor Saturated



Solid Tor

Site Id: RGP-26



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/19/02

Date Completed: 07/22/02

Remarks:

Ground Elevation: 7.10'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 40.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PIU	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
32-36		100	0.8 ppm		32'-36' As Above			
36-40		75	0.3 ppm		36'-40' As Above			
				40	End of Boring at 40'			-30

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RGP-27



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/22/02

Date Completed: 07/23/02

Remarks:

Ground Elevation: 8.08'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PD	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-4		58	0.4 ppm		0'-4' Dry, tan, FINE SAND, non-representative. No odors or visual impacts.			
4-8		65	0.5 ppm		4'-8' Non-representative. Dry tan, last 2" dark gray. FINE SAND to MED SAND. Stained material with diesel-like odor in last 2'.			
8-12		100	49 ppm		8'-8'3" Wet, tan, FINE SAND. No visual impacts. Slight hydrogen sulfide odor. 8'3"-9' Wet, dark gray mottled with tan, FINE SAND, stained with slight diesel/Hydrogen sulfide odor. 9'-11'10" Wet, light gray with dark gray staining, FINE SAND. No visual product, moderate diesel/hydrogen sulfide odor.			0
12-16		88	93 ppm		11'10"-12' Wet, dark gray, FINE SAND, stained with moderate diesel/hydrogen sulfide odor. 12'-14' Wet, olive gray, MED SAND grading to FINE SAND. No visual impacts. Hydrogen sulfide like odor. 14'-15'5" Wet, olive gray, FINE SAND grading to MED SAND with shell fragments. Hydrocarbon odor, no visual impacts.			

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPGP-27



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/22/02

Date Completed: 07/23/02

Remarks:

Ground Elevation: 8.08'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
16-20	88	72 ppm			16'-20' Wet, olive gray, FINE and MED SAND with zone of COARSE SAND and shell fragments at 17'4" and 17'9". No visual impacts. Slight diesel like odor throughout			-10
20-24	100	14 ppm		20	20'-24' Wet, olive gray, FINE SAND grading to MED SAND. No visual impact except brownish gray at 21'6". Gravel and shell fragments at 21'6" and 22'4"-22'10" slight hydrogen sulfide odor			
24-28	88	3.0 ppm			24'-28' Wet, olive gray, FINE SAND, layer of COARSE SAND and SMALL GRAVEL at 25' to 26'. No visual impacts. Slight hydrogen sulfide odor.			
28-32	88	4.0 ppm			28'-32' Wet, olive gray, FINE SAND, dense. No visual impacts. Mod hydrogen sulfide odor.			-20

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPGP-27



GEI Consultants, Inc.

Client: Keyapan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/22/02

Date Completed: 07/23/02

Remarks:

Ground Elevation: 8.08'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
32-36		88	15 ppm		32'-36' Wet, olive gray, FINE SAND to MED SAND with shell fragments and SMALL GRAVEL at 33' - 33'7" No visual impacts, slight hydrogen sulfide odor.			
36-40		88	2.0 ppm		36'-40' Wet, olive gray, FINE SAND, non-cohesive, well sorted. No visual impacts or odors.			
40-44		54	7.9 ppm	40	40'-44' As Above			-30
44-48		54	2.6 ppm		44'-48' As Above			

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RGP-27



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/22/02

Date Completed: 07/23/02

Remarks:

Ground Elevation: 8.08'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
48-52	65	0.5 ppm		50	48'-52' As Above with lens of MED SAND and SMALL GRAVEL at 49'.			-40
52-56	88	1.1 ppm			52'-53'8" As Above			
					53'8"-54'10" Wet, olive gray, MED SAND with shell fragments, well sorted, dense. No odors or visual impacts.			
					54'10"-55'7" Wet, olive gray, FINE SAND, well sorted, dense. No odors or visual impacts.			
56-60	88	1.0 ppm			56'-60' Wet, Olive gray, MED SAND with SMALL GRAVEL and shell fragments, dense. No odors or visual impacts.			-50

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPGP-27



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.		Date Started: 07/22/02	
Project Number: 982482	Project Name: Rockaway Park	Ground Elevation: 8.08'	Date Completed: 07/23/02
Remarks:		Contractor: Zebra Environmental	Datum: Mean Sea Level
		Drilling Method: Geoprobe	Total Depth: 75.00'
		Logged By: Rachelle Noble	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
60-64		90	0.5 ppm		60'-64' Wet, olive gray, FINE SAND with shell fragments, dense. No odors or visual impacts.			
64-68		100	0.4 ppm		64'-65'10" Wet, dark brownish olive gray, VERY FINE SAND, cohesive. No odors or visual impacts.			
					65'10"-66'1" As Above with slight organic like odor. 66'1"-68' Wet, dark brown, VERY FINE SAND, cohesive, as above with no odors or visual impacts.			
68-72		100	0.6 ppm		68'-72' Wet, dark brown, FINE SAND as above, well sorted. No odors or visual impacts.			-60
				70				
72-76		75	0.3 ppm		72'-75' Wet, dark brown, VERY FINE SAND, well sorted, cohesive, no odors or visual impacts.			
					END OF BORING AT 75'.			

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPGP-28



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/24/02

Date Completed: 07/24/02

Remarks: Hole was abandoned and offset for RPGP-28A.

Ground Elevation: 9.29'

Datum: Mean Sea Level

Contractor: Zebra Environmental

Total Depth: 12.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-4		0	3.5 ppm	0'-4'	Non representative, dry, light brown grading to light gray, FINE SAND. No odors or visual impacts.			
4-8	88			4'-4'6"	Dry, tan, FINE SAND. No odors or visual impacts.			
				4'6"-5'	Dry, dark tan, FINE SAND. No odors or visual impacts.			
				5'-6'5"	Dry grading to moist, light gray/white grading to grayish brown, FINE SAND. No visual impacts or odors.			
				6'5"-6'10"	Moist, dark gray, FINE SAND, material is stained and has slight purifier odor.			
8-12	75			6'10"-7'	Wet, dark brown, FINE SAND, no staining, slight purifier like odor.			
				8'-10'	Non-representative.			0
				10				
					END OF BORING AT 12'.			

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPGP-28A



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/24/02

Date Completed: 07/25/02

Remarks:

Ground Elevation: 9.29'

Datum:

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-4		65	0.9 ppm		0-2" Concrete 2"-8" Dry. Sidewalk. Subbase - Fill-Gravel + sand 8"-1'2" Dry. White/ light tan FINE SAND. Disturbed. 1'2"-1'4" No stains or visual impacts or odors. 1'4"-2'4" Dry. Black. dense purifier material. No wood chips present. Modified purifier- like odor. Dry. Lt tan w/ some purple + orange molting. FINE SAND. No Stains, slight purifier - like odor.			
4-8		67	2.3 ppm		4'-4'5" Dry. Lt tan. FINE SAND, fill, 4'5"-4'10" No stains, slight purifier like odor. 4'10"-5'1" Dry, brown, fill, FINE SAND and GRAVEL, loose, No stains, slight purifier like odor. Dry. Lt tan. FINE SAND. loose, No stains. Slight Purifier like odor. 5'1"-5'8" Some purple and orange molting. Purple grading to greenish gray. Wet. FINE SAND. Well sorted material. Stained, slight purifier-like odor			
8-12		100	0.6 ppm		8'-9' Wet. Lt tan grading to Dk brown. FINE SAND is tan, gravel is dk brown. Fill type material. Slight purifier-like odor. No stains. 9'-10'5" Wet. Greenish gray mottled, FINE SAND. Well sorted molting could be due to staining. Slight purifier-like odor.			
				10	10'5"-11' Wet. Lt brown. FINE SAND. Well sorted. No stains. Slight purifier-like odor. 11'-12' Wet. Olive gray grading to light brown. FINE SAND. Well sorted. No stains. Slight purifier-like odor.			
12-16		75	0.6 ppm		12'-12'8" Wet. Lt brown. MEDIUM AND COARSE SAND. Poorly sorted. Loose. No stains. Slight purifier-like odor. 12'8"-15' Wet. Lt brown grading to Lt grayish white. FINE SAND. Well Sorted. No Stains. Slight purifier-like odor.			

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RGP-28A



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/24/02

Date Completed: 07/25/02

Remarks:

Ground Elevation: 9.29'

Datum:

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
16-20		70	0.6 ppm		16'7"-20' Wet. Lt brown grading to light grayish/brown. FINE SAND W/ ZONES OF MD SAND @ 16'7"-16'9", 17'-17'4", and 18'4"-18'10". Dense. Lt brown color throughout geoprobe hole could be due to oxidation. No stains. Very slight odor, not distinct enough to identify.			-10
20-24		70	0.7 ppm	20	20'-20'9" Wet. Lt brown, COARSE GRAVEL. Poorly sorted. Dense. No Stains. Slight fuel oil odor. 20'9"-21'5" Wet. Brown and black, COARSE SAND AND GRAVEL. Poorly graded w/ shell fragments. No stains. Slight fuel oil odor. 21'5"-22'9" Wet. Lt gray COARSE SAND. Dense. Poorly sorted. No stains. Slight fuel oil odor.			
24-28		80	0.6 ppm		24'-28' Wet. Lt gray grading to reddish tan/greenish gray. FINE SAND. Well sorted. No stains. No odors.			
28-32		62	1.0 ppm		28'-32' Wet. Lt gray grading to tan. FINE SAND. Well sorted, dense. No stains or odors.			-20

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPGP-28A



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/24/02

Date Completed: 07/25/02

Remarks:

Ground Elevation: 9.29'

Datum:

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
32-36	63	1.0 ppm		32'-33'6"	Wet. Tan. FINE SAND. Well sorted. Dense. No stains. No odors.			
				33'6"-34'	Wet. Lt gray w/ black staining @ 33'9".			
				34'-34'6"	MED SAND. Well sorted. Slight fuel oil-like odor. Wet. Lt brown grading to Dk brown. MD SAND W/ GRAVEL AND SHELL FRAGMENTS. Dk brown could be staining. Slight fuel oil-like odor.			
36-40	50	0.9 ppm		36'-40'	Wet. Lt gray grading to olive gray. FINE SAND. Well sorted. Dense. Black staining @ 37'2" - could be natural, no odor associated w/ stain. Slight purifier-like odor @ top 6'.			
40-44	75	1.0 ppm		40'-44'	Wet. Olive gray. FINE SAND. Well sorted. No odors or visual impacts.			-30
44-48	67	0.8 ppm		44'-48'	Wet. Olive gray. FINE SAND. Well sorted. Natural black staining @ 45'4" and 45'8". Staining is little bands. No impacts or odors. Small black clay seam at 45'6".			

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPPG-28A



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/24/02

Date Completed: 07/25/02

Remarks:

Ground Elevation: 9.29'

Datum:

Contractor: Zebra Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PTD	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
48-52		100	0.9 ppm	48'-52'	Wet. Olive gray. FINE SAND. Well sorted.			-40
52-56		25	0.9 ppm	52'-56'	Wet. Olive gray. FINE SAND. Well sorted. No stains or odors.			
56-60		25	0.5 ppm	56'-60'	Wet. Olive gray. MD SAND W/ GRAVEL and Shell fragments. Dense. No odors or stains. Recovery low due to wetness.			-50

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RGP-28A



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 07/24/02

Date Completed: 07/25/02

Remarks:

Ground Elevation: 9.29'

Datum:

Contractor: Zebro Environmental

Total Depth: 75.00'

Drilling Method: Geoprobe

Logged By: Rachelle Noble

Certified By: Matt O'Neill

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
60-64		88	0.5 ppm		60'-64' Wet. Olive gray. MD SAND W/ GRAVEL and Shell fragments. Dense. No odors or stains. Recovery low due to wetness.			
64-68		75	0.2 ppm		64'-68' Wet. Lt brown/tan. FINE SAND. MD Dense Non-cohesive. Well sorted. No stains. No odors.			
68-72		100	0.3 ppm		68'-72' Wet. Lt brown/tan. FINE SAND. MD Dense Non-cohesive. Well sorted. Band of black mica @ 71' Well sorted. No odors.			
				70				-60
72-75		75	0.3 ppm		72'-75' Wet. Lt brown/tan. FINE SAND. MD Dense Non-cohesive. Well sorted. At 74' 10" a 1' layer of black organic-like material. More fines. No odors.			
					END OF BORING AT 75'			

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar



**Dvirka
and
Bartilucci**
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RTP-01

Location: Rockaway Park

Purpose: User Defined

Date(s): 12/07/99 - 12/07/99

Total Depth: 8.00'

Remarks: Test pit dimensions (w x l x d) 11' x 24' x 8'.
Photos 58-63.

Elevation: 8.70'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Backhoe excavation

Contractor: Action Environmental

Borehole Dia.: 0.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
			0.0 ppm 0.0 ppm	0.0 0.0		Black-brown, sand & TOPSOIL/FILL mix, w/some tar & brick Gray, fine-coarse SAND, moist, wet at 7.5-8'
5						
1						
6						
7						
8						

Bottom of test pit - 8 ft.

Site Id: RPTP-02

Location: Rockaway Park

Purpose: User Defined

Date(s): 12/06/99 - 12/06/99

Total Depth: 7.50'

Remarks: Test pit dimensions (w x l x d) 10-15' x 23' x 7.5'.

Elevation: 7.73'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Backhoe excavation

Contractor: Action Environmental

Borehole Dia.: 0.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
			0.0 ppm 0.0 ppm	0.0 0.0		TOPSOIL/FILL, w/tar Orange-brown, fine-coarse sandy FILL, w/some brick & cobblestone, loose, dry
5						
10						Ground water seeping into bottom of test pit at 7.5'
15						
20						
25						



**Dvirka
and
Bartilucci**
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RTP-03

Location: Rackaway Park

Purpose: Test Pit

Date(s): 12/07/99 - 12/07/99

Total Depth: 10.00'

Remarks: Test pit dimensions (w x l x d) 6' x 17' x 10'.
Photos 44-48. Fill unit softer than fill
encountered in RTP-05 and RTP-06. Coal tar
seeps at ground surface.

Elevation: 9.07'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Backhoe excavation

Contractor: Action Environmental

Borehole Dia.: 0.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
			0.0 ppm 0.0 ppm	0.0 0.0		Black FILL, w/soft coal Gray-orange brown, fine-coarse SAND, w/trace gravel, moist, loose, wet at 8'
5						Bottom of test pit - 10 ft.
10						
5						
3						
3						

Site Id: RPTP-04

Location: Rockaway Park

Purpose: Test Pit

Date(s): 12/06/99 - 12/06/99

Total Depth: 10.00'

Remarks: Test pit dimensions (w x l x d) 10' x 20' x 10'.

Elevation: 7.87'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Backhoe excavation

Contractor: Action Environmental

Borehole Dia.: 0.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
			0.0 ppm	0.2		TOPSOIL/FILL, w/tar
			0.0 ppm	0.0		Gray, fine-medium SAND, loose, moist, no odors
5						Orange-brown mottled w/gray, fine-medium SAND, loose, moist,
10						Ground water seepage at 8'
15						Bottom of test pit - 10 ft.
20						
25						



**Dvirka
and
Bartilucci**
CONSULTING ENGINEERS
ADIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RPTP-05

Location: Rockaway Park

Purpose: Test Pit

Date(s): 12/07/99 - 12/07/99

Total Depth: 10.00'

Remarks: Test pit dimensions (w x l x d) 6' x 16' x 10'.
Photos 49-57.

Elevation: 8.54'

Datum: Mean Sea Level

Logged By: John Schofer

Drilling Method: Backhoe excavation

Contractor: Action Environmental

Borehole Dia.: 0.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
			25 ppm 0.0 ppm	0.0 0.0		TOPSOIL/FILL, w/solidified tar, slight odor Gray-orange brown, fine-coarse SAND, loose
5						
10						Ground water seeping into test pit at 8', w/sheen and odor
15						Bottom of test pit - 10 ft.
20						
25						



Site Id: RPTP-06

Location: Rockaway Park

Purpose: User Defined

Date(s): 12/07/99 - 12/07/99

Total Depth: 1.50'

Remarks: Stopped digging at 1.5' due to concern of
breaking bucket teeth.

Elevation: 9.18'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Backhoe excavation

Contractor: Action Environmental

Borehole Dia.: 0.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
			4 ppm		Brown TOPSOIL/FILL with solidified tar at 0.5-1.5' Bottom of test pit - 1.5 ft.
5					
10					
15					
20					
25					



Site Id: RPTP-07

Location: Rockaway Park

Purpose: Test Pit

Date(s): 12/08/99 - 12/08/99

Total Depth: 7.00'

Remarks: Test pit dimensions (w x l x d) 12' x 19' x 7'.
Bulkhead encountered at test pit trending in
north-south orientation. No samples collected
for analysis.

Elevation: 6.12'

Datum: Mean Sea Level

Logged By: Tom Fox

Drilling Method: Backhoe excavation

Contractor: Action Environmental

Borehole Dia.: 0.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
			20 ppm 50 ppm		White-yellow, coarse sands and black clinker & gravel FILL, heavy MGP-like odor, loose, dry-moist Black, coarse sands mixed w/osh and clinker FILL, heavy tar/MGP-like odor, loose at 6'
5			50 ppm		Bottom of test pit- 7 ft.
10					
15					
20					
25					



Site Id: RPTP-08

Location: Rockaway Park

Purpose: Test Pit

Date(s): 12/08/99 - 12/08/99

Total Depth: 6.00'

Remarks: Test pit dimensions (w x l x d) 8' x 22' x 6'.

Elevation: 7.13'

Datum: Mean Sea Level

Logged By: Tom Fox

Drilling Method: Backhoe excavation

Contractor: Action Environmental

Borehole Dia.: 0.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
			0.0 ppm		White-yellow, med-coarse sand FILL, loose, dry
			2.5 ppm		Brown-black, silty fine sand FILL, slight MGP-like odor, loose, moist
5					Blk, med-coarse sand & gravel FILL, w/coal clinker, str MGP-like odor, tar mixed w/sand, wet at ~6'
					Bottom of test pit - 6 ft.
10					
15					
20					
25					



GEI Consultants, Inc.

ATLANTIC
ENVIRONMENTAL DIVISION

188 Norwich Avenue
P.O. Box 297
Colchester, CT 06415

Ph: (860) 537-0751
Fax: (860) 537-6347

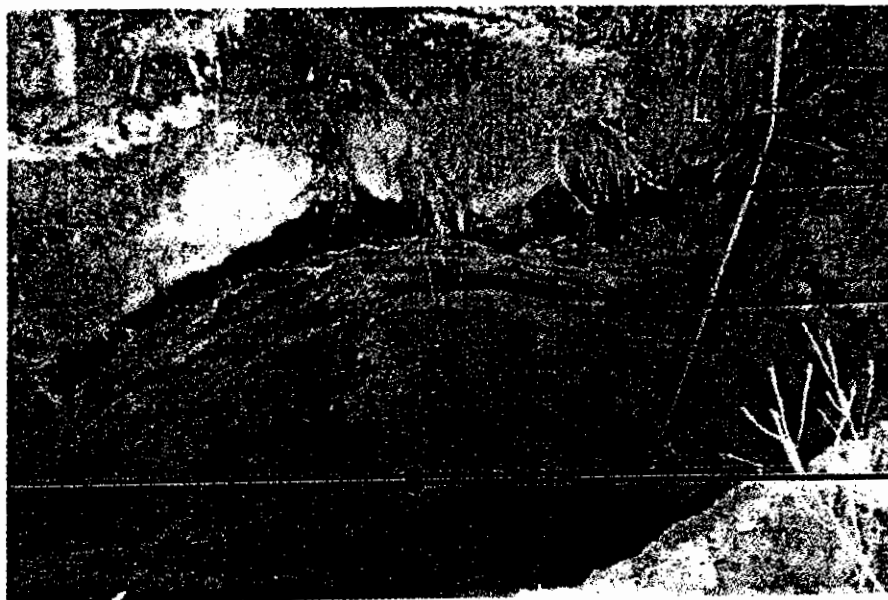
TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 98318-1003 LOCAL "CALL BEFORE YOU DIG" CASE NO.: 286C211
TEST PIT NUMBER: TP-1 OBSERVER: John Ripp
GENERAL LOCATION AND/OR PURPOSE: North- ASSISTANT: Michelle Litteken
west corner outside substation fence. OTHERS: _____
DATE: October 22, 1998 CONTRACTOR: GEI Consultants, Inc./R. Prentiss
TIME OPENED: 0920 TIME CLOSED: 1000 EQUIPMENT: John Deere 310

IN THE SPACE PROVIDED BELOW, NOTE WHAT WAS FOUND IN THE TEST PIT AND SKETCH DIMENSIONS, SOIL TYPES, AND WASTE. NOTE ANY BURIED METAL OBJECTS.

NORTH

SOUTH



Surface: grey fine sand

0.5 ft.: dry black tar layer with bricks

1.5 ft.: iron-stained fine to medium sand (PID - 2 ppm)

8 ft.: light grey fine sand (PID - 3 ppm)

VIDEO DOCUMENTED: YES X NO _____
PHOTOGRAPHED: YES X NO _____
PIEZOMETER NO. USED IN BACKFILL: No
DEPTH TO WATER: 8.5 FT

NAPL SEEPAGE: YES _____ NO _____
SAMPLES: YES X NO _____
QUANTITY: _____



GEI Consultants, Inc.

ATLANTIC
ENVIRONMENTAL DIVISION

188 Norwich Avenue
P.O. Box 297
Colchester, CT 06415

Ph: (860) 537-0751
Fax: (860) 537-6347

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 98318-1003 LOCAL "CALL BEFORE YOU DIG" CASE NO.: 286C211
TEST PIT NUMBER: TP-2 OBSERVER: John Ripp
GENERAL LOCATION AND/OR PURPOSE: West ASSISTANT: _____
of substation fence. OTHERS: Tom Campbell
DATE: October 22, 1998 CONTRACTOR: GEI Consultants, Inc./R. Prentiss
TIME OPENED: 1015 TIME CLOSED: 1110 EQUIPMENT: John Deere 310

IN THE SPACE PROVIDED BELOW, NOTE WHAT WAS FOUND IN THE TEST PIT AND SKETCH DIMENSIONS, SOIL TYPES, AND WASTE. NOTE ANY BURIED METAL OBJECTS.

SOUTH

NORTH



Surface

Light gray sand with roots

1 ft.: black streaky fine sand with clinker and brick and weathered tar

4 ft.: streaky black gray and iron stained fine sand, no odors

7 ft.: (PID - 2.5 ppm) gray fine sand with strong odors (naphthalene)

9 ft.: black oily sand with timber (PID - 65 ppm)

VIDEO DOCUMENTED: YES X NO _____
PHOTOGRAPHED: YES X NO _____
PIEZOMETER NO. USED IN BACKFILL: No
DEPTH TO WATER: 8.0 FT

NAPL SEEPAGE: YES X NO _____
SAMPLES: YES X NO _____
QUANTITY: _____



GEI Consultants, Inc.

ATLANTIC
ENVIRONMENTAL DIVISION

188 Norwich Avenue
P.O. Box 297
Colchester, CT 06415

Ph: (860) 537-0751
Fax: (860) 537-6347

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 98318-1003 LOCAL "CALL BEFORE YOU DIG" CASE NO.: 286C211
TEST PIT NUMBER: TP-2A OBSERVER: John Ripp
GENERAL LOCATION AND/OR PURPOSE: West ASSISTANT: _____
of substation fence. OTHERS: _____
DATE: October 21, 1998 CONTRACTOR: GEI Consultants, Inc./R. Prentiss
TIME OPENED: 1445 TIME CLOSED: 1505 EQUIPMENT: John Deere 310

IN THE SPACE PROVIDED BELOW, NOTE WHAT WAS FOUND IN THE TEST PIT AND SKETCH DIMENSIONS, SOIL TYPES, AND WASTE. NOTE ANY BURIED METAL OBJECTS.

EAST

WEST



Surface: organic topsoil, roots
0.5 ft.: red and orange medium to fine sand; no odors to 6.5 ft.
4 ft.: (PID - 10.5 ppm)
6.5 ft.: (PID - 7.1 ppm)
7.5-8 ft.: black clinker and ash; water and oil saturated (PID - 186 ppm)

VIDEO DOCUMENTED: YES X NO _____
PHOTOGRAPHED: YES X NO _____
PIEZOMETER NO. USED IN BACKFILL: No
DEPTH TO WATER: 7.25 FT

NAPL SEEPAGE: YES X NO _____
SAMPLES: YES _____ NO X
QUANTITY: _____



GEI Consultants, Inc.

ATLANTIC
ENVIRONMENTAL DIVISION

188 Norwich Avenue
P.O. Box 297
Colchester, CT 06415

Ph: (860) 537-0751
Fax: (860) 537-6347

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 98318-1003 LOCAL "CALL BEFORE YOU DIG" CASE NO.: 286C211
TEST PIT NUMBER: TP-2B OBSERVER: John Ripp
GENERAL LOCATION AND/OR PURPOSE: West ASSISTANT: _____
of substation fence. OTHERS: Tom Campbell
DATE: October 21, 1998 CONTRACTOR: GEI Consultants, Inc./R. Prentiss
TIME OPENED: 1515 TIME CLOSED: 1535 EQUIPMENT: John Deere 310

IN THE SPACE PROVIDED BELOW, NOTE WHAT WAS FOUND IN THE TEST PIT AND SKETCH DIMENSIONS, SOIL TYPES, AND WASTE. NOTE ANY BURIED METAL OBJECTS.

SOUTH

NORTH



Surface: black soil and tar

0.5 ft.: layered stained sands

6.5 ft.: contact between oily clinker and ash starting at 2 ft. below surface and sandy fill to north (4" x 12" timber found at contact)

Oily clinker and ash between 2 and 6.5 feet below surface

NOTE: Raining, PID reading discontinued.

VIDEO DOCUMENTED: YES X NO _____
PHOTOGRAPHED: YES X NO _____
PIEZOMETER NO. USED IN BACKFILL: No
DEPTH TO WATER: _____ FT

NAPL SEEPAGE: YES X NO _____
SAMPLES: YES _____ NO X
QUANTITY: _____



GEI Consultants, Inc.

ATLANTIC
ENVIRONMENTAL DIVISION

188 Norwich Avenue
P.O. Box 297
Colchester, CT 06415

Ph: (860) 537-0751
Fax: (860) 537-6347

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 98318-1003 LOCAL "CALL BEFORE YOU DIG" CASE NO.: 286C211
TEST PIT NUMBER: TP-3 OBSERVER: John Ripp
GENERAL LOCATION AND/OR PURPOSE: Outside ASSISTANT: _____
southwest corner of substation. OTHERS: _____
DATE: October 21, 1998 CONTRACTOR: GEI Consultants, Inc./R. Prentiss
TIME OPENED: 1400 TIME CLOSED: 1435 EQUIPMENT: John Deere 310

IN THE SPACE PROVIDED BELOW, NOTE WHAT WAS FOUND IN THE TEST PIT AND SKETCH DIMENSIONS, SOIL TYPES, AND WASTE. NOTE ANY BURIED METAL OBJECTS.

NORTH

SOUTH



Surface: weathered tar layer
0.5 ft.: (PID-7 ppm); dry ash and clinker; strong naphthalene odor
2 ft.: 1-inch lead pipe
2.5 ft.: (PID-19.5 ppm)
6 ft.: ash and clinker (from surface table); NAPL at water table surface; (PID-644 ppm)

VIDEO DOCUMENTED: YES X NO _____
PHOTOGRAPHED: YES X NO _____
PIEZOMETER NO. USED IN BACKFILL: No
DEPTH TO WATER: 6 FT

NAPL SEEPAGE: YES X NO _____
SAMPLES: YES _____ NO _____
QUANTITY: _____



GEI Consultants, Inc.

ATLANTIC
ENVIRONMENTAL DIVISION

188 Norwich Avenue
P.O. Box 297
Colchester, CT 06415

Ph: (860) 537-0751
Fax: (860) 537-6347

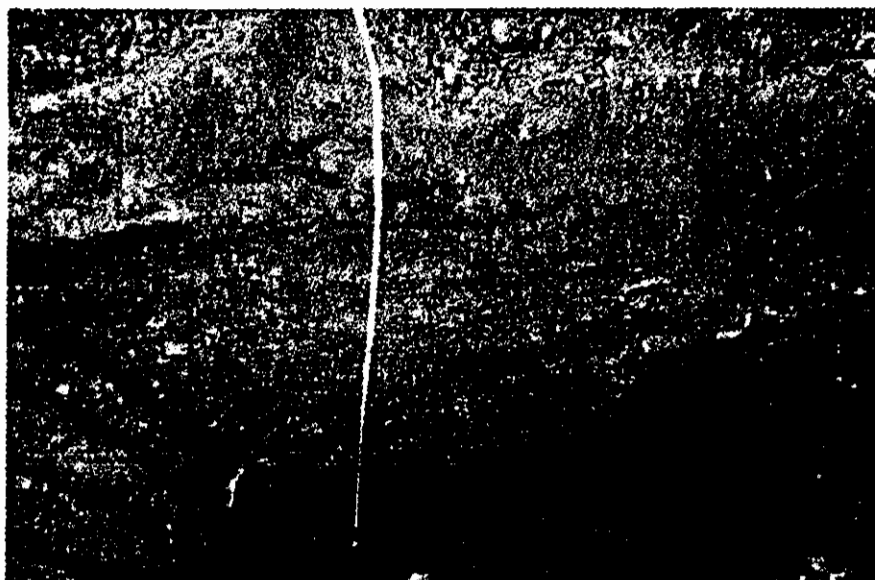
TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 98318-1003 LOCAL "CALL BEFORE YOU DIG" CASE NO.: 286C211
TEST PIT NUMBER: TP-4 OBSERVER: John Ripp
GENERAL LOCATION AND/OR PURPOSE: South ASSISTANT: Michelle Litteken
of substation fence OTHERS: Tom Campbell, M. Walsh
DATE: October 21, 1998 CONTRACTOR: GEI Consultants, Inc./R. Prentiss
TIME OPENED: 0900 TIME CLOSED: 1005 EQUIPMENT: John Deere 310

IN THE SPACE PROVIDED BELOW, NOTE WHAT WAS FOUND IN THE TEST PIT AND SKETCH DIMENSIONS, SOIL TYPES, AND WASTE. NOTE ANY BURIED METAL OBJECTS.

EAST

WEST



Surface: weathered tar
0.5 ft.: fill with bricks, wood, gravel clinker, bottom yellow material (sulfur)
4 ft.: same as above
6 ft.: (PID-13 ppm); coarse gravel fill with coal and ash
7 ft.: (PID-27 ppm)

NOTE: Water table had slight oily sheen and naphthalene odor.

VIDEO DOCUMENTED: YES X NO
PHOTOGRAPHED: YES X NO
PIEZOMETER NO. USED IN BACKFILL: No
DEPTH TO WATER: 6 FT

NAPL SEEPAGE: YES NO X
SAMPLES: YES X NO
QUANTITY:



GEI Consultants, Inc.

ATLANTIC
ENVIRONMENTAL DIVISION

188 Norwich Avenue
P.O. Box 297
Colchester, CT 06415

Ph: (860) 537-0751
Fax: (860) 537-6347

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 98318-1003 LOCAL "CALL BEFORE YOU DIG" CASE NO.: 286C211
TEST PIT NUMBER: TP-4A OBSERVER: John Ripp
GENERAL LOCATION AND/OR PURPOSE: South ASSISTANT: Michelle Litteken
of substation fence. OTHERS: Tom Campbell, M. Walsh
DATE: October 21, 1998 CONTRACTOR: GEI Consultants, Inc./R. Prentiss
TIME OPENED: 1200 TIME CLOSED: 1245 EQUIPMENT: John Deere 310

IN THE SPACE PROVIDED BELOW, NOTE WHAT WAS FOUND IN THE TEST PIT AND SKETCH DIMENSIONS, SOIL TYPES, AND WASTE. NOTE ANY BURIED METAL OBJECTS.

WEST

EAST



● Surface: gravelly, black, brittle weathered tar
1 ft.: mottled orange/gray fine medium sand; fill;
2 ft.: (PID-7 ppm)
3 ft.: black clinker, ash, strong MGP odor
6 ft.: NAPL at water table; (PID-60 ppm)

NOTE: This test pit is in a source area.

VIDEO DOCUMENTED: YES X NO
PHOTOGRAPHED: YES X NO
PIEZOMETER NO. USED IN BACKFILL: No
DEPTH TO WATER: 6 FT

NAPL SEEPAGE: YES X NO
SAMPLES: YES NO X
QUANTITY:



GEI Consultants, Inc.

ATLANTIC
ENVIRONMENTAL DIVISION

188 Norwich Avenue
P.O. Box 297
Colchester, CT 06415

Ph: (860) 537-0751
Fax: (860) 537-6347

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 98318-1003 LOCAL "CALL BEFORE YOU DIG" CASE NO.: 286C211
TEST PIT NUMBER: TP-5 OBSERVER: John Ripp
GENERAL LOCATION AND/OR PURPOSE: South ASSISTANT: _____
of substation fence. OTHERS: Tom Campbell
DATE: October 21, 1998 CONTRACTOR: GEI Consultants, Inc./R. Prentiss
TIME OPENED: 1110 TIME CLOSED: 1150 EQUIPMENT: John Deere 310

IN THE SPACE PROVIDED BELOW, NOTE WHAT WAS FOUND IN THE TEST PIT AND SKETCH DIMENSIONS, SOIL TYPES, AND WASTE. NOTE ANY BURIED METAL OBJECTS.

EAST

WEST



Surface: black fill, clinker, ash, bricks, silty sand
1 ft.: gray fine medium sand
3 ft.: (PID-2 ppm)
3.5 ft.: 2 ft. wide concrete wall; gray fine to medium sand
5 ft.: gray fine to medium sand; (PID-4 ppm)
6 ft.

NOTE: On western edge of pit, uncovered a steel pipe 2 inches in diameter, 1 foot below surface.

VIDEO DOCUMENTED: YES X NO _____
PHOTOGRAPHED: YES X NO _____
PIEZOMETER NO. USED IN BACKFILL: No
DEPTH TO WATER: ~6 FT

NAPL SEEPAGE: YES _____ NO X
SAMPLES: YES _____ NO X
QUANTITY: _____



GEI Consultants, Inc.

ATLANTIC
ENVIRONMENTAL DIVISION

188 Norwich Avenue
P.O. Box 297
Colchester, CT 06415

Ph: (860) 537-0751
Fax: (860) 537-6347

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 98318-1003 LOCAL "CALL BEFORE YOU DIG" CASE NO.: 286C211
TEST PIT NUMBER: TP-6 OBSERVER: John Ripp
GENERAL LOCATION AND/OR PURPOSE: South ASSISTANT: Michelle Litteken
of gate into control house. OTHERS: Tom Campbell, Mike Walsh
DATE: October 21, 1998 CONTRACTOR: GEI Consultants, Inc./R. Prentiss
TIME OPENED: 1035 TIME CLOSED: 1100 EQUIPMENT: John Deere 310

IN THE SPACE PROVIDED BELOW, NOTE WHAT WAS FOUND IN THE TEST PIT AND SKETCH DIMENSIONS, SOIL TYPES, AND WASTE. NOTE ANY BURIED METAL OBJECTS.

EAST

WEST



Surface: black, organic
clinker, ash,
roots; no odor
1 ft.: pale yellow to
fine to medium
sand, shell
fragments, trace
of gravel; no odor
5 ft.: medium to gray
fine to medium
sand with gravel
and shells; (PID-
2.5 ppm)
7 ft.: (PID-1 ppm)

NOTE: Black material at base of pit is surface soil that caved in.

VIDEO DOCUMENTED: YES X NO
PHOTOGRAPHED: YES X NO
PIEZOMETER NO. USED IN BACKFILL: No
DEPTH TO WATER: ~7 FT

NAPL SEEPAGE: YES NO X
SAMPLES: YES NO X
QUANTITY:



GEI Consultants, Inc.

ATLANTIC
ENVIRONMENTAL DIVISION

188 Norwich Avenue
P.O. Box 297
Colchester, CT 06415

Ph: (860) 537-0751
Fax: (860) 537-6347

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 98318-1003 LOCAL "CALL BEFORE YOU DIG" CASE NO.: 286C211
TEST PIT NUMBER: TP-7 OBSERVER: John Ripp
GENERAL LOCATION AND/OR PURPOSE: 66 feet ASSISTANT: _____
west of substation fence near road. OTHERS: Tom Campbell
DATE: October 22, 1998 CONTRACTOR: GEI Consultants, Inc./R. Prentiss
TIME OPENED: 1120 TIME CLOSED: 1155 EQUIPMENT: John Deere 310

IN THE SPACE PROVIDED BELOW, NOTE WHAT WAS FOUND IN THE TEST PIT AND SKETCH DIMENSIONS, SOIL TYPES, AND WASTE. NOTE ANY BURIED METAL OBJECTS.

PHOTO NOT AVAILABLE

1 ft.: black very fine silty sand layer appears to look like "lamp black" and coal
1.5 ft.: orange/red stained fine to medium sand; (PID-<1 ppm)
2.5 ft.: large gravelly clinker and coal; (PID-<1 ppm)
5 ft.: iron stained fine to medium sand
6.5 ft.: red clinker, oily sheen, water saturated; (PID-7 ppm)
NOTE: Sample collected at 0-1 feet as surface soil.

VIDEO DOCUMENTED: YES X NO _____
PHOTOGRAPHED: YES X NO _____
PIEZOMETER NO. USED IN BACKFILL: No
DEPTH TO WATER: 6.5 FT

NAPL SEEPAGE: YES _____ NO X
SAMPLES: YES X NO _____
QUANTITY: _____



GEI Consultants, Inc.

ATLANTIC
ENVIRONMENTAL DIVISION

188 Norwich Avenue
P.O. Box 297
Colchester, CT 06415

Ph: (860) 537-0751
Fax: (860) 537-6347

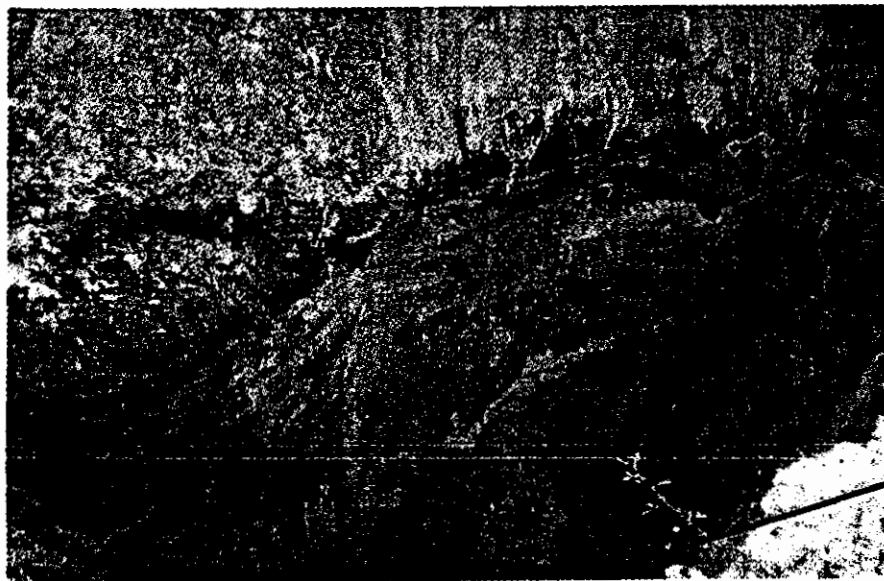
TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 98318-1003 LOCAL "CALL BEFORE YOU DIG" CASE NO.: 286C211
TEST PIT NUMBER: TP-8 OBSERVER: John Ripp
GENERAL LOCATION AND/OR PURPOSE: 65 feet ASSISTANT: _____
west of substation fence near road. OTHERS: Agnes Antonian
DATE: October 22, 1998 CONTRACTOR: GEI Consultants, Inc./R. Prentiss
TIME OPENED: 1320 TIME CLOSED: _____ EQUIPMENT: John Deere 310

IN THE SPACE PROVIDED BELOW, NOTE WHAT WAS FOUND IN THE TEST PIT AND SKETCH DIMENSIONS, SOIL TYPES, AND WASTE. NOTE ANY BURIED METAL OBJECTS.

EAST

WEST



Surface: black asphalt
0.5 ft.: red mottled fine to medium sand
6.5 ft.: (PID-13 ppm)
7 ft.
7.5 ft.: gray/black fine to medium sand; naphthalene odor; (PID-65 ppm)
8 ft.: black stained sand; (PID-100 ppm)

VIDEO DOCUMENTED: YES X NO _____
PHOTOGRAPHED: YES X NO _____
PIEZOMETER NO. USED IN BACKFILL: No
DEPTH TO WATER: 8 FT

NAPL SEEPAGE: YES X NO _____
SAMPLES: YES _____ NO X
QUANTITY: _____

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

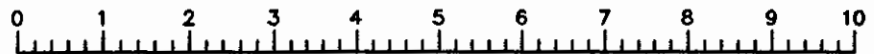
PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-01
GENERAL LOCATION AND/OR PURPOSE: Northern portion of
storage area.
DATE OCTOBER 26, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426

S

N

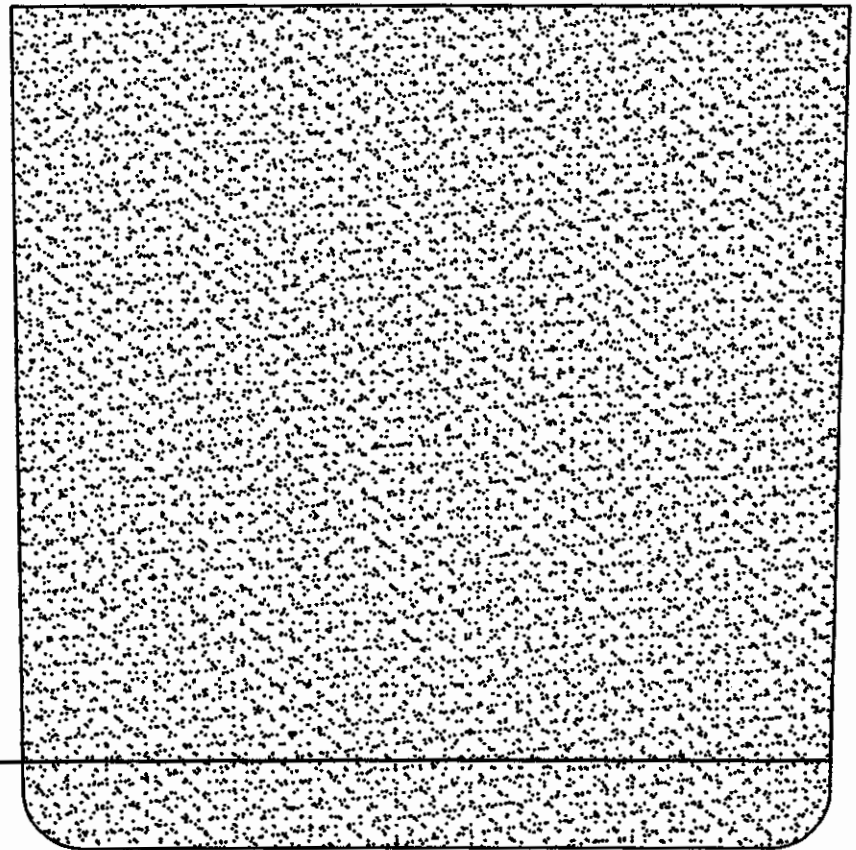
Length (feet)



SOIL DESCRIPTION

0-9' Light brown/tan fine to medium sand, no odor
0 ppm

Depth (feet)
0
1
2
3
4
5
6
7
8
9
10



9-10' Light gray fine-medium sand, trace sea shell, slight odor (perhaps natural organic odor), wet

ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 9 FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES X NO _____
SAMPLE I.D.: RPTP-01 (9-10')

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02

OBSERVER: R. COONEY

TEST PIT NUMBER: TP-02

ASSISTANT: _____

GENERAL LOCATION AND/OR PURPOSE: Astride former oxide

OTHERS: _____

enclosure and former ash storage area

BACKHOE OPERATOR: B. PRENTISS

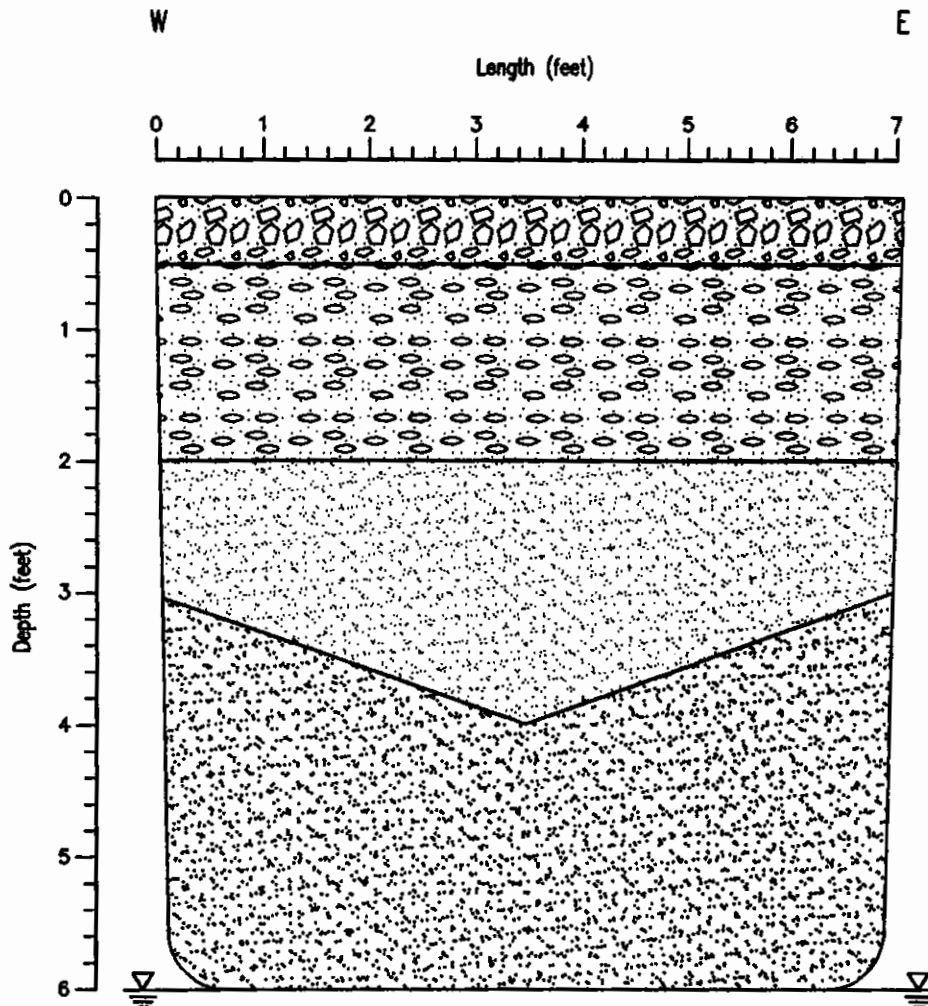
DATE: OCTOBER 24, 1995

EQUIPMENT: CATERPILLAR 426

TIME OPENED: _____ TIME CLOSED: _____

SOIL DESCRIPTION

0-0.5' Sand/gravel top fill. 0 ppm

0.5-2' Grey slag and clinker (cobble sized) some ash, little sand
slight naphthalene odor. 0 ppm2-3' Light brown/yellow sand, little
grey staining, little ash, little
clinker, slight naphthalene
odor. 0 ppm3-6' Brown with grey stain, sand,
some clinker, some slag,
slight naphthalene odor.
250 ppm

ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO ☒PHOTOGRAPHED: YES _____ NO ☒

PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 6 FT.

NAPL SEEPAGE: YES _____ NO ☒ANALYTICAL SAMPLES: YES _____ NO ☒

SAMPLE I.D.: NO SAMPLE

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

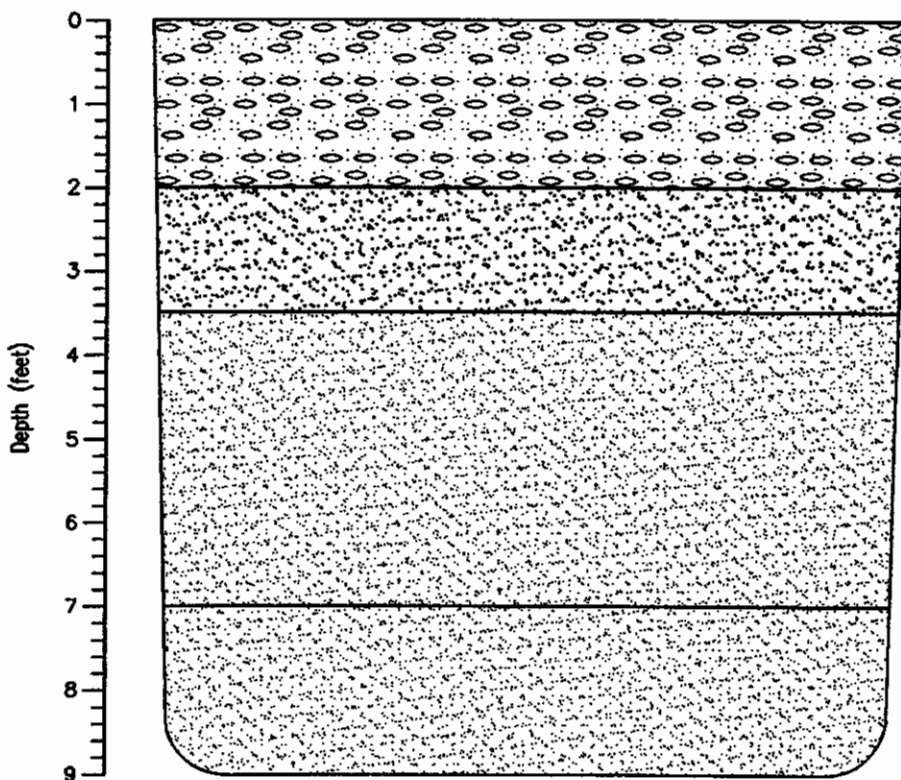
PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-03
GENERAL LOCATION AND/OR PURPOSE: South of former drip tank
DATE: OCTOBER 26, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426



SOIL DESCRIPTION

- 0-2' Gray/brown clinker and sand, no odor
- 2-3.5' Orange/light brown tan, fine-medium sand, fill
- 3.5-7' Light brown fine to medium (native) sand, little roots in top 0.5'
- 7-9' Light brown fine to medium (native) sand, little roots in top 0.5', little gray staining, strong solvent/paint thinner odor



ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES _____ NO X
SAMPLE I.D.: _____ NO SAMPLE

ATLANTIC
ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-04
GENERAL LOCATION AND/OR PURPOSE: Southwest of former 2 million cubic foot gas holder
DATE OCTOBER 26, 1995
TIME OPENED: _____ TIME CLOSED: _____

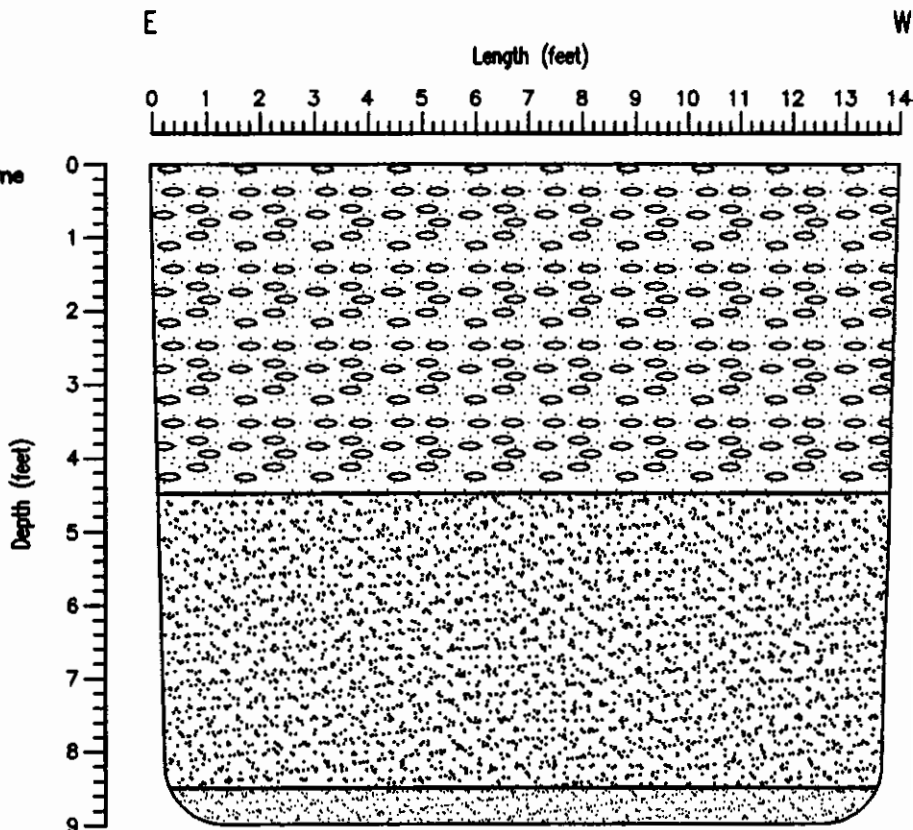
OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426

SOIL DESCRIPTION

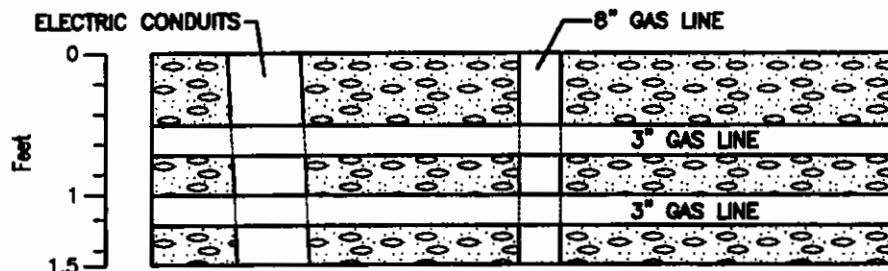
0-4.5' Brown sand, some clinker, some metal pipes, electric conduit, little brick, little gravel, trace wood - no odor

3.5-8.5' Light brown/tan/orange fine to medium sand, no odor (fill) 5ppm

8.5-9' Gray fine to medium sand, stained, strong turpentine/point thinner odor mixed with some naphthalene odor, moist 150 ppm



ELEVATION VIEW



PLAN VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES X NO _____
SAMPLE I.D.: RPTP-4 (8.5-9')

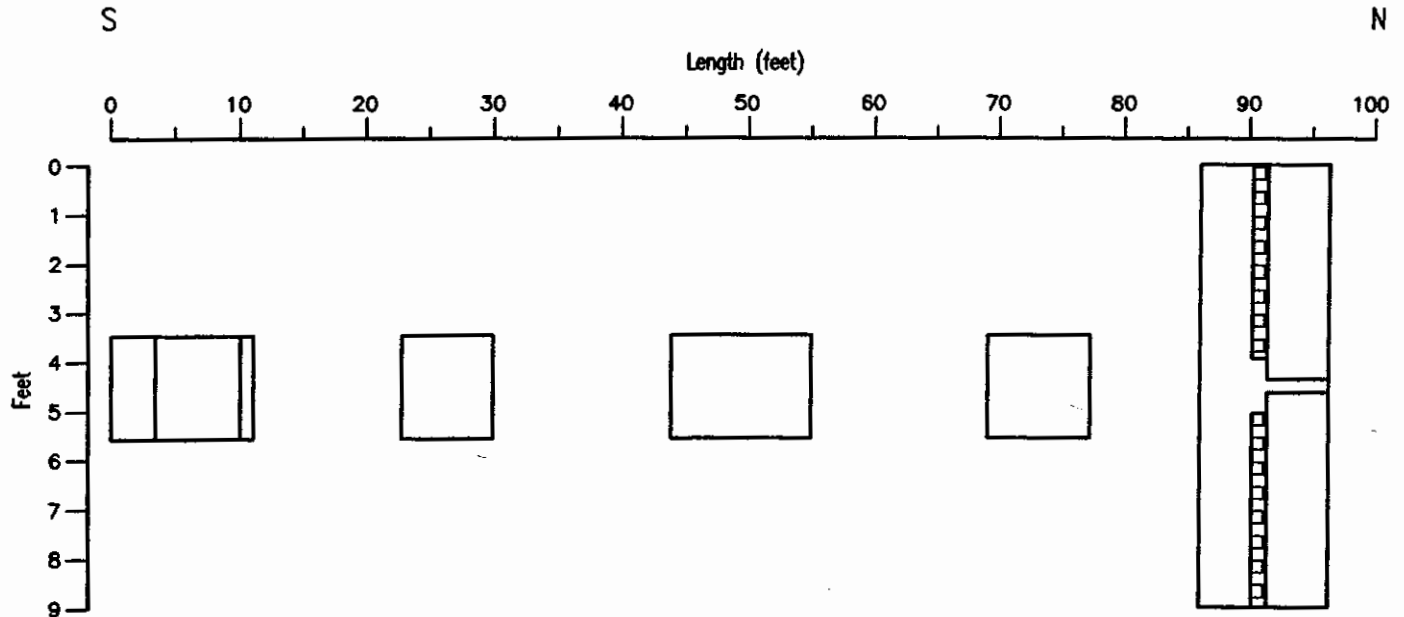
ATLANTIC
ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

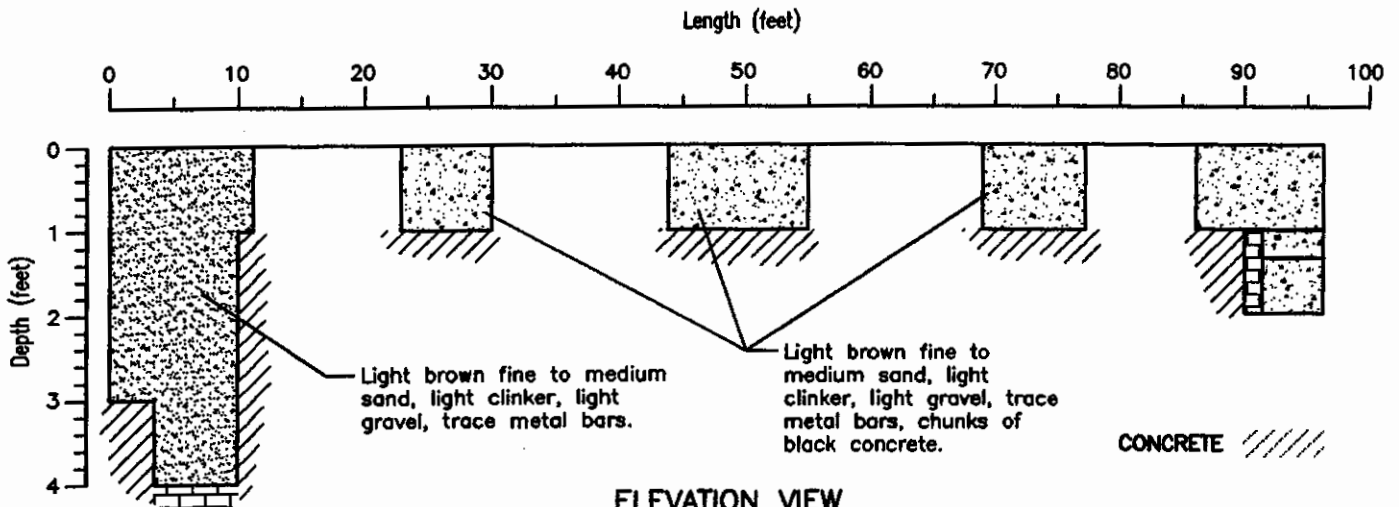
TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-05
GENERAL LOCATION AND/OR PURPOSE: In the vicinity of former
purifiers and heavy oil heater.
DATE OCTOBER 24, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426



PLAN VIEW



ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES _____ NO X
SAMPLE I.D.: _____ NO SAMPLE

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEETPROJECT NUMBER: 1691-07-02OBSERVER: R. COONEYTEST PIT NUMBER: TP-6

ASSISTANT: _____

GENERAL LOCATION AND/OR PURPOSE: In former tar separator area.

OTHERS: _____

DATE OCTOBER 24, 1995BACKHOE OPERATOR: B. PRENTISSEQUIPMENT: CATERPILLAR 426

TIME OPENED: _____

TIME CLOSED: _____

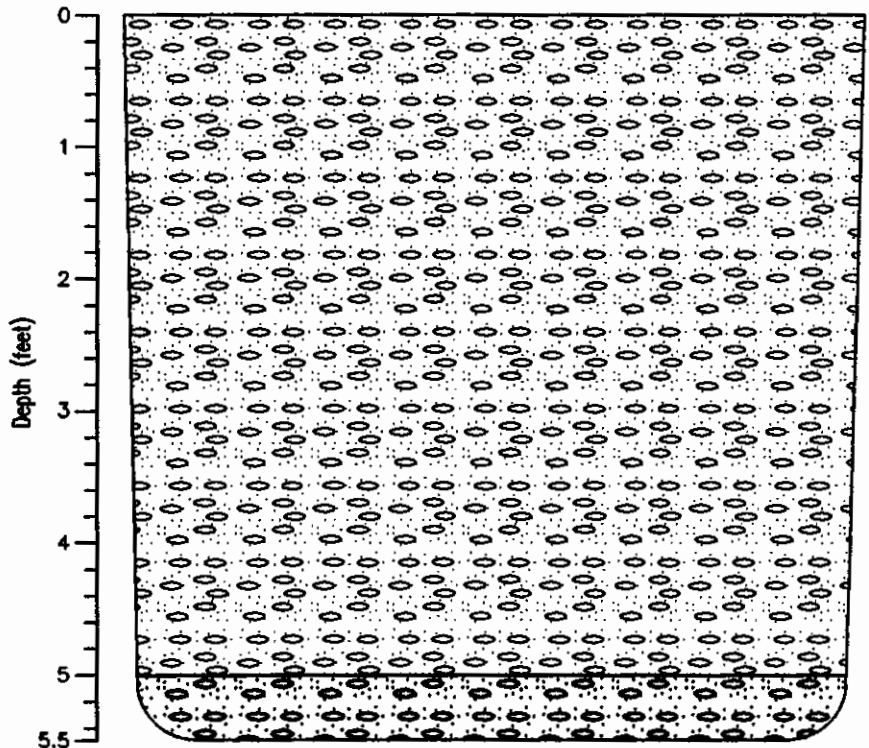
S

N

Length (feet)

**SOIL DESCRIPTION**

0-5' Brown sand and clinker,
some large concrete rubble -
no-alight odor



5-5.5' Same as above - but tarry
- very strong odor
OVM>1000

ELEVATION VIEWVIDEO DOCUMENTED: YES _____ NO XPHOTOGRAPHED: YES _____ NO X

PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 4 FT.NAPL SEEPAGE: YES _____ NO XANALYTICAL SAMPLES: YES _____ NO XSAMPLE I.D.: NO SAMPLE

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

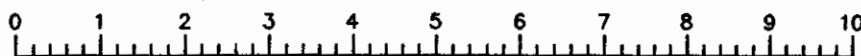
PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-07
GENERAL LOCATION AND/OR PURPOSE: South of former tar separator
near north side of former relief holder
DATE: OCTOBER 26, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426

E

W

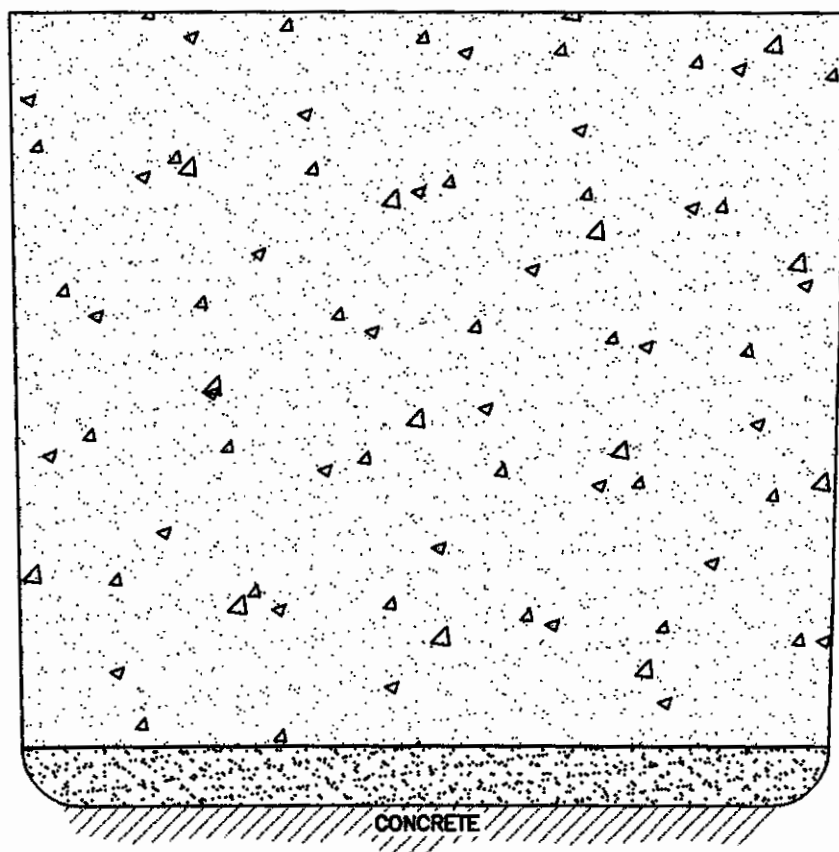
Length (feet)



SOIL DESCRIPTION

0-6.5' Brown with occasional gray staining, fine to medium sand, some large concrete chunks, little wood, little clinker, little metal pipe, dry fill, no odor, 0-5 ppm

Depth (feet)



6.5-7' Black tar stained fine to medium sand, some large concrete chunks, little wood, little clinker, little metal pipe, dry fill, strong tar odor, wet 50 ppm

ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES _____ NO X
SAMPLE I.D.: _____ NO SAMPLE

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02

OBSERVER: R. COONEY

TEST PIT NUMBER: TP-08

ASSISTANT: _____

GENERAL LOCATION AND/OR PURPOSE: Southern side of former
holder pit and oil tank

OTHERS: _____

DATE: OCTOBER 26, 1995

BACKHOE OPERATOR: B. PRENTISS

EQUIPMENT: CATERPILLAR 426

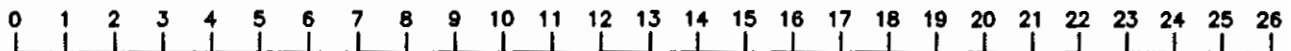
TIME OPENED: _____

TIME CLOSED: _____

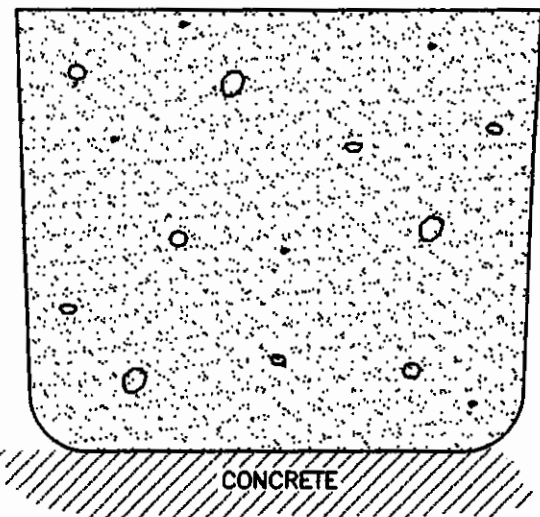
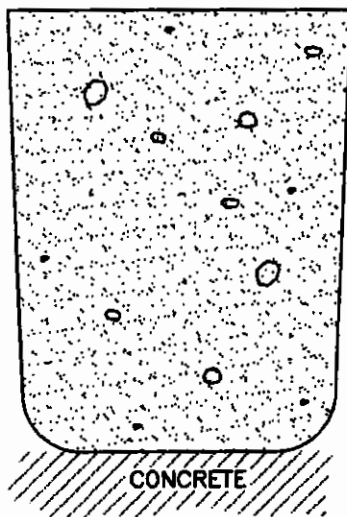
N

Length (feet)

S



Depth (feet)
0
1
2
3



ELEVATION VIEW

SOIL DESCRIPTION

0-2.5' Brown fine to medium sand, little asphalt/bituminous, concrete, little brick,
little clinker, trace plastic, dry to moist at bottom, fill, no odor, 0 ppm

VIDEO DOCUMENTED: YES _____ NO X

PHOTOGRAPHED: YES _____ NO X

PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.

NAPL SEEPAGE: YES _____ NO X

ANALYTICAL SAMPLES: YES X NO _____

SAMPLE I.D.: RTP-08 (6.5-7')

ATLANTIC

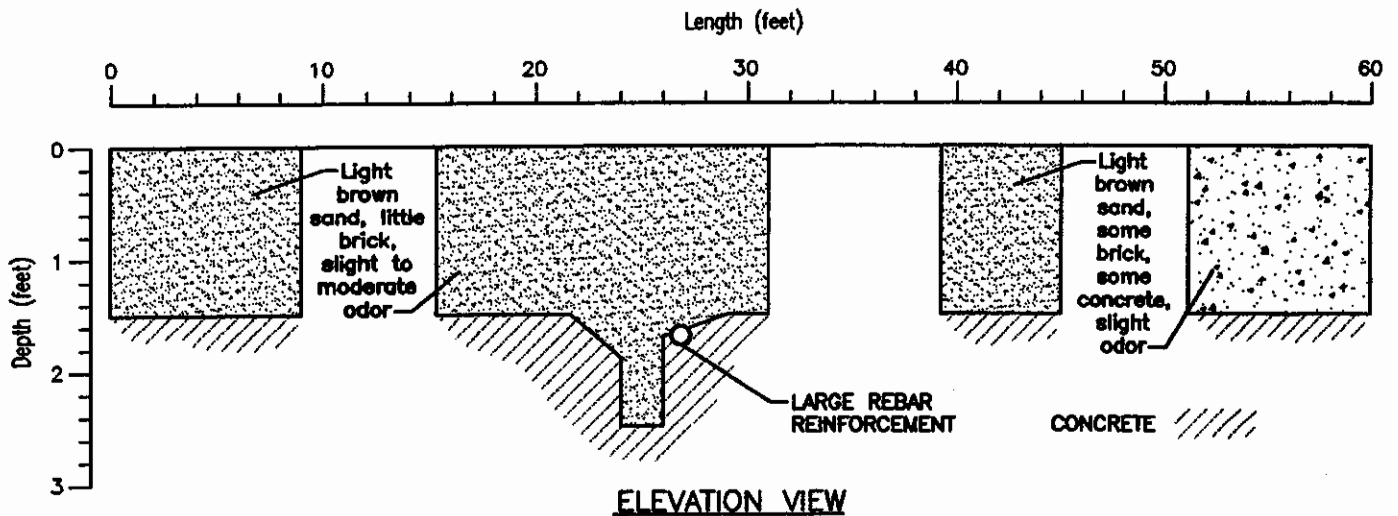
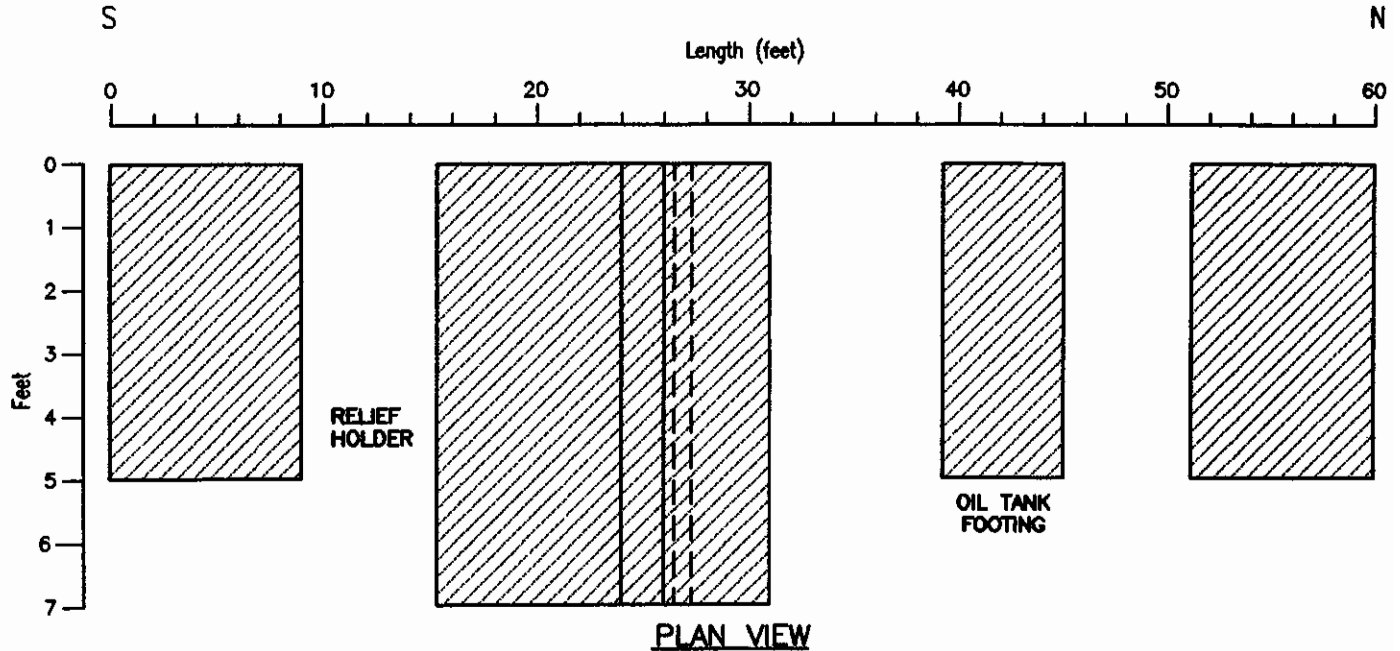
ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-09
GENERAL LOCATION AND/OR PURPOSE: In the vicinity of former
purifiers and heavy oil heater.
DATE OCTOBER 26, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426



VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES _____ NO X
SAMPLE I.D.: _____ NO SAMPLE

ATLANTIC
ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-10
GENERAL LOCATION AND/OR PURPOSE: West of former oil tank
locations
DATE: OCTOBER 26, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426

NW

SE

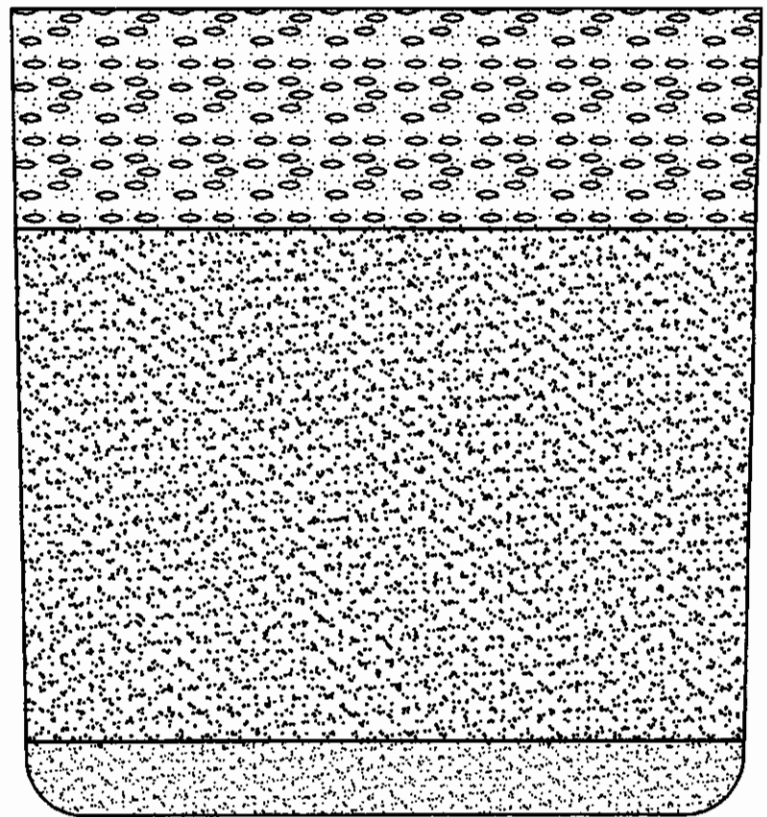
Length (feet)



SOIL DESCRIPTION

- 0-3' Brown - black fine to medium sand and clinkers, little concrete, little gravel, trace brick, trace asphalt
- 3-10' Brown/light brown orange/tan fine to medium sand, trace clinker, trace coal, trace brick (fill), no odor. 0-1 ppm
- 10-11' Light brown fine to medium (native) sand, moist to wet, slight naphthalene odor (very pure naphthalene) 6 ppm

Depth (feet)



ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES _____ NO X
SAMPLE I.D.: _____ NO SAMPLE

ATLANTIC
ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

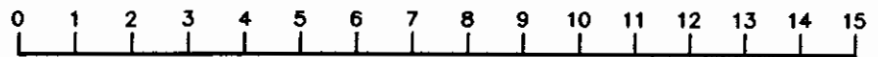
PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-11
GENERAL LOCATION AND/OR PURPOSE: Northwest corner of site
DATE OCTOBER 26, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426

S

N

Length (feet)



SOIL DESCRIPTION

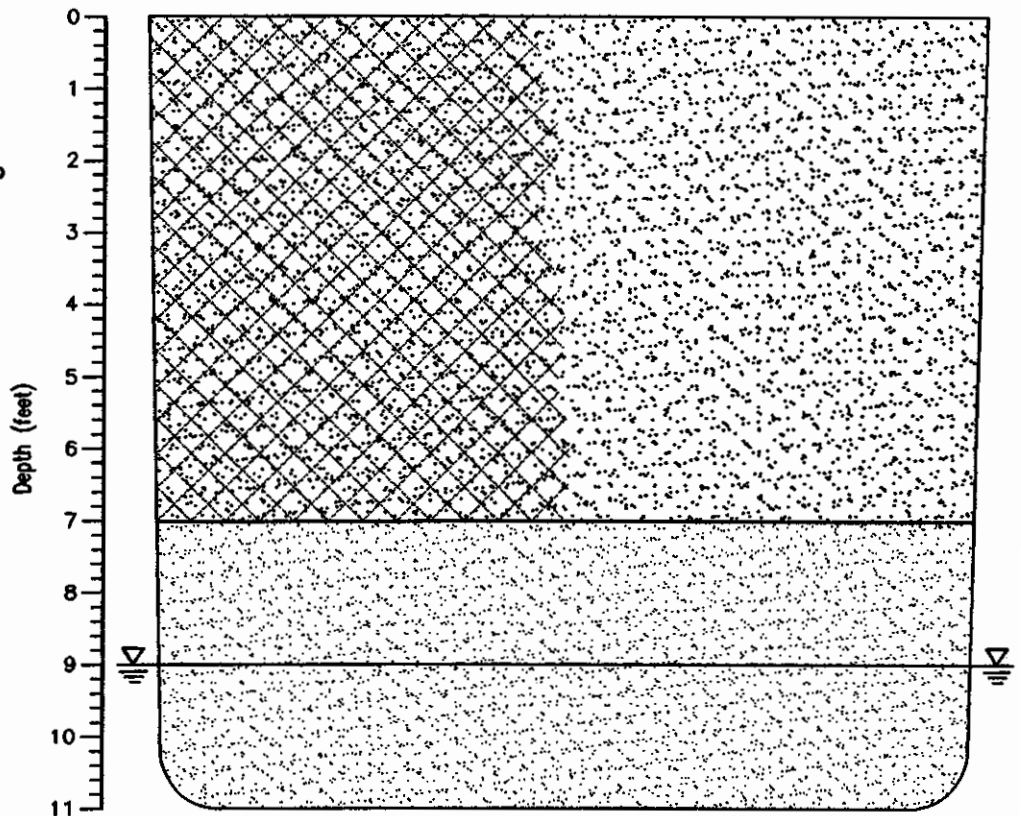
WEST SIDE

0-7' Road debris, sand and fill
(hoses, metal, wood, misc.
debris) little clinker

EAST SIDE

0-7' Light brown/tan/rust fine to
medium sand, no odor (fill)
0 ppm

7-9' Light brown/gray fine to
medium sand, no odor --
moist 9-11'



ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 9 FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES _____ NO X
SAMPLE I.D.: _____ NO SAMPLE

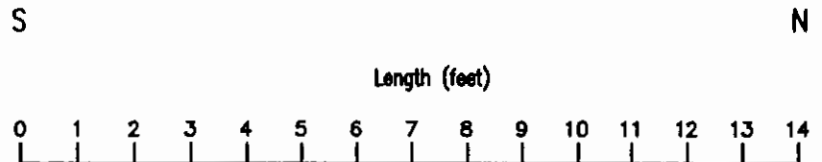
ATLANTIC
ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-12
GENERAL LOCATION AND/OR PURPOSE: In area of former "Stacey
purifier" (southwest of present office building)
DATE OCTOBER 25, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426

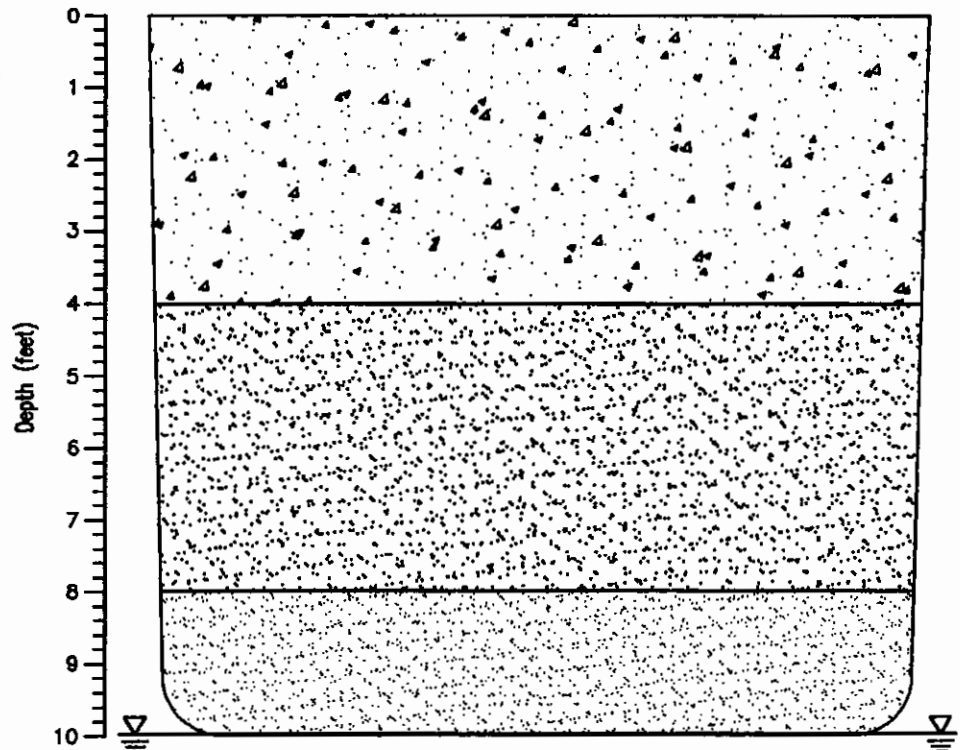


SOIL DESCRIPTION

0-4' Yellow-brown fine to medium sand, some (large) concrete chunks, little metal rebar, dry, no odor (fill)

4-8' Yellow-brown fine to medium sand, dry, no odor. 0 ppm (native)

8-10' Gray-stained fine to medium sand, slight to moderate odor. 30 ppm



ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 10 FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES _____ NO X
SAMPLE I.D.: NO SAMPLE

ATLANTIC

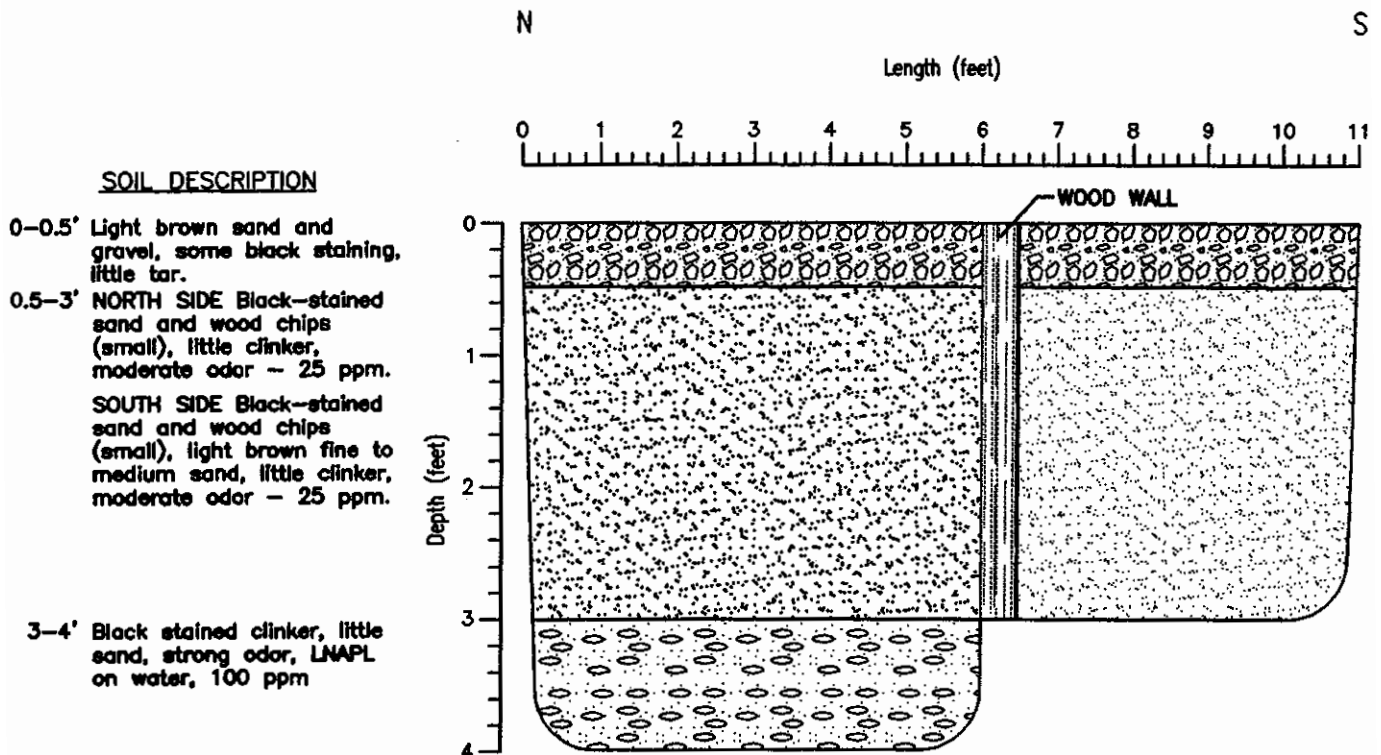
ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-13
GENERAL LOCATION AND/OR PURPOSE: On black stained area
south of southeast corner of building
DATE OCTOBER 25, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426



ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES X NO _____
SAMPLE I.D.: RTP-13 (2-3')

ATLANTIC
ENVIRONMENTAL SERVICES, INC.

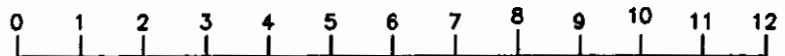
COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-14
GENERAL LOCATION AND/OR PURPOSE: Northwest of former relief
gas holder in area of surficial tar deposits
DATE OCTOBER 24, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426

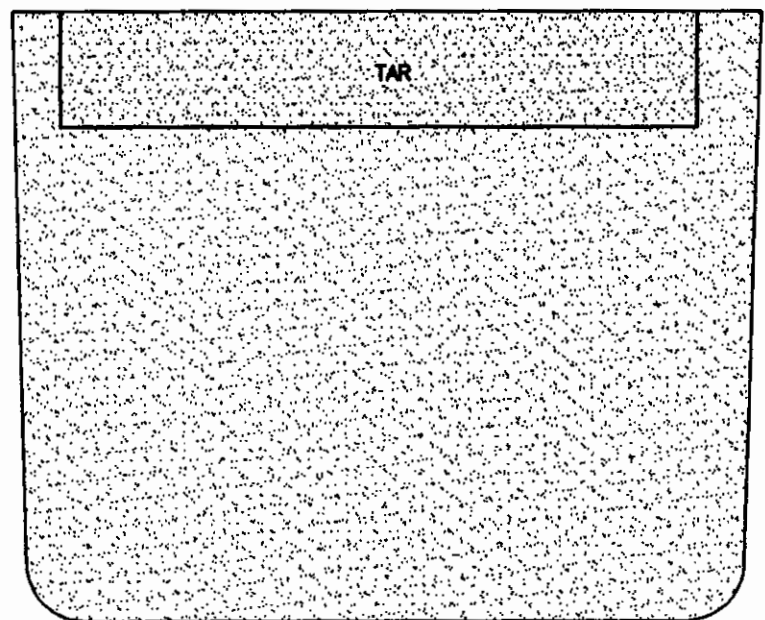
Length (feet)



SOIL DESCRIPTION

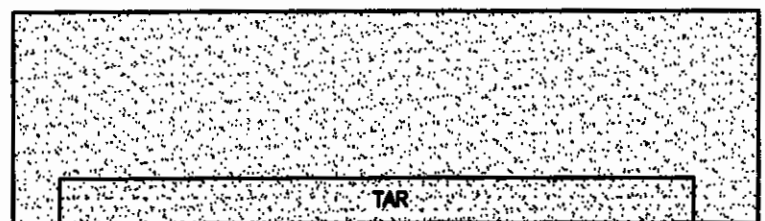
0-5' Brown with black staining, fine to medium sand, strong naphthalene odor - 150 ppm

Depth (feet)
0
1
2
3
4
5



ELEVATION VIEW

Feet
0
1
1.5



PLAN VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES X NO _____
SAMPLE I.D.: RPTP-14 (2-4')

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02

OBSERVER: R. COONEY

TEST PIT NUMBER: TP-15

ASSISTANT: _____

GENERAL LOCATION AND/OR PURPOSE: Center of site in vicinity
of former tar separator and naphthalene scrubber

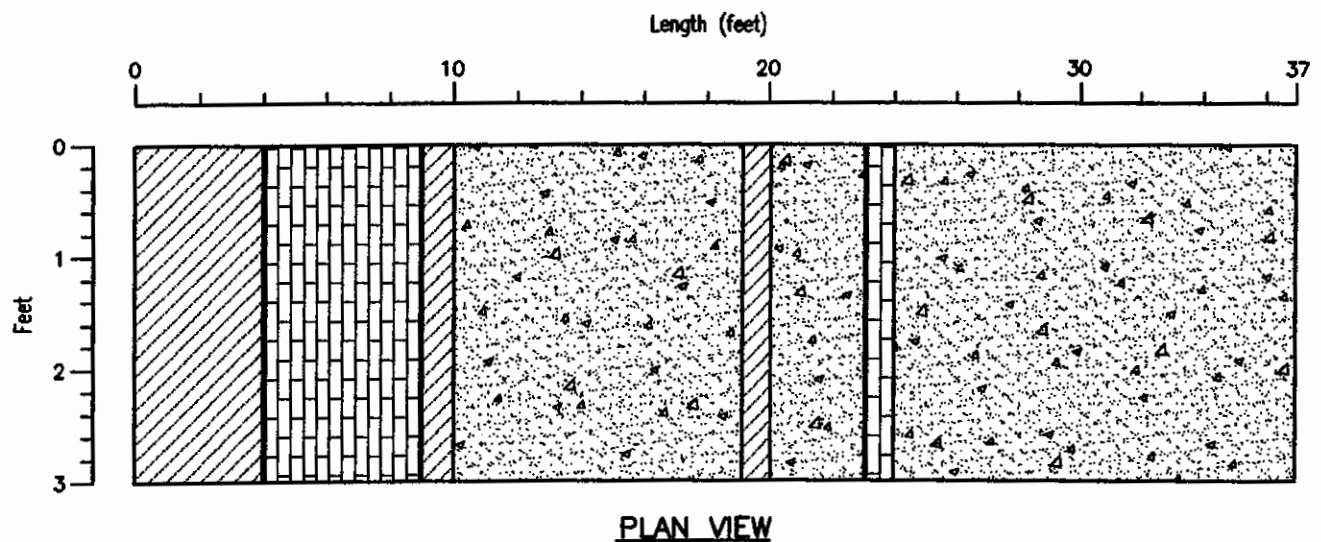
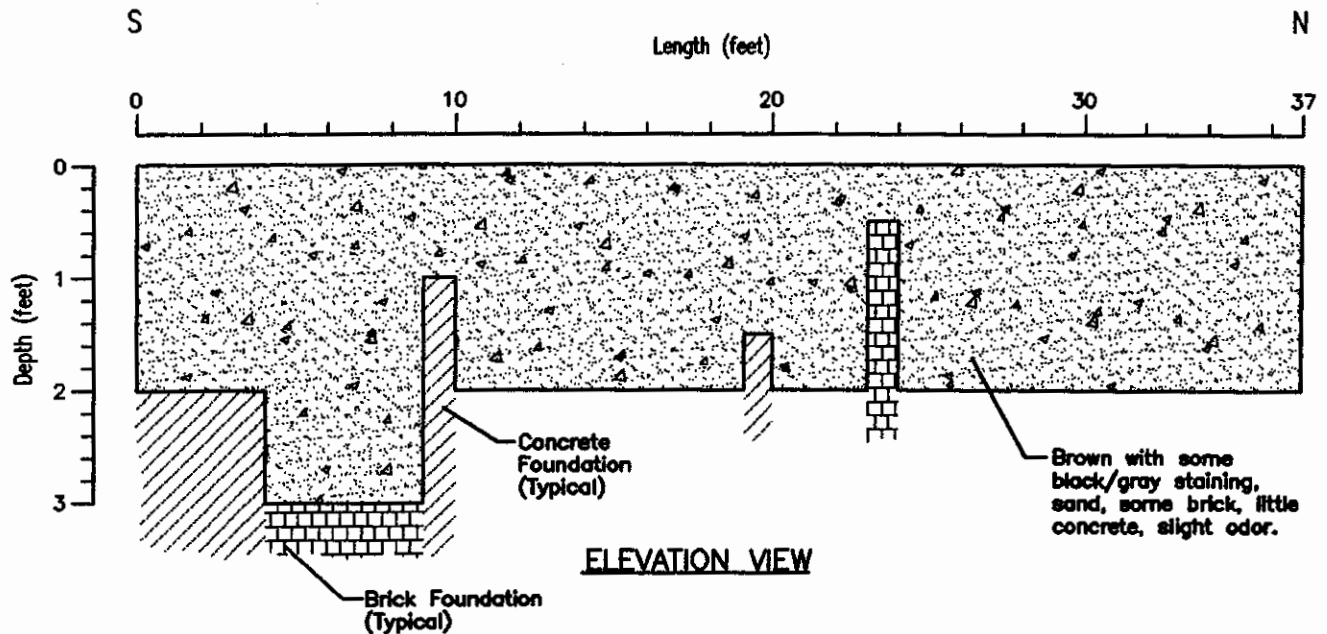
OTHERS: _____

BACKHOE OPERATOR: B. PRENTISS

DATE: OCTOBER 26, 1995

EQUIPMENT: CATERPILLAR 426

TIME OPENED: _____ TIME CLOSED: _____



VIDEO DOCUMENTED: YES _____ NO ☒

PHOTOGRAPHED: YES _____ NO ☒

PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 2.0 FT.

NAPL SEEPAGE: YES _____ NO ☒

ANALYTICAL SAMPLES: YES ☒ NO _____

SAMPLE I.D.: RTP-15 (0-2')

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02OBSERVER: R. COONEYTEST PIT NUMBER: TP-16

ASSISTANT: _____

GENERAL LOCATION AND/OR PURPOSE: Center of site at western
side of former oxide enclosure

OTHERS: _____

DATE: OCTOBER 24, 1995BACKHOE OPERATOR: B. PRENTISSEQUIPMENT: CATERPILLAR 426

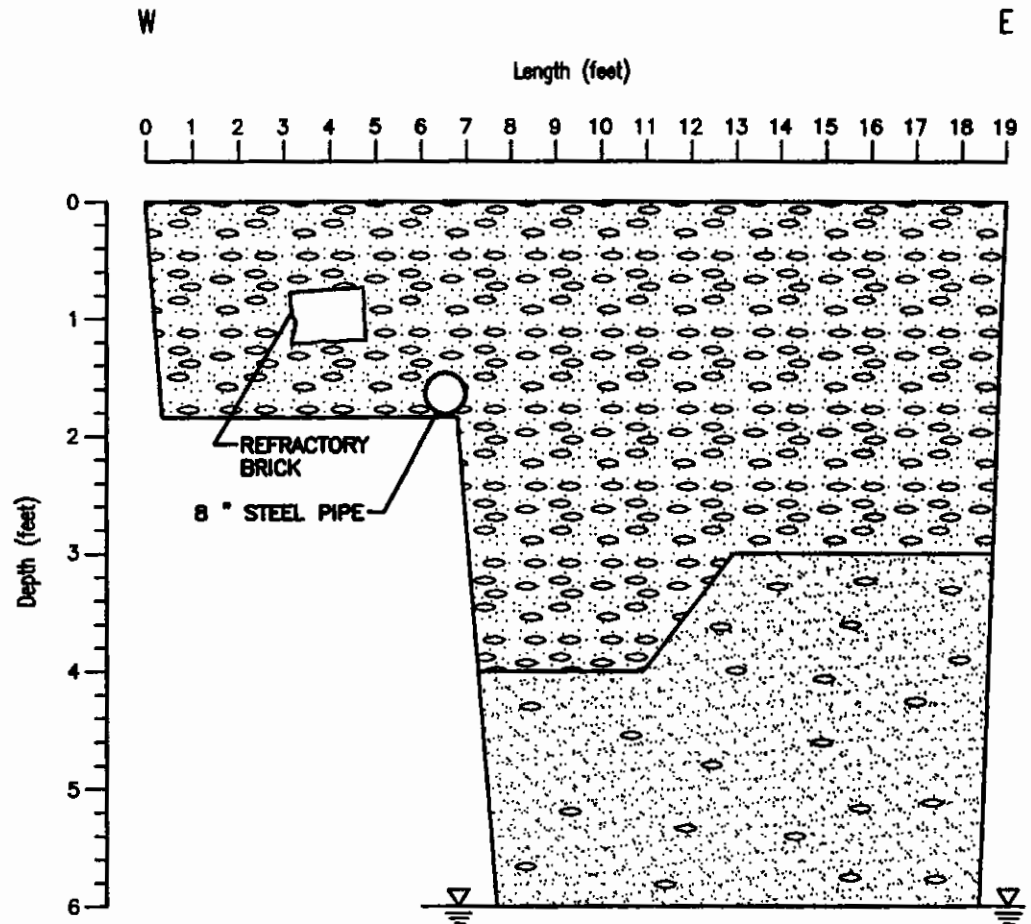
TIME OPENED: _____

TIME CLOSED: _____

SOIL DESCRIPTION

0-4' Alternate layers of sand,
clinkers and slag little
brick fragments, slight
odor. OVM - 0.5 to 2
ppm

4-6' Brown sand, little
clinkers and slag, black
stain, moderate to slight
tar odor. OVM 5-10
ppm



ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO XPHOTOGRAPHED: YES _____ NO X

PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 6 FT.NAPL SEEPAGE: YES _____ NO XANALYTICAL SAMPLES: YES _____ NO X

SAMPLE I.D.: _____ NO SAMPLE

ATLANTIC

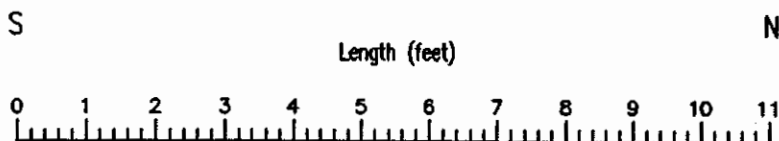
ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

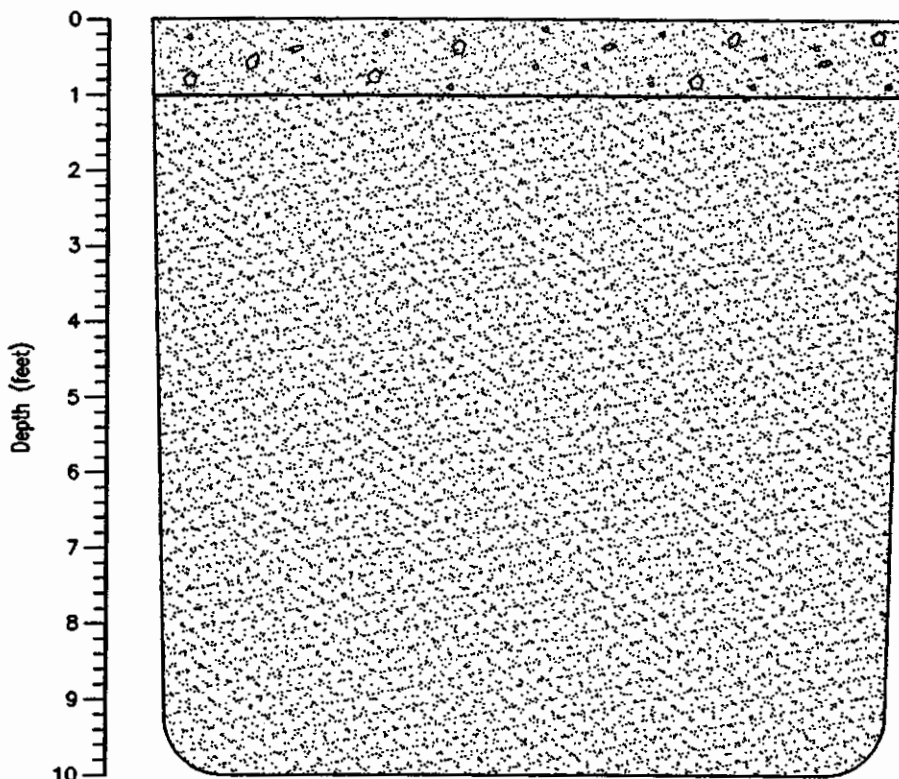
PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-17
GENERAL LOCATION AND/OR PURPOSE: Western boundary of site
DATE OCTOBER 25, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426



SOIL DESCRIPTION

- 0-1' Light brown sand, some pebble to gravel, trace coal, little roots, fill
- 1-10' Tan/brown/light gray fine to medium sand, fill green runners in sand with very slight purifier odor - visible on north wall to 5-6'. Moist at 8.0'. Cave in at 10'



ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES _____ NO X
SAMPLE I.D.: _____ NO SAMPLE

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02

OBSERVER: R. COONEY

TEST PIT NUMBER: TP-18

ASSISTANT: _____

GENERAL LOCATION AND/OR PURPOSE: North of former purifiers

OTHERS: _____

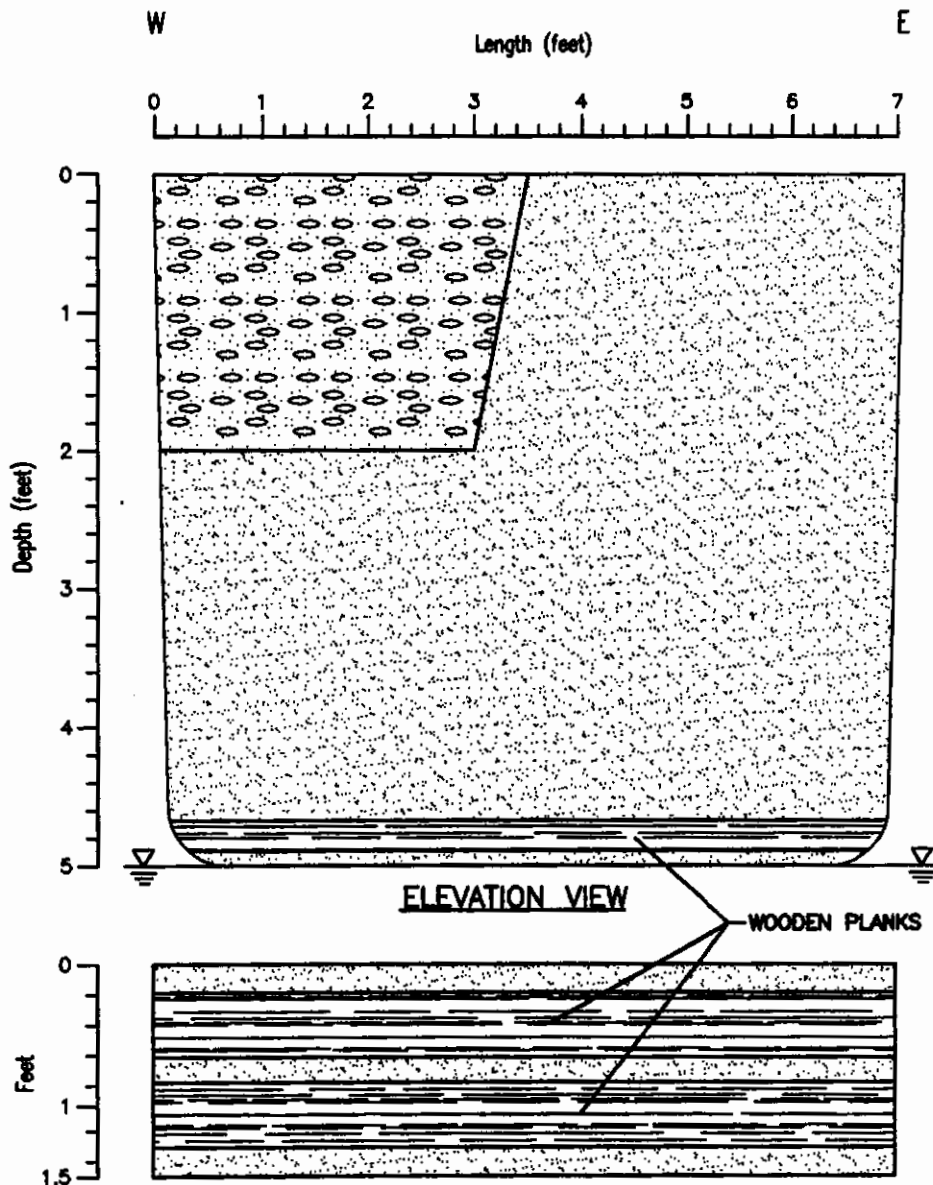
DATE: OCTOBER 24, 1995

BACKHOE OPERATOR: B. PRENTISS

EQUIPMENT: CATERPILLAR 426

TIME OPENED: _____ TIME CLOSED: _____

SOIL DESCRIPTION

0-2' Brown and gray stained sand,
ash and clinker, little dry, old
tar, slight odor0-5' Light brown fine to medium
sand, no odorVIDEO DOCUMENTED: YES _____ NO ☒PHOTOGRAPHED: YES _____ NO ☒

PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 5 FT.

NAPL SEEPAGE: YES _____ NO ☒ANALYTICAL SAMPLES: YES _____ NO ☒

SAMPLE I.D.: NO SAMPLE

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02

OBSERVER: R. COONEY

TEST PIT NUMBER: TP-19

ASSISTANT: _____

GENERAL LOCATION AND/OR PURPOSE: North-central portion of site
north of current access road

OTHERS: _____

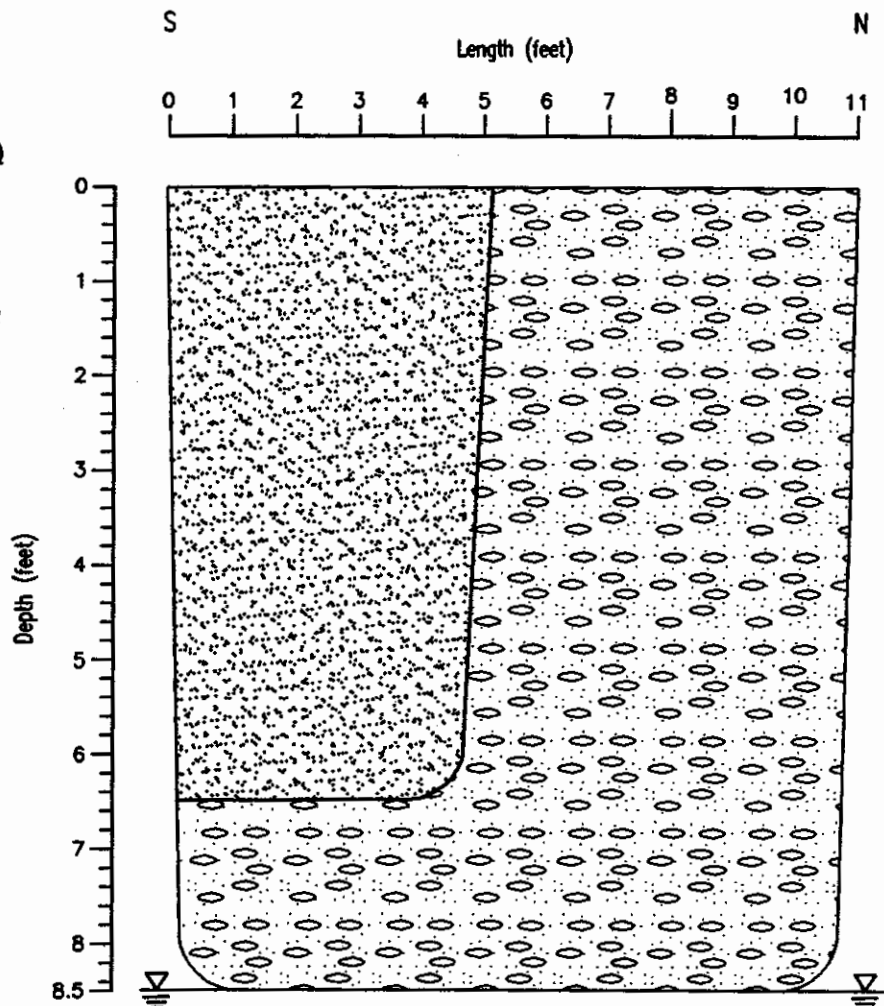
DATE: OCTOBER 24, 1995

BACKHOE OPERATOR: B. PRENTISS

EQUIPMENT: CATERPILLAR 426

TIME OPENED: _____

TIME CLOSED: _____

SOIL DESCRIPTION (Southern Side)0-6.5' Brown sand, some clinker,
little refracting brick. 13.4 ppm
slight odor.SOIL DESCRIPTION (Northern Side)0-8.5' Gray sand and clinker, some
slag and wood. 121 ppm.,
slight moderate odor. Tarry
at 8 feet.GW - Black stained with tar-water-
mix stains that which
touches it. 665 ppm, strong
odor.ELEVATION VIEWVIDEO DOCUMENTED: YES _____ NO ☒PHOTOGRAPHED: YES _____ NO ☒

PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.

NAPL SEEPAGE: YES _____ NO ☒ANALYTICAL SAMPLES: YES _____ NO ☒

SAMPLE I.D.: _____ NO SAMPLE

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02

OBSERVER: R. COONEY

TEST PIT NUMBER: TP-20

ASSISTANT: _____

GENERAL LOCATION AND/OR PURPOSE: South of former tar separator
near north side of former relief holder

OTHERS: _____

DATE: OCTOBER 26, 1995

BACKHOE OPERATOR: B. PRENTISS

EQUIPMENT: CATERPILLAR 426

TIME OPENED: _____ TIME CLOSED: _____

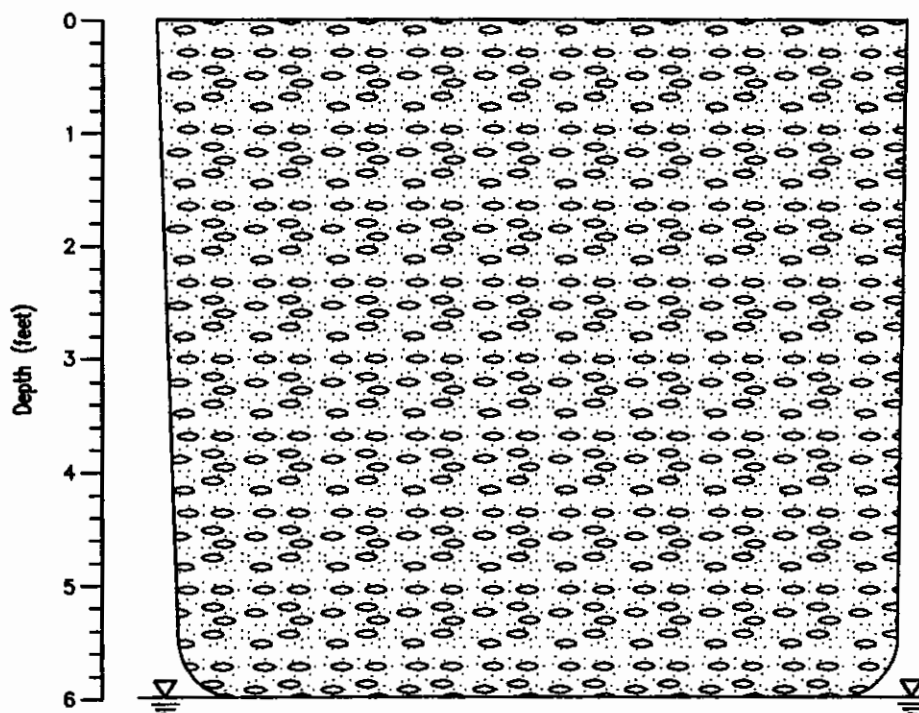
E

W

Length (feet)

SOIL DESCRIPTION

0-9' Gray-dark gray clinker,
some sand, little coal,
tar-water mix on it,
stained, moderate to
strong naphthalene odor,
90 ppm on ovm.
Some Lnapi phases on
water (cloudy appearance)

ELEVATION VIEWVIDEO DOCUMENTED: YES _____ NO ☒PHOTOGRAPHED: YES _____ NO ☒

PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 6 FT.

NAPL SEEPAGE: YES _____ NO ☒ANALYTICAL SAMPLES: YES _____ NO ☒

SAMPLE I.D.: NO SAMPLE

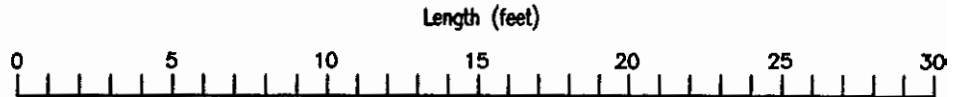
ATLANTIC
ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-21
GENERAL LOCATION AND/OR PURPOSE: West of former 2 million
gallon relief holder
DATE OCTOBER 25, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426

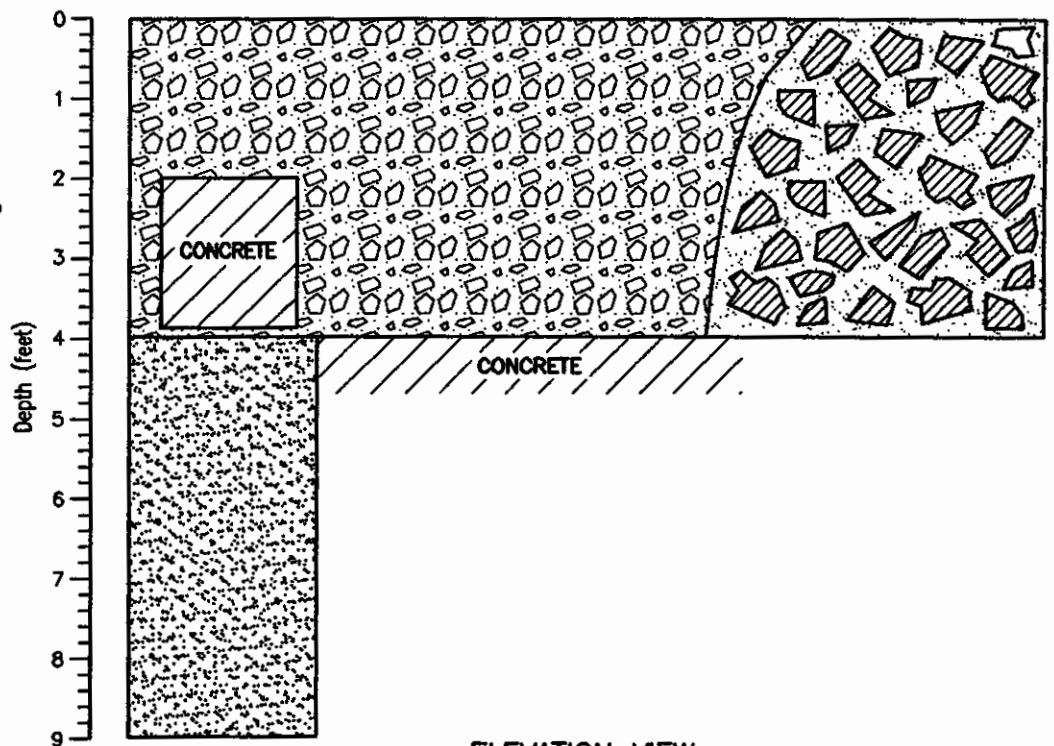


SOIL DESCRIPTION

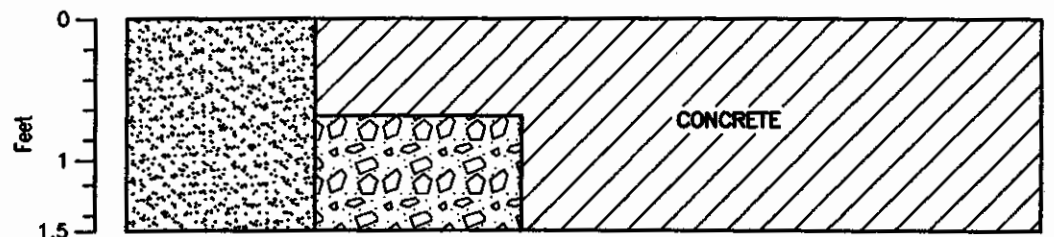
0-4' SOUTH SIDE - Brown with occasional satining, fine to coarse sand, some wood, little gravel, no-slight odor, some (large) concrete.

NORTH SIDE - Large concrete fragments, some sand, little wood, little large metal chunks, little gravel, trace brick, fill

4-6' Gray-stained fine to coarse sand, little wood, little gravel, trace coal, moderate to strong naphthalene & hydrogen sulfide odor - 25 ppm



ELEVATION VIEW



PLAN VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: _____ FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES X NO _____
SAMPLE I.D.: RTP-21 (4-6')

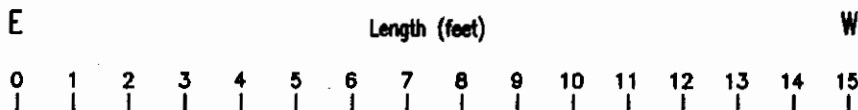
ATLANTIC
ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-22
GENERAL LOCATION AND/OR PURPOSE: Southern border of site, south
of former oil oil tank and old relief holder pit
DATE OCTOBER 26, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426



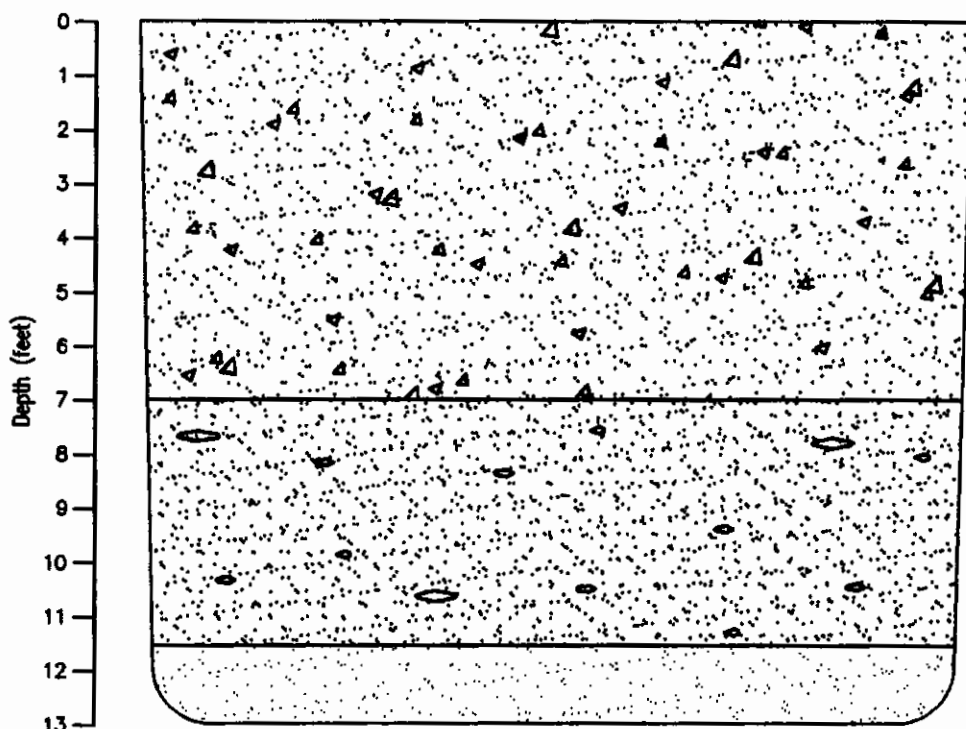
SOIL DESCRIPTION

WEST SIDE

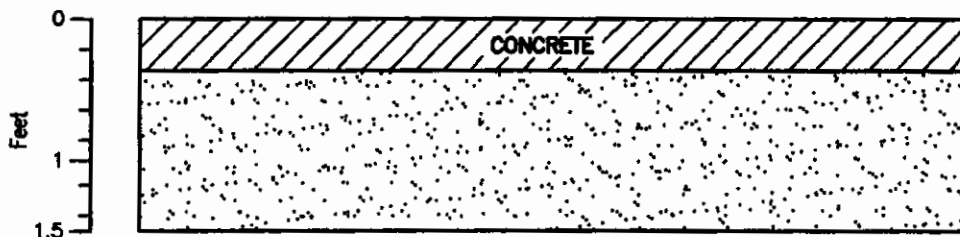
0-7' Brown with occasional stain
fine coarse sand, some
large concrete chunks, little
brick, trace clinker, trace
gravel, trace wood, fill, dry
occasional trace tar odor
(0-10 ppm) (concrete wall
along south side to 7')

7-11.5' Light green/tan/orange
fine to medium sand,
trace clinkers, dry no
odor

11.5-13' Gray-stained fine to
medium sand,
moderate fuel oil odor.
50 ppm



ELEVATION VIEW



PLAN VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 9 FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES X NO _____
SAMPLE I.D.: RPTP-22 (11.5-13')

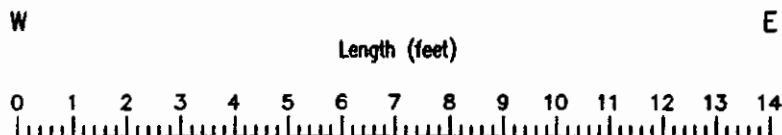
ATLANTIC
ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

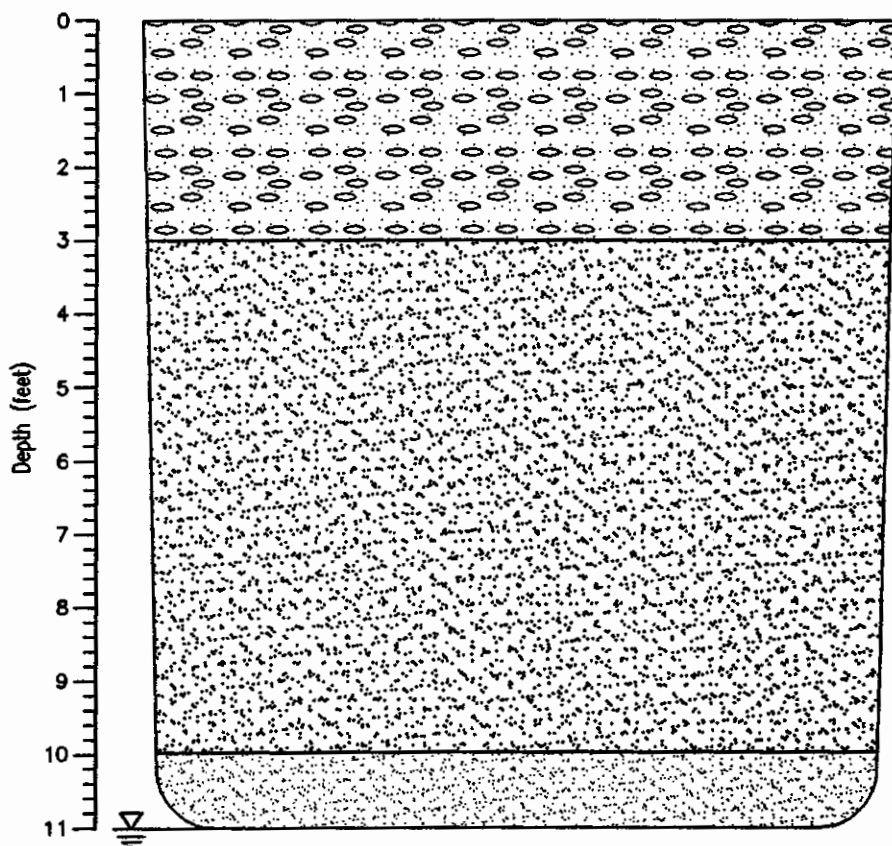
PROJECT NUMBER: 1691-07-02
TEST PIT NUMBER: TP-23
GENERAL LOCATION AND/OR PURPOSE: In former generator fuel storage area
DATE: OCTOBER 26, 1995
TIME OPENED: _____ TIME CLOSED: _____

OBSERVER: R. COONEY
ASSISTANT: _____
OTHERS: _____
BACKHOE OPERATOR: B. PRENTISS
EQUIPMENT: CATERPILLAR 426



SOIL DESCRIPTION

- 0-3' Light brown fine to medium sand, some brick, little coke, trace clinker, dry, no odor
- 3-7' Block-gray clinker, some coke, little sand, slight odor (naphthalene odor), fill, dry
- 7-10' Brown/light brown/tan fine to medium sand
- 10-11' Light gray stained fine to medium sand, moderate fuel oil odor - moist



ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO X
PHOTOGRAPHED: YES _____ NO X
PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 11 FT.
NAPL SEEPAGE: YES _____ NO X
ANALYTICAL SAMPLES: YES X NO _____
SAMPLE I.D.: RTP-23 (10-11')

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

COLCHESTER, CT.

TEST PIT DESCRIPTION SHEET

PROJECT NUMBER: 1691-07-02

OBSERVER: R. COONEY

TEST PIT NUMBER: TP-24

ASSISTANT: _____

GENERAL LOCATION AND/OR PURPOSE: South of current welders'
shop building

OTHERS: _____

DATE: OCTOBER 26, 1995

BACKHOE OPERATOR: B. PRENTISS

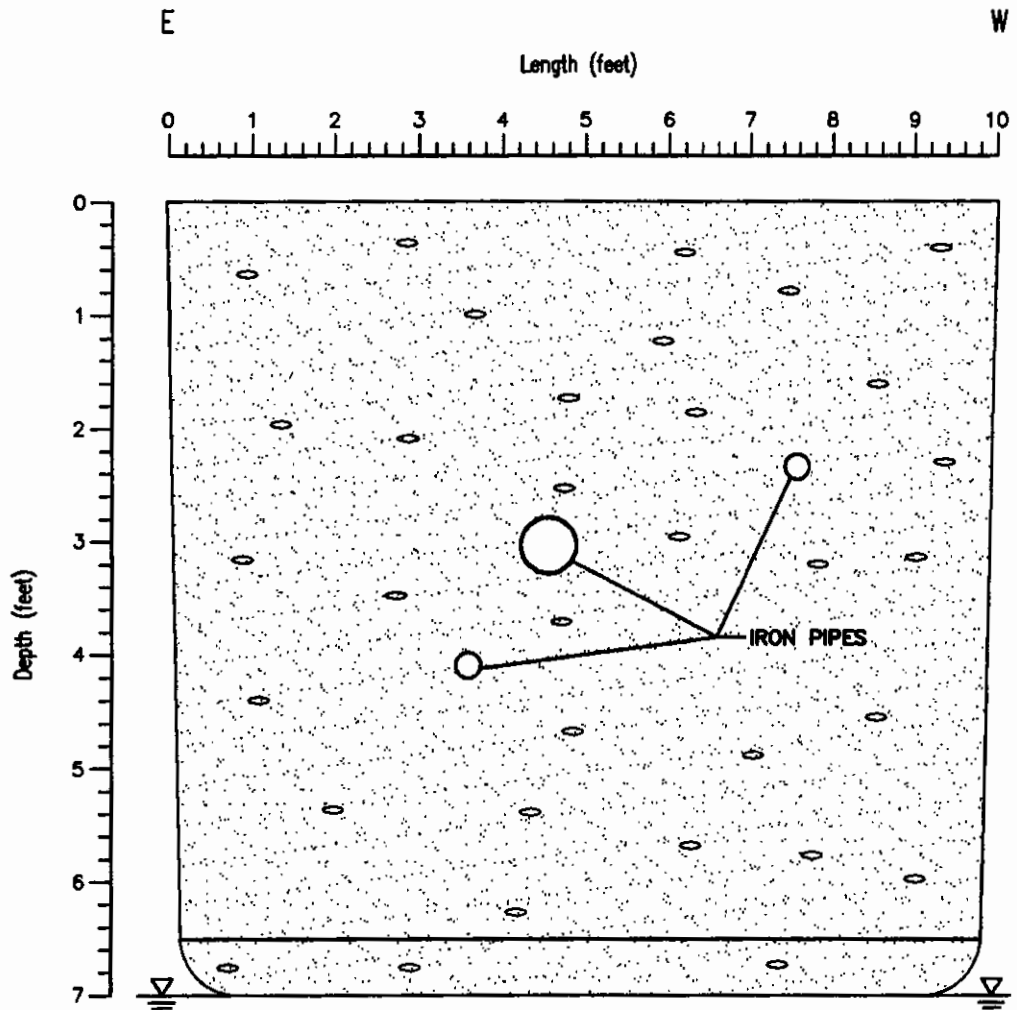
EQUIPMENT: CATERPILLAR 426

TIME OPENED: _____ TIME CLOSED: _____

SOIL DESCRIPTION

0-6.5' Light brown fine to medium sand, little clinker, little concrete, trace wood, trace pebble, trace rebar.

6.5-7' Light brown fine to medium sand, little clinker, little concrete, trace wood, trace pebble, trace rebar, gray stained, moderate fuel oil odor.



ELEVATION VIEW

VIDEO DOCUMENTED: YES _____ NO ☒PHOTOGRAPHED: YES _____ NO ☒

PIEZOMETER NO. USED IN BACKFILL: _____

DEPTH TO WATER: 7 FT.

NAPL SEEPAGE: YES _____ NO ☒ANALYTICAL SAMPLES: YES _____ NO ☒

SAMPLE I.D.: NO SAMPLE



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 10/09/02

Date Completed: 10/09/02

Remarks:

Ground Elevation: 0.00'

Datum:

Contractor: Alpine Ocean Seismic

Total Depth: 5.74'

Drilling Method: VIBRACORE

Logged By: John Ripp

Certified By: Leroy Feeney

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description		Lithology	Physical Observations		Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.					
0-5.74		89			0-0.9' 4" piece of unknown material with worm holes, may be wood. FINE dark grey SAND with SHELL FRAGMENTS Small rounded gravel, no odor 0.9-4' Grey uniform FINE SAND (roots seen at 2.4')					0
		0.1 ppm								
		0.4 ppm								
		0.8 ppm								
		0.6 ppm								
		0.7 ppm								
		0.6 ppm								
		0.7 ppm								
		0.6 ppm			4.3-6' Grey COARSE SAND with small to large shell fragments (scallops)					
		0.5 ppm								
				10						-10

Legend: Physical

Observations



None



Blobs, Globs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSED02-2



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 10/09/02

Date Completed: 10/09/02

Remarks:

Ground Elevation: 0.00'

Datum:

Contractor: Alpine Ocean Seismic

Total Depth: 5.65'

Drilling Method: VIBRACORE

Logged By: John Ripp

Certified By: Leroy Feeney

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PD	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-5.65		53			0-0.5' Top 2"-3" SHELLs, live sea worm 0.5-1.1' Black organic, Silty SHELL hash no odor 1.1'-2.8' Black FINE SAND with shells and pea gravel no odor 2.8'-3.0' Grey FINE SAND, no odor			
		0.7 ppm 4.2 ppm 0.5 ppm 5.5 ppm 2.3 ppm		10				-10

Legend: Physical

Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSED02-3



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 10/09/02

Date Completed: 10/09/02

Remarks:

Ground Elevation: 0.00'

Datum:

Contractor: Alpine Ocean Seismic

Total Depth: 5.88'

Drilling Method: VIBRACORE

Logged By: John Ripp

Certified By: Leroy Feeney

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-5.88		71			0-0.4' Black SHELL hash - no odor 0.4'-3.6 Black FINE SAND with shells, 1" gravel, some live sea worms			
		0.0 ppm						
		0.3 ppm						
		0.5 ppm			1.8' Piece of tile, no odor			
		0.7 ppm						
		3.1 ppm						
		5.4 ppm			3.6'-4.0' Dark Grey, FINE SAND with some shell hash, no gravel, no odor			
		1.7 ppm						
		2.0 ppm						
				10				-10

Legend: Physical
Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Site Id: RPSED02-4



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 10/09/02

Date Completed: 10/09/02

Remarks:

Ground Elevation: 0.00'

Datum:

Contractor: Alpine Ocean Seismic

Total Depth: 6.61'

Drilling Method: VIBRACORE

Logged By: John Ripp

Certified By: Leroy Feeney

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PD	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-6.61		60			0-0.8' Dark grey, FINE SAND and small <1/4" gravel (rounded) some shell fragments, no odor 0.8'-1.1' Dark grey, FINE SAND, no odor 1.1'-1.7' Dark grey, FINE SAND with large shell fragments and small rounded gravel, no odor 1.7'-4.0' Grey, FINE SAND (uniform), no odor			
		0.1 ppm						
		0.2 ppm						
		0.4 ppm						
		0.2 ppm						
		0.8 ppm						
		0.7 ppm						
		0.4 ppm						
		0.5 ppm						
				10				-10

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSED02-5



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 10/09/02

Date Completed: 10/09/02

Remarks:

Ground Elevation: 0.00'

Datum:

Contractor: Alpine Ocean Seismic

Total Depth: 5.45'

Drilling Method: VIBRACORE

Logged By: John Ripp

Certified By: Leroy Feeney

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-5.45		68			0-1.6' Black FINE SAND with mussels and clam shells, some rounded gravel, sulfur odor			
		0.3 ppm						
		0.2 ppm						
		0.7 ppm			1.6'-2.6' Grey COARSE sand with 1" rounded quartz gravel, no odor			
		0.6 ppm						
		0.5 ppm			2.6'-3.9' Grey FINE to MEDIUM SAND (uniform), no odor			
		0.4 ppm						
				10				-10

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Site Id: RPSED02-6



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 10/09/02

Date Completed: 10/09/02

Remarks:

Ground Elevation: 0.00'

Datum:

Contractor: Alpine Ocean Seismic

Total Depth: 6.06'

Drilling Method: VIBRACORE

Logged By: John Ripp

Certified By: Leroy Feeney

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PD	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-6.06		76			0-0.2' Large intact clam shell with black FINE SAND, strong sulfur odor 0.2'-2.1' Black FINE SAND with some shell hash, sulfur odor 2.1-2.5' Same as above with very slight naphthalene odor slight sheen on core barrel 2.5'-4.4' Grey, FINE SAND with trace shell pieces			
			4.8 ppm					
			6.1 ppm					
			4.7 ppm					
			20.5 ppm					
			24 ppm					
			22.2 ppm					
			18.2 ppm					
			9.5 ppm					
				10				-10

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSED02-7



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 10/09/02

Date Completed: 10/09/02

Remarks:

Ground Elevation: 0.00'

Datum:

Contractor: Alpine Ocean Seismic

Total Depth: 7.08'

Drilling Method: VIBRACORE

Logged By: John Ripp

Certified By: Leroy Feeney

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-7.08		74	0.5 ppm 0.3 ppm 0.3 ppm 0.1 ppm 0.1 ppm 0.0 ppm		0-0.6' Black FINE to MEDIUM SAND, reduced organic odor (sulfur), large 3" clam shell on surface, small rounded gravel 0.6'-1.6' Dark Grey, FINE SAND, some small rounded quartz gravel, slight sulfur odor 1.6'-3.4' Grey, FINE SAND, no odor, trace fine shell fragments			
				10				-10

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSED02-8



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 10/09/02

Date Completed: 10/09/02

Remarks:

Ground Elevation: 0.00'

Datum:

Contractor: Alpine Ocean Seismic

Total Depth: 5.30'

Drilling Method: VIBRACORE

Logged By: John Ripp

Certified By: Leroy Feeney

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-5.3		79	0.0 ppm 0.4 ppm 1.7 ppm 0.6 ppm 0.2 ppm 1.0 ppm 0.6 ppm		0-1.2' Dark Grey, FINE to MED SAND with small shell fragments sulfur odor, some small rounded gravel (1/2" diameter) 1.2'-4.2' Grey, FINE uniform SAND, no odor			
				10				-10

Legend: Physical
Observations



None



Blebs, Globes, Lenses, Grain Coating, Sheens



Stain



Tar Saturated



Solid Tar

Site Id: RPSED02-9



GEI Consultants, Inc.

Client: Keyspan Energy, Inc.

Project Number: 982482

Project Name: Rockaway Park

Date Started: 10/09/02

Date Completed: 10/09/02

Remarks:

Ground Elevation: 0.00'

Datum:

Contractor: Alpine Ocean Seismic

Total Depth: 6.28'

Drilling Method: VIBRACORE

Logged By: John Ripp

Certified By: Leroy Feeney

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description	Lithology	Physical Observations	Elevation (ft.)
					color, density, SOIL, admixture, moisture, other notes, ORIGIN.			
0-6.28		76	0 ppm 0.4 ppm 0.8 ppm 0.9 ppm 0.4 ppm 0.3 ppm 0.4 ppm 0.5 ppm 0.6 ppm		0-2.0' Black, FINE to MED SAND with shell fragments, piece of glass paint chips, no odor 2.0-2.7' Dark grey, FINE SAND with shell fragments (finer than above) siltier between 2.4-2.6', rounded gravel no odor 2.7-4.0' Grey, uniform MEDIUM SAND no odor 4.0-4.7' Same as above with some roots			
				10				-10

Legend: Physical

Observations



None



Blebs, Globbs, Lenses, Grain Coating, Sheens



Stoin



Tar Saturated



Solid Tar

Appendix C

Hydraulic Conductivity Calculations

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-02S

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 11.71

Weather: Sunny, Clear

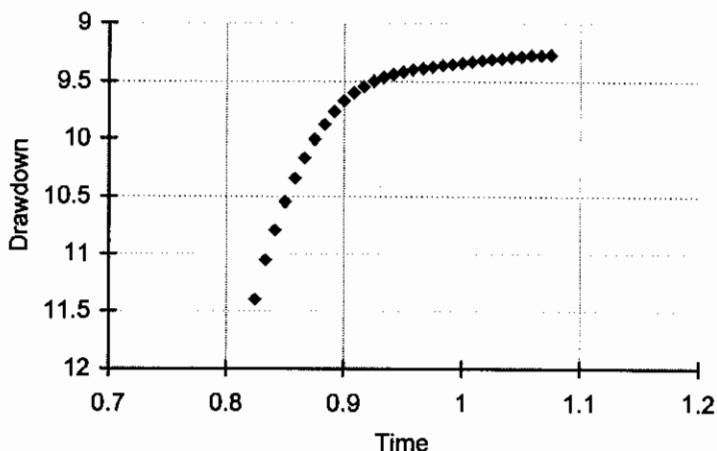
Project Name: Rockaway Park

Analysis By: M. Pype

Date Started: 9/18/02

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	15
Static W/L-Depth (ft.):	9.18
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	9.18
TOC Elevation (feet):	11.17
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	6.17
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.0195
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.825	11.396						
0.8333	11.058						
0.8417	10.79						
0.85	10.551						
0.8583	10.341						
0.8667	10.166						
0.875	10.008						
0.8833	9.874						
0.8917	9.763						
0.9	9.67						
0.9083	9.6						
0.9167	9.548						
0.925	9.501						
0.9333	9.466						
0.9417	9.443						
0.95	9.419						
0.9583	9.402						
0.9667	9.39						
0.975	9.379						
0.9833	9.361						
0.9917	9.355						
1	9.344						
1.0083	9.332						
1.0167	9.32						
1.025	9.309						
1.0333	9.304						
1.0417	9.292						
1.05	9.285						
1.0583	9.274						

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-02S

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 11.71

Weather: Sunny, Clear

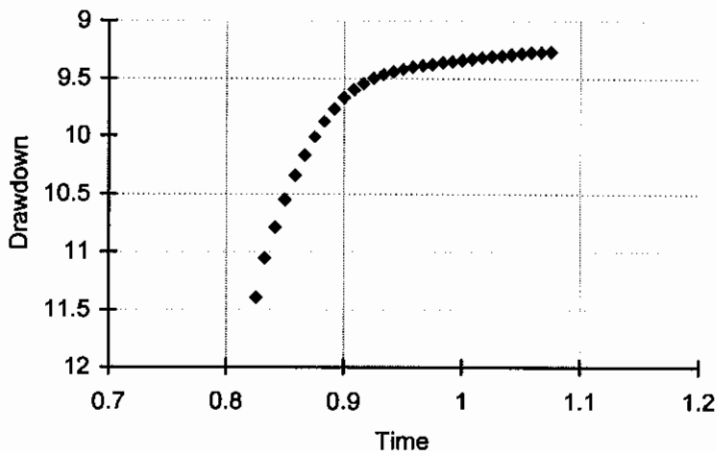
Project Name: Rockaway Park

Analysis By: M. Pype

Date Started: 9/18/02

BASIC TEST DATA

Measurement Units (1-6):	<u>2</u>
Unconfined(1)/Confined(2):	<u>1</u>
Well Depth - TOC (feet):	<u>15</u>
Static W/L-Depth (ft.):	<u>9.18</u>
Riser Pipe Diameter (feet):	<u>0.1667</u>
Initial Test Depth Value (ft.):	<u>9.18</u>
TOC Elevation (feet):	<u>11.17</u>
Intake/Soil Col. Diam. (feet):	<u>0.55</u>
Depth to Top of Pack (feet):	<u>6.17</u>
Intake/Soil Col. Length (ft.):	<u>10</u>
Saturat. Col. Thickness (ft.):	<u>10</u>
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	<u>0.0195</u>
Thickness of Aquifer (feet):	<u>300</u>



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.0667	9.274						
1.075	9.269						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

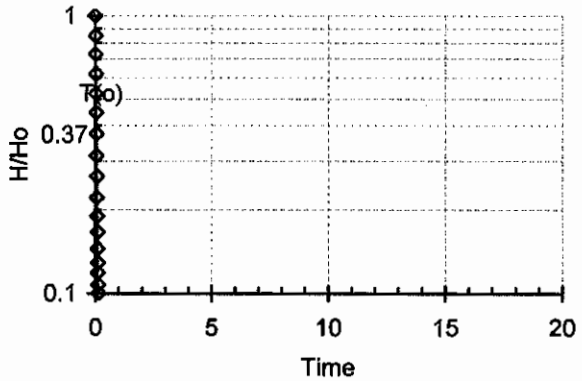
Project No.: 98248

Client Name: Keyspan

Run Date: _____

Analysis By: M. Pye

Identification: RPMW-02S

Test Type: <u>7</u> <u>1 to 7</u>					
Riser Pipe Diameter:	<u>0.1667</u> feet				
Intake Diam.:	<u>0.55</u> feet				
Intake Length:	<u>10</u> feet				
Water Table Depth:	<u>9.18</u> feet				
Line Fit Starting No.:	<u>1</u> <u>Min 1 to</u>				
Line Fit Ending No.:	<u>11</u> <u>Max 31</u>				
Entrapped Air Correct.:	<u>N</u> <u>Y or N</u>				
Specify Output Units:	<u>3</u> <u>1 to 9</u>				
Hyd Cond, K(h):	<u>3.57E+01</u> ft./day				
Basic Time Lag:	<u>0.05</u> min.				
Error of Fit:	<u>0.0011</u>				
Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.83	11.40	2.22	0.0000	0.0131
2)	0.83	11.06	1.88	-0.1655	-0.1538
3)	0.84	10.79	1.61	-0.3195	-0.3228
4)	0.85	10.55	1.37	-0.4802	-0.4898
5)	0.86	10.34	1.16	-0.6464	-0.6567
6)	0.87	10.17	0.99	-0.8098	-0.8257
7)	0.88	10.01	0.83	-0.9844	-0.9926
8)	0.88	9.87	0.69	-1.1610	-1.1596
9)	0.89	9.76	0.58	-1.3353	-1.3285
10)	0.90	9.67	0.49	-1.5091	-1.4955
11)	0.91	9.60	0.42	-1.6632	-1.6624
12)	0.92	9.55	0.37	-1.7954	-1.8314
13)	0.93	9.50	0.32	-1.9320	-1.9984
14)	0.93	9.47	0.29	-2.0475	-2.1653
15)	0.94	9.44	0.26	-2.1313	-2.3343
16)	0.95	9.42	0.24	-2.2270	-2.5012
17)	0.96	9.40	0.22	-2.3008	-2.6682
18)	0.97	9.39	0.21	-2.3564	-2.8372
19)	0.98	9.38	0.20	-2.4102	-3.0041
20)	0.98	9.36	0.18	-2.5050	-3.1711
21)	0.99	9.36	0.18	-2.5387	-3.3400
22)	1.00	9.34	0.16	-2.6036	-3.5070
23)	1.01	9.33	0.15	-2.6796	-3.6739
24)	1.02	9.32	0.14	-2.7618	-3.8429
25)	1.03	9.31	0.13	-2.8436	-4.0098

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

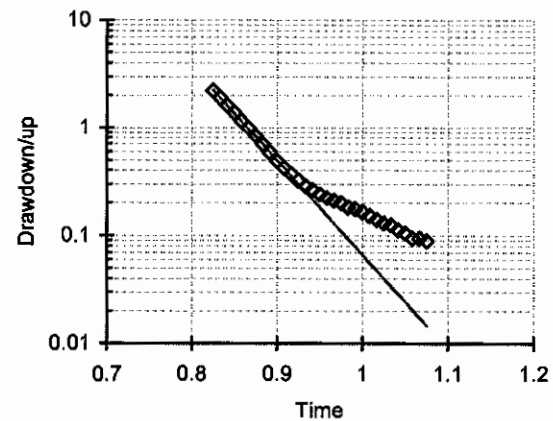
Client Name: Keyspan

Identification: RPMW-02S

Analysis By: M. Pype

Run Date:

Riser Pipe Diameter:	0.1667 feet
Intake Diameter:	0.55 feet
Intake Length:	10 feet
Saturated Column Length:	10 feet
Water Table Depth:	9.18 feet
Aquifer Thickness:	300 feet
Line Fit Starting No.:	1 Min 1 to
Line Fit Ending No.:	11 Max 31
Specify Output Units:	2 1 to 9
Hyd. Cond., K(h):	1.53E-02 ft./min.
Error of Fit:	0.001



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.83	11.40	2.22	0.796	0.809
2)	0.83	11.06	1.88	0.630	0.642
3)	0.84	10.79	1.61	0.476	0.473
4)	0.85	10.55	1.37	0.316	0.306
5)	0.86	10.34	1.16	0.149	0.139
6)	0.87	10.17	0.99	-0.014	-0.030
7)	0.88	10.01	0.83	-0.189	-0.197
8)	0.88	9.87	0.69	-0.365	-0.364
9)	0.89	9.76	0.58	-0.540	-0.533
10)	0.90	9.67	0.49	-0.713	-0.700
11)	0.91	9.60	0.42	-0.868	-0.867
12)	0.92	9.55	0.37	-1.000	-1.036
13)	0.93	9.50	0.32	-1.136	-1.203
14)	0.93	9.47	0.29	-1.252	-1.370
15)	0.94	9.44	0.26	-1.336	-1.539
16)	0.95	9.42	0.24	-1.431	-1.706
17)	0.96	9.40	0.22	-1.505	-1.872
18)	0.97	9.39	0.21	-1.561	-2.041
19)	0.98	9.38	0.20	-1.614	-2.208
20)	0.98	9.36	0.18	-1.709	-2.375
21)	0.99	9.36	0.18	-1.743	-2.544
22)	1.00	9.34	0.16	-1.808	-2.711
23)	1.01	9.33	0.15	-1.884	-2.878
24)	1.02	9.32	0.14	-1.966	-3.047

25)	1.03	9.31	0.13		-2.048	-3.214
26)	1.03	9.30	0.12		-2.087	-3.381
27)	1.04	9.29	0.11		-2.189	-3.550
28)	1.05	9.29	0.11		-2.254	-3.717
29)	1.06	9.27	0.09		-2.364	-3.884
30)	1.07	9.27	0.09		-2.364	-4.053
31)	1.08	9.27	0.09		-2.419	-4.220

Calculator for Finding Effective Well Radius (r_e)

This worksheet calculates the effective radius of the well casing/bore over which water level changes occur during the test. Effective radius should be used if the water level during the test is within the screened length of the well, and the hydraulic conductivity (K) of the pack material or the zone of development is significantly greater than the aquifer conductivity. Otherwise the radius of the well casing/bore or the open hole radius should be used. Use the calculated effective radius as the input (multiplied by 2 for diameter) for the Intake/Soil Column Diameter entry found on the Data Entry sheet.

Data Entry

(Use any consistent units for input.)

Actual inside screen radius (r_i): 1.500E+00

Radius of well bore or pack (r_o): 3.000E+00

Porosity of pack material or
the developed zone (n): 3.000E-01

Calculated Result

Effective radius (r_e): 2.068E+00

Effective diameter: 4.135E+00

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-02I

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 11.68

Weather: Sunny, Clear

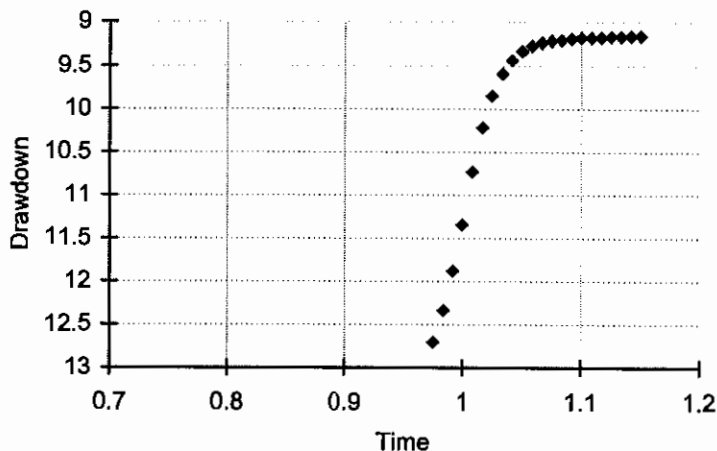
Project Name: Rockaway Park

Analysis By: M. Pype

Date Started: 9/18/02

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	45
Static W/L-Depth (ft.):	9.14
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	9.14
TOC Elevation (feet):	10.94
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	-24.06
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.039
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.975	12.706						
0.9833	12.338						
0.9917	11.883						
1	11.346						
1.0083	10.74						
1.0167	10.22						
1.025	9.847						
1.0333	9.596						
1.0417	9.439						
1.05	9.334						
1.0583	9.275						
1.0667	9.24						
1.075	9.217						
1.0833	9.205						
1.0917	9.194						
1.1	9.182						
1.1083	9.182						
1.1167	9.176						
1.125	9.17						
1.1333	9.17						
1.1417	9.164						
1.15	9.164						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

Client Name: Keyspan

Run Date:

Analysis By: M. Pye

Identification: RPMW-02I

Test Type:		7	1 to 7
Riser Pipe Diameter:		0.1667	feet
Intake Diam.:		0.55	feet
Intake Length:		10	feet
Water Table Depth:		9.14	feet
Line Fit Starting No.:		1	Min 1 to
Line Fit Ending No.:		11	Max 22
Entrapped Air Correct.:		N	Y or N
Specify Output Units:		3	1 to 9
Hyd Cond, K(h):		5.53E+01	ft./day
Basic Time Lag:		0.03	min.
Error of Fit:		0.3379	

Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.975	12.71	3.57	0.0000	0.3556
2)	0.9833	12.34	3.20	-0.1089	0.0098
3)	0.9917	11.88	2.74	-0.2624	-0.3403
4)	1	11.35	2.21	-0.4803	-0.6862
5)	1.0083	10.74	1.60	-0.8014	-1.0320
6)	1.0167	10.22	1.08	-1.1945	-1.3821
7)	1.025	9.85	0.71	-1.6182	-1.7280
8)	1.0333	9.60	0.46	-2.0567	-2.0739
9)	1.0417	9.44	0.30	-2.4788	-2.4239
10)	1.05	9.33	0.19	-2.9113	-2.7698
11)	1.0583	9.28	0.14	-3.2739	-3.1157
12)	1.0667	9.24	0.10	-3.5740	-3.4657
13)	1.075	9.22	0.08	-3.8354	-3.8116
14)	1.0833	9.21	0.06	-4.0048	-4.1575
15)	1.0917	9.19	0.05	-4.1902	-4.5075
16)	1.1	9.18	0.04	-4.4415	-4.8534
17)	1.1083	9.18	0.04	-4.4415	-5.1993
18)	1.1167	9.18	0.04	-4.5957	-5.5494
19)	1.125	9.17	0.03	-4.7780	-5.8952
20)	1.1333	9.17	0.03	-4.7780	-6.2411
21)	1.1417	9.16	0.02	-5.0011	-6.5912
22)	1.15	9.16	0.02	-5.0011	-6.9370

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

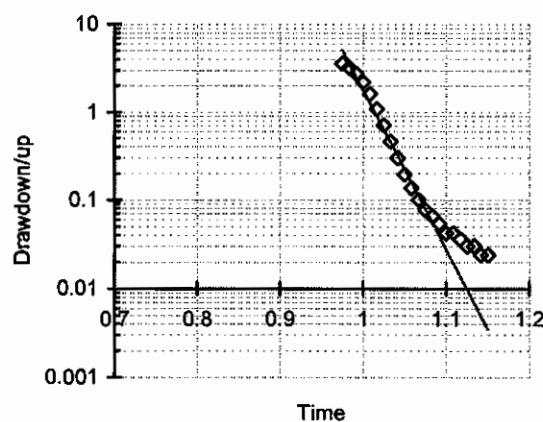
Client Name: Keyspan

Identification: RPMW-02I

Analysis By: M. Pype

Run Date:

Riser Pipe Diameter:	0.1667 feet
Intake Diameter:	0.55 feet
Intake Length:	10 feet
Saturated Column Length:	10 feet
Water Table Depth:	9.14 feet
Aquifer Thickness:	300 feet
Line Fit Starting No.:	1 Min 1 to
Line Fit Ending No.:	11 Max 22
Specify Output Units:	2 1 to 9
Hyd. Cond., K(h):	3.18E-02 ft./min.
Error of Fit:	0.338



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.9750	12.71	3.57	1.271	1.627
2)	0.9833	12.34	3.20	1.163	1.281
3)	0.9917	11.88	2.74	1.009	0.931
4)	1.0000	11.35	2.21	0.791	0.585
5)	1.0083	10.74	1.60	0.470	0.239
6)	1.0167	10.22	1.08	0.077	-0.111
7)	1.0250	9.85	0.71	-0.347	-0.457
8)	1.0333	9.60	0.46	-0.785	-0.802
9)	1.0417	9.44	0.30	-1.207	-1.152
10)	1.0500	9.33	0.19	-1.640	-1.498
11)	1.0583	9.28	0.14	-2.002	-1.844
12)	1.0667	9.24	0.10	-2.303	-2.194
13)	1.0750	9.22	0.08	-2.564	-2.540
14)	1.0833	9.21	0.06	-2.733	-2.886
15)	1.0917	9.19	0.05	-2.919	-3.236
16)	1.1000	9.18	0.04	-3.170	-3.582
17)	1.1083	9.18	0.04	-3.170	-3.928
18)	1.1167	9.18	0.04	-3.324	-4.278
19)	1.1250	9.17	0.03	-3.507	-4.624
20)	1.1333	9.17	0.03	-3.507	-4.970
21)	1.1417	9.16	0.02	-3.730	-5.320
22)	1.1500	9.16	0.02	-3.730	-5.666

Calculator for Finding Effective Well Radius (r_e)

This worksheet calculates the effective radius of the well casing/bore over which water level changes occur during the test. Effective radius should be used if the water level during the test is within the screened length of the well, and the hydraulic conductivity (K) of the pack material or the zone of development is significantly greater than the aquifer conductivity. Otherwise the radius of the well casing/bore or the open hole radius should be used. Use the calculated effective radius as the input (multiplied by 2 for diameter) for the Intake/Soil Column Diameter entry found on the Data Entry sheet.

Data Entry

(Use any consistent units for input.)

Actual inside screen radius (r_i):	<u>1.500E+00</u>
Radius of well bore or pack (r_o):	<u>3.000E+00</u>
Porosity of pack material or the developed zone (n):	<u>3.000E-01</u>

Calculated Result

Effective radius (r_e):	<u>2.068E+00</u>
Effective diameter:	<u>4.135E+00</u>

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-02D

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 12.05

Weather: Sunny, Clear

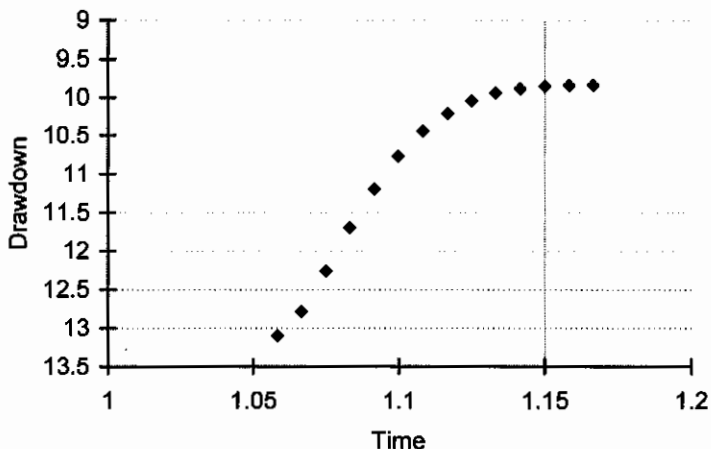
Project Name: Rockaway Park

Analysis By: M. Pype

Date Started: 9/18/02

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	74
Static W/L-Depth (ft.):	9.91
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	9.91
TOC Elevation (feet):	11.09
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	-51.95
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.039
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.0583	13.097						
1.0667	12.788						
1.075	12.262						
1.0833	11.702						
1.0917	11.194						
1.1	10.774						
1.1083	10.447						
1.1167	10.213						
1.125	10.05						
1.1333	9.945						
1.1417	9.886						
1.15	9.857						
1.1583	9.845						
1.1667	9.845						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

Client Name: Keyspan

Run Date:

Analysis By: M. Pype

Identification: RPMW-02D

[illegible]

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

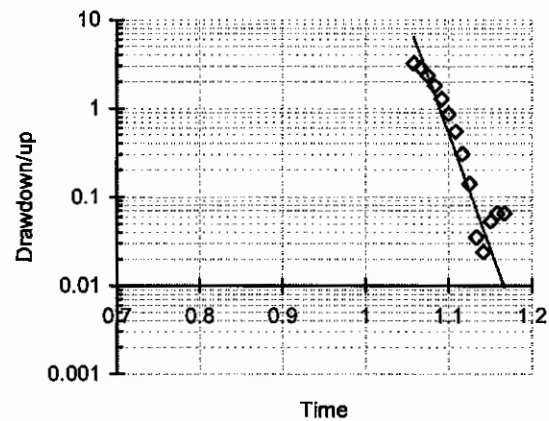
Client Name: Keyspan

Identification: RPMW-02D

Analysis By: M. Pype

Run Date:

Riser Pipe Diameter:	0.1667 feet
Intake Diameter:	0.55 feet
Intake Length:	10 feet
Saturated Column Length:	10 feet
Water Table Depth:	9.91 feet
Aquifer Thickness:	300 feet
Line Fit Starting No.:	1 Min 1 to
Line Fit Ending No.:	11 Max 14
Specify Output Units:	2 1 to 9
Hyd. Cond., K(h):	4.57E-02 ft./min.
Error of Fit:	2.384



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
1)	1.0583	13.10	3.19	1.159	1.854
2)	1.0667	12.79	2.88	1.057	1.351
3)	1.0750	12.26	2.35	0.855	0.853
4)	1.0833	11.70	1.79	0.583	0.355
5)	1.0917	11.19	1.28	0.250	-0.148
6)	1.1000	10.77	0.86	-0.146	-0.646
7)	1.1083	10.45	0.54	-0.622	-1.144
8)	1.1167	10.21	0.30	-1.194	-1.647
9)	1.1250	10.05	0.14	-1.966	-2.145
10)	1.1333	9.95	0.04	-3.352	-2.643
11)	1.1417	9.89	0.02	-3.730	-3.146
12)	1.1500	9.86	0.05	-2.937	-3.644
13)	1.1583	9.85	0.06	-2.733	-4.142
14)	1.1667	9.85	0.06	-2.733	-4.645

Calculator for Finding Effective Well Radius (r_e)

This worksheet calculates the effective radius of the well casing/bore over which water level changes occur during the test. Effective radius should be used if the water level during the test is within the screened length of the well, and the hydraulic conductivity (K) of the pack material or the zone of development is significantly greater than the aquifer conductivity. Otherwise the radius of the well casing/bore or the open hole radius should be used. Use the calculated effective radius as the input (multiplied by 2 for diameter) for the Intake/Soil Column Diameter entry found on the Data Entry sheet.

Data Entry

(Use any consistent units for input.)

Actual inside screen radius (r_i):	<u>1.500E+00</u>
Radius of well bore or pack (r_o):	<u>3.000E+00</u>
Porosity of pack material or the developed zone (n):	<u>3.000E-01</u>

Calculated Result

Effective radius (r_e):	<u>2.068E+00</u>
Effective diameter:	<u>4.135E+00</u>

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-02D2

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 12.05

Weather: Sunny, Clear

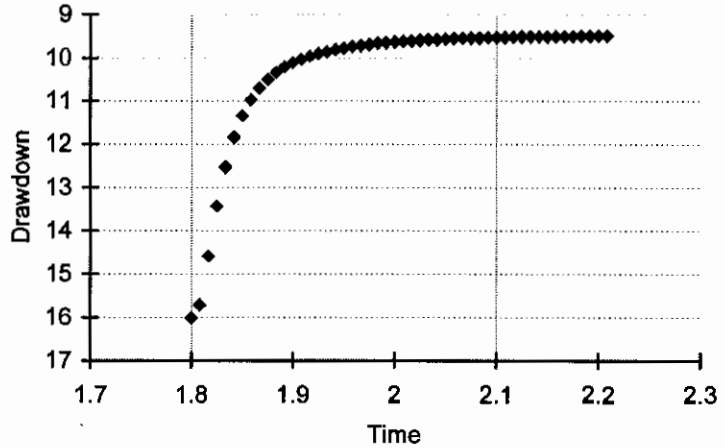
Project Name: Rockaway Park

Analysis By: M. Pye

Date Started: 9/18/02

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	74
Static W/L-Depth (ft.):	9.46
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	9.91
TOC Elevation (feet):	11.26
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	-82.95
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.039
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.8	16.021						
1.8083	15.707						
1.8167	14.596						
1.825	13.428						
1.8333	12.53						
1.8417	11.857						
1.85	11.35						
1.8583	10.982						
1.8667	10.708						
1.875	10.503						
1.8833	10.346						
1.8917	10.217						
1.9	10.124						
1.9083	10.036						
1.9167	9.966						
1.925	9.908						
1.9333	9.861						
1.9417	9.814						
1.95	9.779						
1.9583	9.744						
1.9667	9.721						
1.975	9.697						
1.9833	9.674						
1.9917	9.657						
2	9.639						
2.0083	9.627						
2.0167	9.616						
2.025	9.604						
2.0333	9.592						

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-02D2

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 12.05

Weather: Sunny, Clear

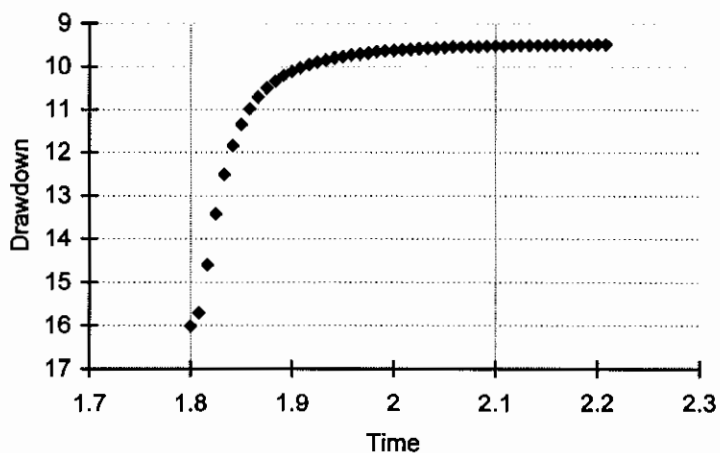
Project Name: Rockaway Park

Analysis By: M. Pye

Date Started: 9/18/02

BASIC TEST DATA

Measurement Units (1-6): 2
 Unconfined(1)/Confined(2): 1
 Well Depth - TOC (feet): 74
 Static W/L-Depth (ft.): 9.46
 Riser Pipe Diameter (feet): 0.1667
 Initial Test Depth Value (ft.): 9.91
 TOC Elevation (feet): 11.26
 Intake/Soil Col. Diam. (feet): 0.55
 Depth to Top of Pack (feet): -82.95
 Intake/Soil Col. Length (ft.): 10
 Saturat. Col. Thickness (ft.): 10
 Casing Soil Length (if appl.):
 Casing Stickup (feet):
 Slug Volume (ft^3): 0.039
 Thickness of Aquifer (feet): 300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
2.0417	9.587						
2.05	9.574						
2.0583	9.562						
2.0667	9.562						
2.075	9.556						
2.0833	9.551						
2.0917	9.545						
2.1	9.539						
2.1083	9.54						
2.1167	9.533						
2.125	9.527						
2.1333	9.527						
2.1417	9.527						
2.15	9.521						
2.1583	9.516						
2.1667	9.516						
2.175	9.516						
2.1833	9.51						
2.1917	9.51						
2.2	9.504						
2.2083	9.504						
2.2167	9.504						
2.225	9.504						
2.2333	9.504						
2.2417	9.498						
2.25	9.498						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

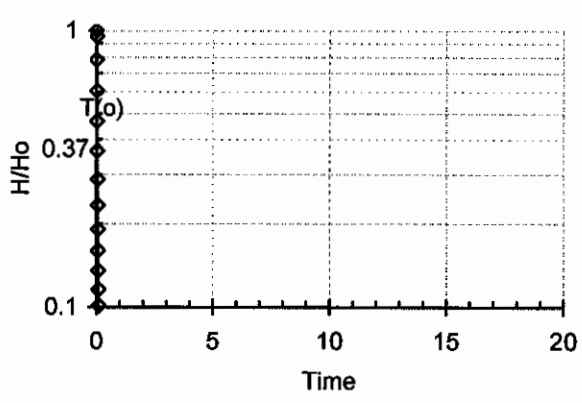
Project No.: 98248

Client Name: Keyspan

Run Date:

Analysis By: M. Pye

Identification: RPMW-02D2

Test Type: 7 1 to 7 Riser Pipe Diameter: 0.1667 feet Intake Diam.: 0.55 feet Intake Length: 10 feet Water Table Depth: 9.46 feet Line Fit Starting No.: 1 Min 1 to Line Fit Ending No.: 11 Max 50 Entrapped Air Correct.: N Y or N Specify Output Units: 3 1 to 9 Hyd Cond, K(h): 4.23E+01 ft./day Basic Time Lag: 0.04 min. Error of Fit: 0.0339					
Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	1.8	16.02	6.56	0.0000	0.1035
2)	1.8083	15.71	6.25	-0.0490	-0.1121
3)	1.8167	14.60	5.14	-0.2449	-0.3304
4)	1.825	13.43	3.97	-0.5029	-0.5461
5)	1.8333	12.53	3.07	-0.7595	-0.7617
6)	1.8417	11.86	2.40	-1.0069	-0.9800
7)	1.85	11.35	1.89	-1.2446	-1.1957
8)	1.8583	10.98	1.52	-1.4611	-1.4113
9)	1.8667	10.71	1.25	-1.6596	-1.6296
10)	1.875	10.50	1.04	-1.8390	-1.8453
11)	1.8833	10.35	0.89	-2.0022	-2.0609
12)	1.8917	10.22	0.76	-2.1595	-2.2792
13)	1.9	10.12	0.66	-2.2906	-2.4949
14)	1.9083	10.04	0.58	-2.4328	-2.7105
15)	1.9167	9.97	0.51	-2.5624	-2.9288
16)	1.925	9.91	0.45	-2.6841	-3.1445
17)	1.9333	9.86	0.40	-2.7949	-3.3601
18)	1.9417	9.81	0.35	-2.9196	-3.5784
19)	1.95	9.78	0.32	-3.0237	-3.7941
20)	1.9583	9.74	0.28	-3.1399	-4.0097
21)	1.9667	9.72	0.26	-3.2244	-4.2280
22)	1.975	9.70	0.24	-3.3208	-4.4437
23)	1.98	9.67	0.21	-3.4229	-4.6593
24)	1.99	9.66	0.20	-3.5057	-4.8776
25)	2.00	9.64	0.18	-3.6015	-5.0933

[illegible]

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

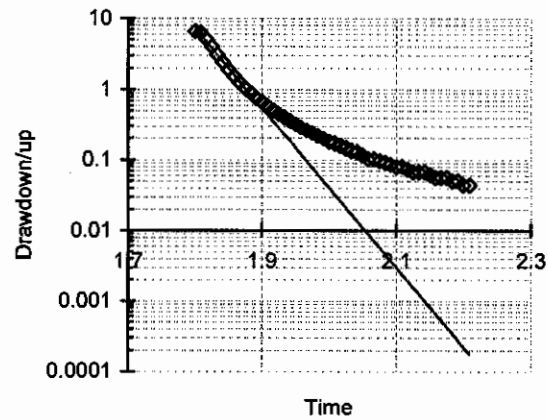
Client Name: Keyspan

Identification: RPMW-02D2

Analysis By: M. Pype

Run Date:

Riser Pipe Diameter:	0.1667 feet
Intake Diameter:	0.55 feet
Intake Length:	10 feet
Saturated Column Length:	10 feet
Water Table Depth:	9.46 feet
Aquifer Thickness:	300 feet
Line Fit Starting No.:	1 Min 1 to
Line Fit Ending No.:	11 Max 50
Specify Output Units:	2 1 to 9
Hyd. Cond., K(h):	1.98E-02 ft./min.
Error of Fit:	0.034



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
1)	1.8000	16.02	6.56	1.881	1.985
2)	1.8083	15.71	6.25	1.832	1.769
3)	1.8167	14.60	5.14	1.636	1.551
4)	1.8250	13.43	3.97	1.378	1.335
5)	1.8333	12.53	3.07	1.122	1.119
6)	1.8417	11.86	2.40	0.874	0.901
7)	1.8500	11.35	1.89	0.637	0.685
8)	1.8583	10.98	1.52	0.420	0.470
9)	1.8667	10.71	1.25	0.222	0.252
10)	1.8750	10.50	1.04	0.042	0.036
11)	1.8833	10.35	0.89	-0.121	-0.180
12)	1.8917	10.22	0.76	-0.278	-0.398
13)	1.9000	10.12	0.66	-0.409	-0.614
14)	1.9083	10.04	0.58	-0.552	-0.829
15)	1.9167	9.97	0.51	-0.681	-1.048
16)	1.9250	9.91	0.45	-0.803	-1.263
17)	1.9333	9.86	0.40	-0.914	-1.479
18)	1.9417	9.81	0.35	-1.038	-1.697
19)	1.9500	9.78	0.32	-1.143	-1.913
20)	1.9583	9.74	0.28	-1.259	-2.129
21)	1.9667	9.72	0.26	-1.343	-2.347
22)	1.9750	9.70	0.24	-1.440	-2.563
23)	1.98	9.67	0.21	-1.542	-2.778
24)	1.99	9.66	0.20	-1.625	-2.996

25)	2.00	9.64	0.18		-1.720	-3.212
26)	2.01	9.63	0.17		-1.790	-3.428
27)	2.02	9.62	0.16		-1.858	-3.646
28)	2.03	9.60	0.14		-1.938	-3.862
29)	2.03	9.59	0.13		-2.025	-4.077
30)	2.04	9.59	0.13		-2.064	-4.296
31)	2.05	9.57	0.11		-2.172	-4.511
32)	2.06	9.56	0.10		-2.283	-4.727
33)	2.07	9.56	0.10		-2.283	-4.945
34)	2.08	9.56	0.10		-2.343	-5.161
35)	2.08	9.55	0.09		-2.397	-5.377
36)	2.09	9.55	0.08		-2.465	-5.595
37)	2.10	9.54	0.08		-2.538	-5.811
38)	2.11	9.54	0.08		-2.526	-6.026
39)	2.12	9.53	0.07		-2.617	-6.244
40)	2.13	9.53	0.07		-2.703	-6.460
41)	2.13	9.53	0.07		-2.703	-6.676
42)	2.14	9.53	0.07		-2.703	-6.894
43)	2.15	9.52	0.06		-2.797	-7.110
44)	2.16	9.52	0.06		-2.882	-7.325
45)	2.17	9.52	0.06		-2.882	-7.544
46)	2.18	9.52	0.06		-2.882	-7.759
47)	2.18	9.51	0.05		-2.996	-7.975
48)	2.19	9.51	0.05		-2.996	-8.193
49)	2.20	9.50	0.04		-3.124	-8.409
50)	2.21	9.50	0.04		-3.124	-8.625

Calculator for Finding Effective Well Radius (r_e)

This worksheet calculates the effective radius of the well casing/bore over which water level changes occur during the test. Effective radius should be used if the water level during the test is within the screened length of the well, and the hydraulic conductivity (K) of the pack material or the zone of development is significantly greater than the aquifer conductivity. Otherwise the radius of the well casing/bore or the open hole radius should be used. Use the calculated effective radius as the input (multiplied by 2 for diameter) for the Intake/Soil Column Diameter entry found on the Data Entry sheet.

Data Entry

(Use any consistent units for input.)

Actual inside screen radius (r_i):	<u>1.500E+00</u>
Radius of well bore or pack (r_o):	<u>3.000E+00</u>
Porosity of pack material or the developed zone (n):	<u>3.000E-01</u>

Calculated Result

Effective radius (r_e):	<u>2.068E+00</u>
Effective diameter:	<u>4.135E+00</u>

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-10S

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: _____

Weather: Sunny, Clear

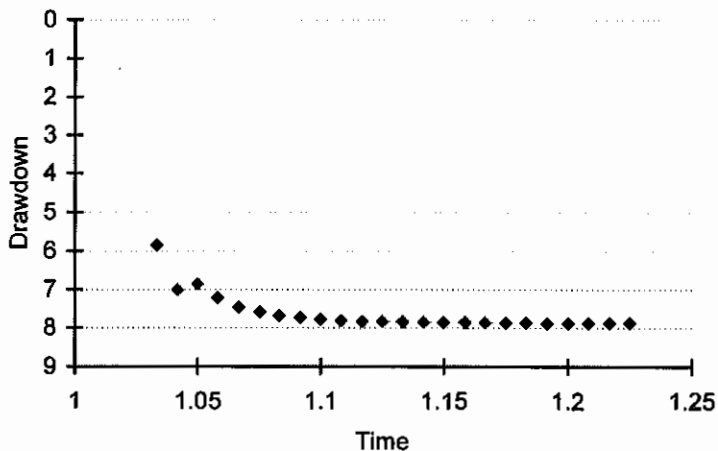
Project Name: Rockaway Park

Analysis By: M. Pye

Date Started: _____

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	17
Static W/L-Depth (ft.):	9.45
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	23.5
TOC Elevation (feet):	11.14
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	5
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	_____
Casing Stickup (feet):	_____
Slug Volume (ft ³):	0.0195
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.0333	5.859						
1.0417	7.008						
1.05	6.862						
1.0583	7.229						
1.0667	7.457						
1.075	7.597						
1.0833	7.69						
1.0917	7.748						
1.1	7.783						
1.1083	7.813						
1.1167	7.824						
1.125	7.842						
1.1333	7.848						
1.1417	7.853						
1.15	7.859						
1.1583	7.865						
1.1667	7.865						
1.175	7.871						
1.1833	7.871						
1.1917	7.877						
1.2	7.877						
1.2083	7.883						
1.2167	7.883						
1.225	7.883						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

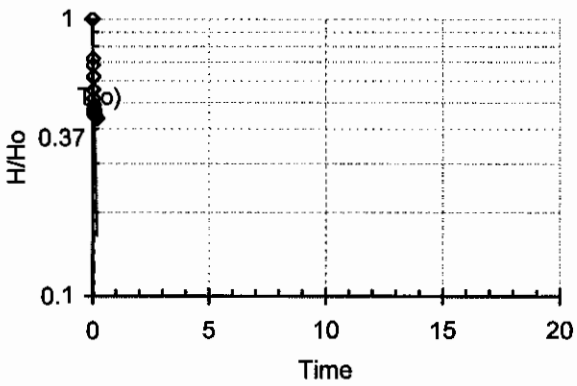
Project No.: 98248

Client Name: Keyspan

Run Date: _____

Analysis By: M. Pye

Identification: RPMW-10S

Test Type: <u>7</u> 1 to 7 Riser Pipe Diameter: <u>0.1667</u> feet Intake Diam.: <u>0.55</u> feet Intake Length: <u>10</u> feet Water Table Depth: <u>9.45</u> feet Line Fit Starting No.: <u>1</u> Min 1 to Line Fit Ending No.: <u>11</u> Max 24 Entrapped Air Correct.: <u>N</u> Y or N Specify Output Units: <u>3</u> 1 to 9 Hyd Cond, K(h): <u>1.91E+01</u> ft./day Basic Time Lag: <u>0.09</u> min. Error of Fit: <u>0.1043</u>					
Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	1.03	5.86	3.59	0.0000	-0.2252
2)	1.04	7.01	2.44	-0.3856	-0.2943
3)	1.05	6.86	2.59	-0.3275	-0.3625
4)	1.06	7.23	2.22	-0.4805	-0.4308
5)	1.07	7.46	1.99	-0.5888	-0.4998
6)	1.08	7.60	1.85	-0.6616	-0.5681
7)	1.08	7.69	1.76	-0.7131	-0.6363
8)	1.09	7.75	1.70	-0.7466	-0.7054
9)	1.10	7.78	1.67	-0.7674	-0.7737
10)	1.11	7.81	1.64	-0.7856	-0.8419
11)	1.12	7.82	1.63	-0.7923	-0.9110
12)	1.13	7.84	1.61	-0.8034	-0.9792
13)	1.13	7.85	1.60	-0.8072	-1.0475
14)	1.14	7.85	1.60	-0.8103	-1.1166
15)	1.15	7.86	1.59	-0.8141	-1.1848
16)	1.16	7.87	1.59	-0.8178	-1.2530
17)	1.17	7.87	1.59	-0.8178	-1.3221
18)	1.18	7.87	1.58	-0.8216	-1.3904
19)	1.18	7.87	1.58	-0.8216	-1.4586
20)	1.19	7.88	1.57	-0.8254	-1.5277
21)	1.20	7.88	1.57	-0.8254	-1.5959
22)	1.21	7.88	1.57	-0.8293	-1.6642
23)	1.22	7.88	1.57	-0.8293	-1.7333
24)	1.23	7.88	1.57	-0.8293	-1.8015

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

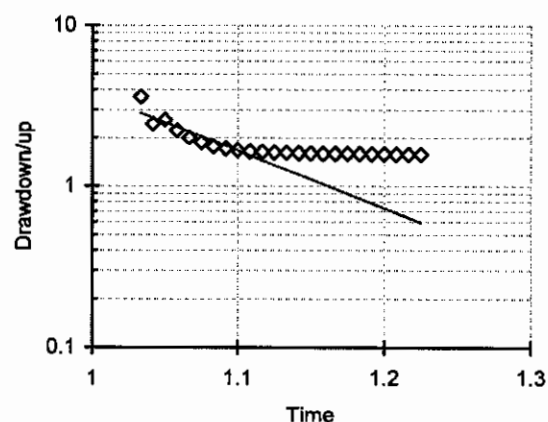
Client Name: Keyspan

Identification: RPMW-10S

Analysis By: M. Pype

Run Date:

Riser Pipe Diameter:	0.1667 feet
Intake Diameter:	0.55 feet
Intake Length:	10 feet
Saturated Column Length:	10 feet
Water Table Depth:	9.45 feet
Aquifer Thickness:	300 feet
Line Fit Starting No.:	1 Min 1 to
Line Fit Ending No.:	11 Max 24
Specify Output Units:	2 1 to 9
Hyd. Cond., K(h):	6.27E-03 ft./min.
Error of Fit:	0.104



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
1)	1.03	5.86	3.59	1.278	1.053
2)	1.04	7.01	2.44	0.893	0.984
3)	1.05	6.86	2.59	0.951	0.916
4)	1.06	7.23	2.22	0.798	0.848
5)	1.07	7.46	1.99	0.690	0.779
6)	1.08	7.60	1.85	0.617	0.710
7)	1.08	7.69	1.76	0.565	0.642
8)	1.09	7.75	1.70	0.532	0.573
9)	1.10	7.78	1.67	0.511	0.505
10)	1.11	7.81	1.64	0.493	0.437
11)	1.12	7.82	1.63	0.486	0.367
12)	1.13	7.84	1.61	0.475	0.299
13)	1.13	7.85	1.60	0.471	0.231
14)	1.14	7.85	1.60	0.468	0.162
15)	1.15	7.86	1.59	0.464	0.094
16)	1.16	7.87	1.59	0.461	0.025
17)	1.17	7.87	1.59	0.461	-0.044
18)	1.18	7.87	1.58	0.457	-0.112
19)	1.18	7.87	1.58	0.457	-0.180
20)	1.19	7.88	1.57	0.453	-0.249
21)	1.20	7.88	1.57	0.453	-0.318
22)	1.21	7.88	1.57	0.449	-0.386
23)	1.22	7.88	1.57	0.449	-0.455
24)	1.23	7.88	1.57	0.449	-0.523

Calculator for Finding Effective Well Radius (r_e)

This worksheet calculates the effective radius of the well casing/bore over which water level changes occur during the test. Effective radius should be used if the water level during the test is within the screened length of the well, and the hydraulic conductivity (K) of the pack material or the zone of development is significantly greater than the aquifer conductivity. Otherwise the radius of the well casing/bore or the open hole radius should be used. Use the calculated effective radius as the input (multiplied by 2 for diameter) for the Intake/Soil Column Diameter entry found on the Data Entry sheet.

Data Entry

(Use any consistent units for input.)

Actual inside screen radius (r_i): 1.500E+00
Radius of well bore or pack (r_o): 3.000E+00
Porosity of pack material or
the developed zone (n): 3.000E-01

Calculated Result

Effective radius (r_e): 2.068E+00
Effective diameter: 4.135E+00

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-10I

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: _____

Weather: Sunny, Clear

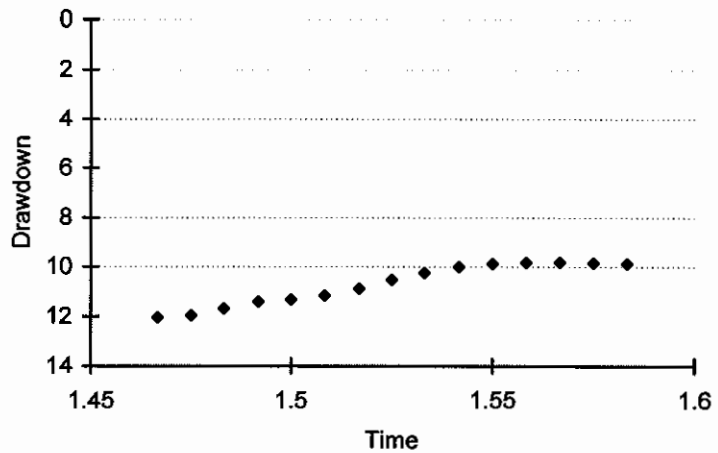
Project Name: Rockaway Park

Analysis By: M. Pye

Date Started: _____

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	45
Static W/L-Depth (ft.):	9.89
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	9.89
TOC Elevation (feet):	11.18
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	-23.82
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.039
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.4667	12.055						
1.475	11.973						
1.4833	11.693						
1.4917	11.413						
1.5	11.343						
1.5083	11.18						
1.5167	10.876						
1.525	10.526						
1.5333	10.228						
1.5417	10.006						
1.55	9.878						
1.5583	9.826						
1.5667	9.826						
1.575	9.837						
1.5833	9.866						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project No.: 98248

Run Date:

Identification: RPMW-10I

[illegible]

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

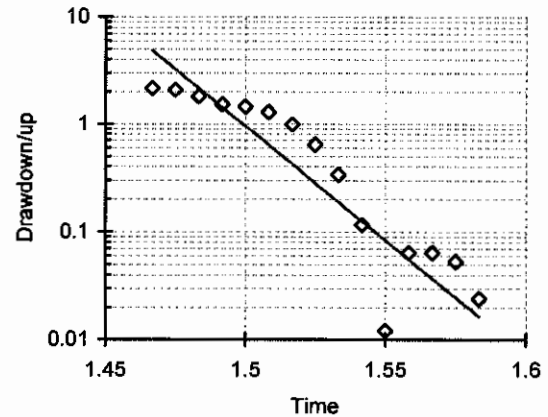
Client Name: Keyspan

Identification: RPMW-10I

Analysis By: M. Pype

Run Date: _____

Riser Pipe Diameter:	0.1667 feet
Intake Diameter:	0.55 feet
Intake Length:	10 feet
Saturated Column Length:	10 feet
Water Table Depth:	9.89 feet
Aquifer Thickness:	300 feet
Line Fit Starting No.:	1 Min 1 to
Line Fit Ending No.:	11 Max 15
Specify Output Units:	2 1 to 9
Hyd. Cond., K(h):	3.72E-02 ft./min.
Error of Fit:	7.034



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
1)	1.47	12.06	2.17	0.772	1.577
2)	1.48	11.97	2.08	0.734	1.172
3)	1.48	11.69	1.80	0.589	0.768
4)	1.49	11.41	1.52	0.421	0.358
5)	1.50	11.34	1.45	0.374	-0.047
6)	1.51	11.18	1.29	0.255	-0.451
7)	1.52	10.88	0.99	-0.014	-0.861
8)	1.53	10.53	0.64	-0.453	-1.266
9)	1.53	10.23	0.34	-1.085	-1.670
10)	1.54	10.01	0.12	-2.154	-2.080
11)	1.55	9.88	0.01	-4.423	-2.484
12)	1.56	9.83	0.06	-2.749	-2.889
13)	1.57	9.83	0.06	-2.749	-3.299
14)	1.58	9.84	0.05	-2.937	-3.703
15)	1.58	9.87	0.02	-3.730	-4.108

Calculator for Finding Effective Well Radius (r_e)

This worksheet calculates the effective radius of the well casing/bore over which water level changes occur during the test. Effective radius should be used if the water level during the test is within the screened length of the well, and the hydraulic conductivity (K) of the pack material or the zone of development is significantly greater than the aquifer conductivity. Otherwise the radius of the well casing/bore or the open hole radius should be used. Use the calculated effective radius as the input (multiplied by 2 for diameter) for the Intake/Soil Column Diameter entry found on the Data Entry sheet.

Data Entry

(Use any consistent units for input.)

Actual inside screen radius (r_i):	<u>1.500E+00</u>
Radius of well bore or pack (r_o):	<u>3.000E+00</u>
Porosity of pack material or the developed zone (n):	<u>3.000E-01</u>

Calculated Result

Effective radius (r_e):	<u>2.068E+00</u>
Effective diameter:	<u>4.135E+00</u>

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-12S

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: _____

Weather: Sunny, Clear

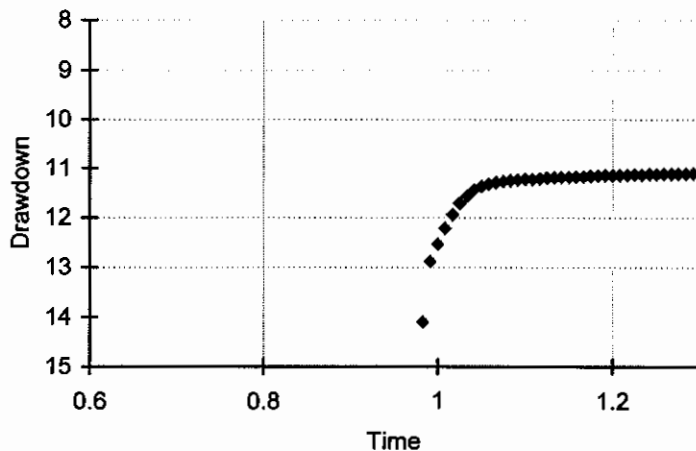
Project Name: Rockaway Park

Analysis By: M. Pye

Date Started: _____

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	15
Static W/L-Depth (ft.):	10.95
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	10.95
TOC Elevation (feet):	13.46
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	5.24
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.0195
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.9833	14.098						
0.9917	12.885						
1	12.536						
1.0083	12.215						
1.0167	11.941						
1.025	11.719						
1.0333	11.568						
1.0417	11.439						
1.05	11.369						
1.0583	11.323						
1.0667	11.288						
1.075	11.27						
1.0833	11.253						
1.0917	11.241						
1.1	11.229						
1.1083	11.224						
1.1167	11.212						
1.125	11.2						
1.1333	11.194						
1.1417	11.189						
1.15	11.183						
1.1583	11.171						
1.1667	11.171						
1.175	11.159						
1.1833	11.154						
1.1917	11.148						
1.2	11.148						
1.2083	11.142						
1.2167	11.142						

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-12S

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: _____

Weather: Sunny, Clear

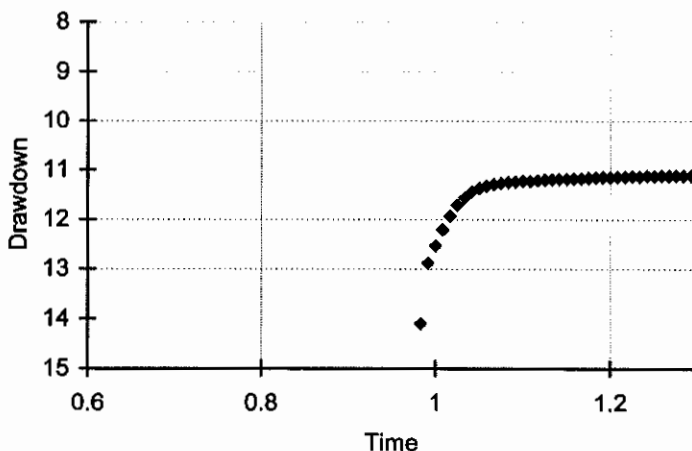
Project Name: Rockaway Park

Analysis By: M. Pype

Date Started: _____

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	15
Static W/L-Depth (ft.):	10.95
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	10.95
TOC Elevation (feet):	13.46
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	5.24
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.0195
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.225	11.13						
1.2333	11.136						
1.2417	11.124						
1.25	11.124						
1.2583	11.119						
1.2667	11.119						
1.275	11.119						
1.2833	11.113						
1.2917	11.107						
1.3	11.107						
1.3083	11.101						
1.3167	11.095						
1.325	11.095						
1.3333	11.095						
1.3417	11.089						
1.35	11.089						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

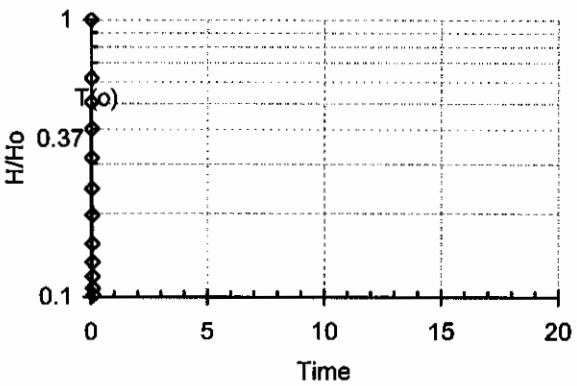
Project No.: 98248

Client Name: Keyspan

Run Date: _____

Analysis By: M. Pye

Identification: RPMW-12S

Test Type: <u>7</u> 1 to 7 Riser Pipe Diameter: <u>0.1667</u> feet Intake Diam.: <u>0.55</u> feet Intake Length: <u>10</u> feet Water Table Depth: <u>10.95</u> feet Line Fit Starting No.: <u>1</u> Min 1 to Line Fit Ending No.: <u>11</u> Max 45 Entrapped Air Correct.: <u>N</u> Y or N Specify Output Units: <u>3</u> 1 to 9 Hyd Cond, K(h): <u>6.09E+01</u> ft./day Basic Time Lag: <u>0.03</u> min. Error of Fit: <u>0.1225</u>					
Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.98	14.10	3.15	0.0000	-0.2234
2)	0.99	12.89	1.94	-0.4867	-0.4443
3)	1.00	12.54	1.59	-0.6856	-0.6626
4)	1.01	12.22	1.27	-0.9117	-0.8809
5)	1.02	11.94	0.99	-1.1558	-1.1018
6)	1.03	11.72	0.77	-1.4094	-1.3200
7)	1.03	11.57	0.62	-1.6280	-1.5383
8)	1.04	11.44	0.49	-1.8622	-1.7592
9)	1.05	11.37	0.42	-2.0167	-1.9775
10)	1.06	11.32	0.37	-2.1329	-2.1957
11)	1.07	11.29	0.34	-2.2315	-2.4167
12)	1.08	11.27	0.32	-2.2862	-2.6349
13)	1.08	11.25	0.30	-2.3408	-2.8532
14)	1.09	11.24	0.29	-2.3812	-3.0741
15)	1.10	11.23	0.28	-2.4233	-3.2924
16)	1.11	11.22	0.27	-2.4414	-3.5106
17)	1.12	11.21	0.26	-2.4862	-3.7315
18)	1.13	11.20	0.25	-2.5331	-3.9498
19)	1.13	11.19	0.24	-2.5574	-4.1681
20)	1.14	11.19	0.24	-2.5781	-4.3890
21)	1.15	11.18	0.23	-2.6035	-4.6072
22)	1.16	11.17	0.22	-2.6564	-4.8255
23)	1.17	11.17	0.22	-2.6564	-5.0464
24)	1.18	11.16	0.21	-2.7122	-5.2647
25)	1.18	11.15	0.20	-2.7364	-5.4830

[illegible]

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

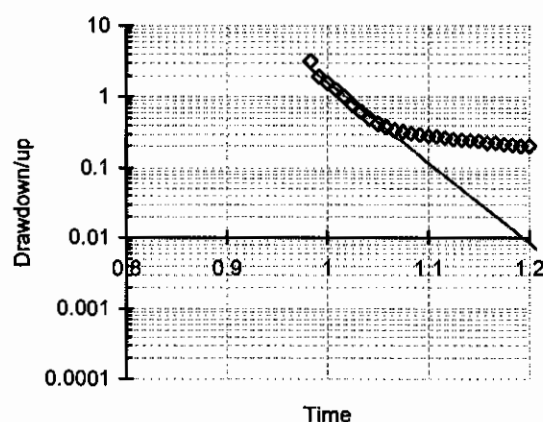
Client Name: Keyspan

Identification: RPMW-12S

Analysis By: M. Pype

Run Date:

Riser Pipe Diameter:	0.1667 feet
Intake Diameter:	0.55 feet
Intake Length:	10 feet
Saturated Column Length:	10 feet
Water Table Depth:	10.95 feet
Aquifer Thickness:	300 feet
Line Fit Starting No.:	1 Min 1 to
Line Fit Ending No.:	11 Max 45
Specify Output Units:	2 1 to 9
Hyd. Cond., K(h):	2.01E-02 ft./min.
Error of Fit:	0.123



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.98	14.10	3.15	1.147	0.923
2)	0.99	12.89	1.94	0.660	0.702
3)	1.00	12.54	1.59	0.461	0.484
4)	1.01	12.22	1.27	0.235	0.266
5)	1.02	11.94	0.99	-0.009	0.045
6)	1.03	11.72	0.77	-0.263	-0.173
7)	1.03	11.57	0.62	-0.481	-0.392
8)	1.04	11.44	0.49	-0.715	-0.612
9)	1.05	11.37	0.42	-0.870	-0.831
10)	1.06	11.32	0.37	-0.986	-1.049
11)	1.07	11.29	0.34	-1.085	-1.270
12)	1.08	11.27	0.32	-1.139	-1.488
13)	1.08	11.25	0.30	-1.194	-1.706
14)	1.09	11.24	0.29	-1.234	-1.927
15)	1.10	11.23	0.28	-1.277	-2.146
16)	1.11	11.22	0.27	-1.295	-2.364
17)	1.12	11.21	0.26	-1.339	-2.585
18)	1.13	11.20	0.25	-1.386	-2.803
19)	1.13	11.19	0.24	-1.411	-3.021
20)	1.14	11.19	0.24	-1.431	-3.242
21)	1.15	11.18	0.23	-1.457	-3.460
22)	1.16	11.17	0.22	-1.510	-3.679
23)	1.17	11.17	0.22	-1.510	-3.900
24)	1.18	11.16	0.21	-1.565	-4.118

25)	1.18	11.15	0.20		-1.590	-4.336
26)	1.19	11.15	0.20		-1.619	-4.557
27)	1.20	11.15	0.20		-1.619	-4.775
28)	1.21	11.14	0.19		-1.650	-4.994
29)	1.22	11.14	0.19		-1.650	-5.215
30)	1.23	11.13	0.18		-1.715	-5.433
31)	1.23	11.14	0.19		-1.682	-5.651
32)	1.24	11.12	0.17		-1.749	-5.872
33)	1.25	11.12	0.17		-1.749	-6.090
34)	1.26	11.12	0.17		-1.778	-6.309
35)	1.27	11.12	0.17		-1.778	-6.529
36)	1.28	11.12	0.17		-1.778	-6.748
37)	1.28	11.11	0.16		-1.814	-6.966
38)	1.29	11.11	0.16		-1.852	-7.187
39)	1.30	11.11	0.16		-1.852	-7.405
40)	1.31	11.10	0.15		-1.890	-7.623
41)	1.32	11.10	0.15		-1.931	-7.844
42)	1.33	11.10	0.15		-1.931	-8.063
43)	1.33	11.10	0.15		-1.931	-8.281
44)	1.34	11.09	0.14		-1.973	-8.502
45)	1.35	11.09	0.14		-1.973	-8.720

Calculator for Finding Effective Well Radius (r_e)

This worksheet calculates the effective radius of the well casing/bore over which water level changes occur during the test. Effective radius should be used if the water level during the test is within the screened length of the well, and the hydraulic conductivity (K) of the pack material or the zone of development is significantly greater than the aquifer conductivity. Otherwise the radius of the well casing/bore or the open hole radius should be used. Use the calculated effective radius as the input (multiplied by 2 for diameter) for the Intake/Soil Column Diameter entry found on the Data Entry sheet.

Data Entry

(Use any consistent units for input.)

Actual inside screen radius (r_i): 1.500E+00

Radius of well bore or pack (r_o): 3.000E+00

Porosity of pack material or
the developed zone (n): 3.000E-01

Calculated Result

Effective radius (r_e): 2.068E+00

Effective diameter: 4.135E+00

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-12I

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 10.26

Weather: Sunny, Clear

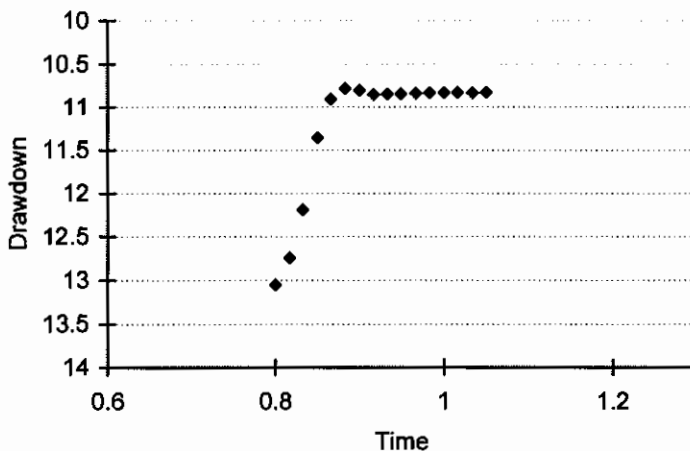
Project Name: Rockaway Park

Analysis By: M. Pye

Date Started: _____

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	45
Static W/L-Depth (ft.):	10.95
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	10.95
TOC Elevation (feet):	13.34
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	-24.74
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.039
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.8	13.056						
0.8167	12.746						
0.8333	12.198						
0.85	11.363						
0.8667	10.908						
0.8833	10.786						
0.9	10.809						
0.9167	10.845						
0.9333	10.851						
0.95	10.845						
0.9667	10.839						
0.9833	10.832						
1	10.832						
1.0167	10.832						
1.0333	10.832						
1.05	10.832						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project No.: 98248

Run Date:

Identification: RPMW-12I

[illegible]

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

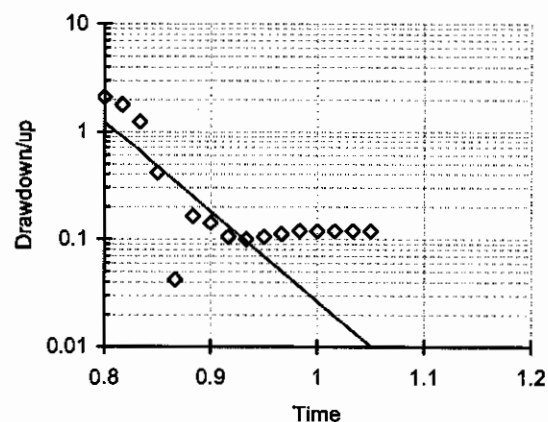
Client Name: Keyspan

Identification: RPMW-12I

Analysis By: M. Pype

Run Date: _____

Riser Pipe Diameter:	0.1667 feet
Intake Diameter:	0.55 feet
Intake Length:	10 feet
Saturated Column Length:	10 feet
Water Table Depth:	10.95 feet
Aquifer Thickness:	300 feet
Line Fit Starting No.:	1 Min 1 to
Line Fit Ending No.:	11 Max 16
Specify Output Units:	2 1 to 9
Hyd. Cond., K(h):	1.46E-02 ft./min.
Error of Fit:	6.710



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.80	13.06	2.11	0.745	0.210
2)	0.82	12.75	1.80	0.586	-0.110
3)	0.83	12.20	1.25	0.222	-0.429
4)	0.85	11.36	0.41	-0.884	-0.750
5)	0.87	10.91	0.04	-3.170	-1.070
6)	0.88	10.79	0.16	-1.808	-1.389
7)	0.90	10.81	0.14	-1.959	-1.710
8)	0.92	10.85	0.10	-2.254	-2.030
9)	0.93	10.85	0.10	-2.313	-2.349
10)	0.95	10.85	0.10	-2.254	-2.670
11)	0.97	10.84	0.11	-2.198	-2.991
12)	0.98	10.83	0.12	-2.137	-3.309
13)	1.00	10.83	0.12	-2.137	-3.630
14)	1.02	10.83	0.12	-2.137	-3.951
15)	1.03	10.83	0.12	-2.137	-4.269
16)	1.05	10.83	0.12	-2.137	-4.590

Calculator for Finding Effective Well Radius (r_e)

This worksheet calculates the effective radius of the well casing/bore over which water level changes occur during the test. Effective radius should be used if the water level during the test is within the screened length of the well, and the hydraulic conductivity (K) of the pack material or the zone of development is significantly greater than the aquifer conductivity. Otherwise the radius of the well casing/bore or the open hole radius should be used. Use the calculated effective radius as the input (multiplied by 2 for diameter) for the Intake/Soil Column Diameter entry found on the Data Entry sheet.

Data Entry

(Use any consistent units for input.)

Actual inside screen radius (r_i): 1.500E+00
Radius of well bore or pack (r_o): 3.000E+00
Porosity of pack material or
the developed zone (n): 3.000E-01

Calculated Result

Effective radius (r_e): 2.068E+00
Effective diameter: 4.135E+00

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-12D

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 9.94

Weather: Sunny, Clear

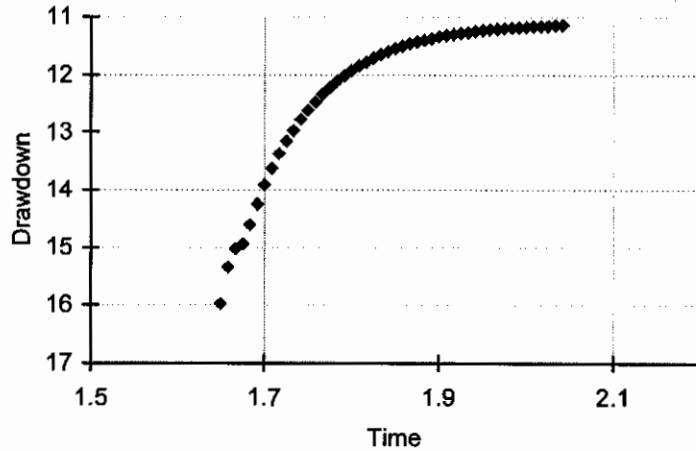
Project Name: Rockaway Park

Analysis By: M. Pye

Date Started: _____

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	77.77
Static W/L-Depth (ft.):	11.16
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	11.16
TOC Elevation (feet):	12.71
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	-65.06
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.039
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.65	15.975						
1.6583	15.344						
1.6667	15.023						
1.675	14.935						
1.6833	14.609						
1.6917	14.252						
1.7	13.92						
1.7083	13.633						
1.7167	13.377						
1.725	13.155						
1.7333	12.985						
1.7417	12.775						
1.75	12.612						
1.7583	12.472						
1.7667	12.337						
1.775	12.22						
1.7833	12.11						
1.7917	12.016						
1.8	11.929						
1.8083	11.847						
1.8167	11.777						
1.825	11.713						
1.8333	11.654						
1.8417	11.602						
1.85	11.549						
1.8583	11.508						
1.8667	11.467						
1.875	11.438						
1.8833	11.403						

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-12D

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 9.94

Weather: Sunny, Clear

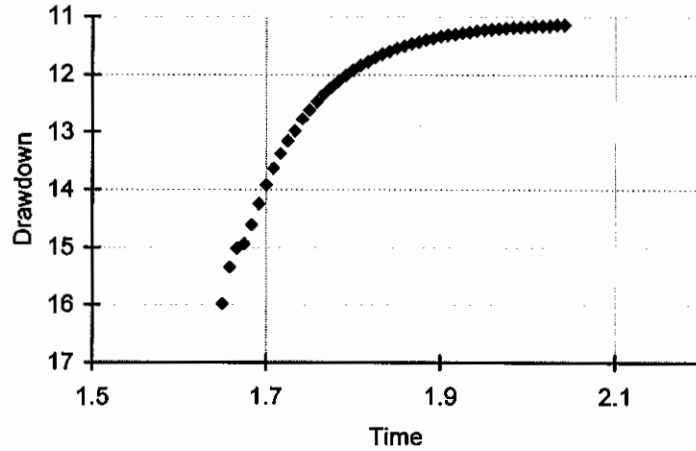
Project Name: Rockaway Park

Analysis By: M. Pype

Date Started: _____

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	77.77
Static W/L-Depth (ft.):	11.16
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	11.16
TOC Elevation (feet):	12.71
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	-65.06
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.039
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.8917	11.374						
1.9	11.345						
1.9083	11.321						
1.9167	11.304						
1.925	11.286						
1.9333	11.269						
1.9417	11.251						
1.95	11.234						
1.9583	11.222						
1.9667	11.21						
1.975	11.199						
1.9833	11.187						
1.9917	11.181						
2	11.175						
2.0083	11.164						
2.0167	11.158						
2.025	11.158						
2.0333	11.146						
2.0417	11.146						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

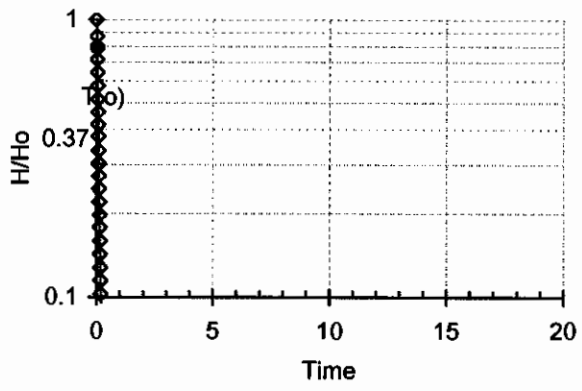
Project No.: 98248

Client Name: Keyspan

Run Date: _____

Analysis By: M. Pye

Identification: RPMW-12D

Test Type: <u>7</u> 1 to 7 Riser Pipe Diameter: <u>0.1667</u> feet Intake Diam.: <u>0.55</u> feet Intake Length: <u>10</u> feet Water Table Depth: <u>11.16</u> feet Line Fit Starting No.: <u>1</u> Min 1 to Line Fit Ending No.: <u>11</u> Max 48 Entrapped Air Correct.: <u>N</u> Y or N Specify Output Units: <u>3</u> 1 to 9 Hyd Cond, K(h): <u>2.06E+01</u> ft./day Basic Time Lag: <u>0.09</u> min. Error of Fit: <u>0.0093</u>					
Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	1.65	15.98	4.82	0.0000	0.0040
2)	1.66	15.34	4.18	-0.1405	-0.0915
3)	1.67	15.02	3.86	-0.2203	-0.1882
4)	1.68	14.94	3.78	-0.2433	-0.2837
5)	1.68	14.61	3.45	-0.3337	-0.3792
6)	1.69	14.25	3.09	-0.4429	-0.4759
7)	1.70	13.92	2.76	-0.5565	-0.5714
8)	1.71	13.63	2.47	-0.6663	-0.6669
9)	1.72	13.38	2.22	-0.7756	-0.7636
10)	1.73	13.16	2.00	-0.8811	-0.8591
11)	1.73	12.99	1.83	-0.9702	-0.9546
12)	1.74	12.78	1.62	-1.0924	-1.0513
13)	1.75	12.61	1.45	-1.1988	-1.1468
14)	1.76	12.47	1.31	-1.3002	-1.2423
15)	1.77	12.34	1.18	-1.4088	-1.3390
16)	1.78	12.22	1.06	-1.5135	-1.4345
17)	1.78	12.11	0.95	-1.6230	-1.5300
18)	1.79	12.02	0.86	-1.7272	-1.6267
19)	1.80	11.93	0.77	-1.8344	-1.7222
20)	1.81	11.85	0.69	-1.9472	-1.8177
21)	1.82	11.78	0.62	-2.0546	-1.9144
22)	1.83	11.71	0.55	-2.1641	-2.0099
23)	1.83	11.65	0.49	-2.2770	-2.1054
24)	1.84	11.60	0.44	-2.3882	-2.2020
25)	1.85	11.55	0.39	-2.5159	-2.2976

[illegible]

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

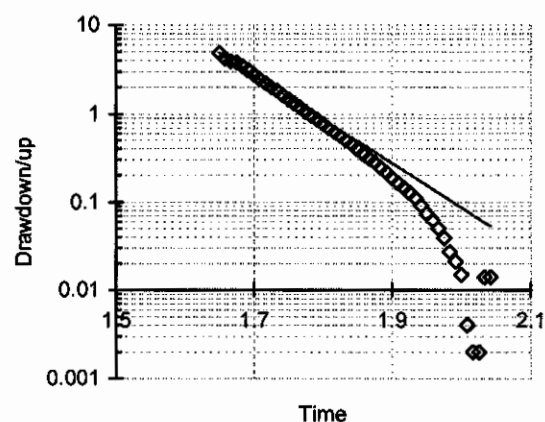
Client Name: Keyspan

Identification: RPMW-12D

Analysis By: M. Pype

Run Date:

Riser Pipe Diameter:	0.1667 feet
Intake Diameter:	0.55 feet
Intake Length:	10 feet
Saturated Column Length:	10 feet
Water Table Depth:	11.16 feet
Aquifer Thickness:	300 feet
Line Fit Starting No.:	1 Min 1 to
Line Fit Ending No.:	11 Max 48
Specify Output Units:	2 1 to 9
Hyd. Cond., K(h):	8.78E-03 ft./min.
Error of Fit:	0.009



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
1)	1.65	15.98	4.82	1.572	1.576
2)	1.66	15.34	4.18	1.431	1.480
3)	1.67	15.02	3.86	1.351	1.384
4)	1.68	14.94	3.78	1.328	1.288
5)	1.68	14.61	3.45	1.238	1.192
6)	1.69	14.25	3.09	1.129	1.096
7)	1.70	13.92	2.76	1.015	1.000
8)	1.71	13.63	2.47	0.905	0.905
9)	1.72	13.38	2.22	0.796	0.808
10)	1.73	13.16	2.00	0.691	0.713
11)	1.73	12.99	1.83	0.602	0.617
12)	1.74	12.78	1.62	0.479	0.520
13)	1.75	12.61	1.45	0.373	0.425
14)	1.76	12.47	1.31	0.272	0.329
15)	1.77	12.34	1.18	0.163	0.233
16)	1.78	12.22	1.06	0.058	0.137
17)	1.78	12.11	0.95	-0.051	0.042
18)	1.79	12.02	0.86	-0.155	-0.055
19)	1.80	11.93	0.77	-0.263	-0.150
20)	1.81	11.85	0.69	-0.375	-0.246
21)	1.82	11.78	0.62	-0.483	-0.343
22)	1.83	11.71	0.55	-0.592	-0.438
23)	1.83	11.65	0.49	-0.705	-0.534
24)	1.84	11.60	0.44	-0.816	-0.630

25)	1.85	11.55	0.39		-0.944	-0.726
26)	1.86	11.51	0.35		-1.056	-0.821
27)	1.87	11.47	0.31		-1.181	-0.918
28)	1.88	11.44	0.28		-1.280	-1.014
29)	1.88	11.40	0.24		-1.415	-1.109
30)	1.89	11.37	0.21		-1.542	-1.206
31)	1.90	11.35	0.19		-1.687	-1.301
32)	1.91	11.32	0.16		-1.826	-1.397
33)	1.92	11.30	0.14		-1.938	-1.493
34)	1.93	11.29	0.13		-2.071	-1.589
35)	1.93	11.27	0.11		-2.216	-1.684
36)	1.94	11.25	0.09		-2.397	-1.781
37)	1.95	11.23	0.07		-2.604	-1.877
38)	1.96	11.22	0.06		-2.781	-1.972
39)	1.97	11.21	0.05		-2.996	-2.069
40)	1.98	11.20	0.04		-3.244	-2.164
41)	1.98	11.19	0.03		-3.612	-2.260
42)	1.99	11.18	0.02		-3.863	-2.356
43)	2.00	11.18	0.02		-4.200	-2.452
44)	2.01	11.16	0.00		-5.521	-2.547
45)	2.02	11.16	0.00		-6.215	-2.644
46)	2.03	11.16	0.00		-6.215	-2.740
47)	2.03	11.15	0.01		-4.269	-2.835
48)	2.04	11.15	0.01		-4.269	-2.932

Calculator for Finding Effective Well Radius (r_e)

This worksheet calculates the effective radius of the well casing/bore over which water level changes occur during the test. Effective radius should be used if the water level during the test is within the screened length of the well, and the hydraulic conductivity (K) of the pack material or the zone of development is significantly greater than the aquifer conductivity. Otherwise the radius of the well casing/bore or the open hole radius should be used. Use the calculated effective radius as the input (multiplied by 2 for diameter) for the Intake/Soil Column Diameter entry found on the Data Entry sheet.

Data Entry

(Use any consistent units for input.)

Actual inside screen radius (r_i): 1.500E+00
Radius of well bore or pack (r_o): 3.000E+00
Porosity of pack material or
the developed zone (n): 3.000E-01

Calculated Result

Effective radius (r_e): 2.068E+00
Effective diameter: 4.135E+00

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-12D2

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 9.94

Weather: Sunny, Clear

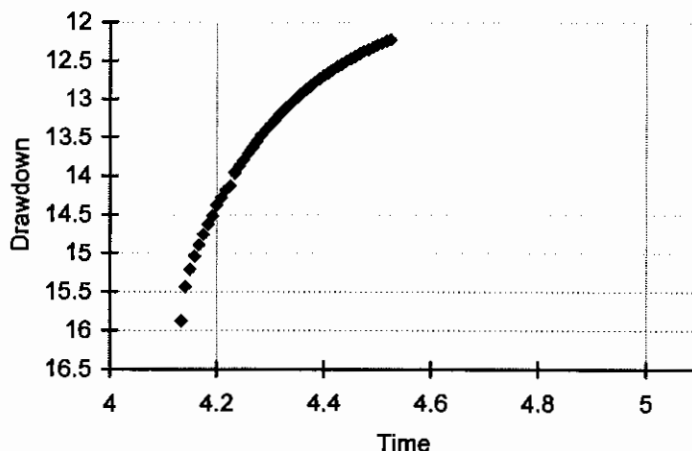
Project Name: Rockaway Park

Analysis By: M. Pye

Date Started: _____

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	107.77
Static W/L-Depth (ft.):	11.7
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	11.7
TOC Elevation (feet):	12.81
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	-85.06
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.039
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
4.1167	17.769						
4.125	17.039						
4.1333	15.877						
4.1417	15.433						
4.15	15.211						
4.1583	15.042						
4.1667	14.896						
4.175	14.756						
4.1833	14.627						
4.1917	14.516						
4.2	14.382						
4.2083	14.289						
4.2167	14.184						
4.225	14.131						
4.2333	13.962						
4.2417	13.88						
4.25	13.798						
4.2583	13.71						
4.2667	13.629						
4.275	13.553						
4.2833	13.476						
4.2917	13.407						
4.3	13.337						
4.3083	13.273						
4.3167	13.207						
4.325	13.15						
4.3333	13.091						
4.3417	13.032						
4.35	12.98						

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-12D2

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 9.94

Weather: Sunny, Clear

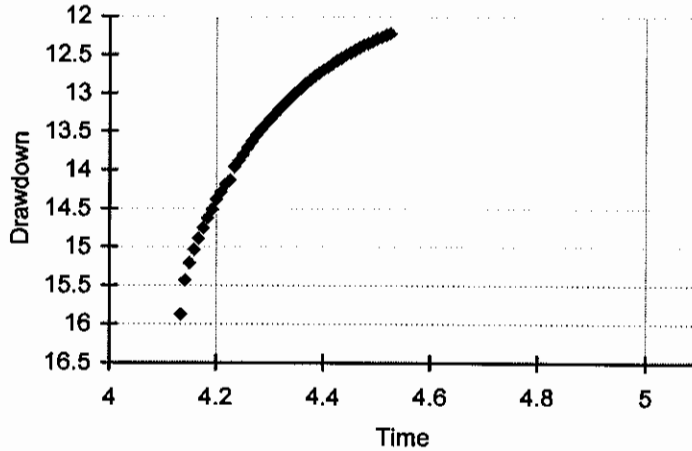
Project Name: Rockaway Park

Analysis By: M. Pype

Date Started: _____

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	107.77
Static W/L-Depth (ft.):	11.7
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	11.7
TOC Elevation (feet):	12.81
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	-85.06
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.039
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
4.3583	12.927						
4.3667	12.875						
4.375	12.828						
4.3833	12.781						
4.3917	12.74						
4.4	12.694						
4.4083	12.658						
4.4167	12.618						
4.425	12.577						
4.4333	12.542						
4.4417	12.507						
4.45	12.477						
4.4583	12.442						
4.4667	12.407						
4.475	12.378						
4.4833	12.355						
4.4917	12.326						
4.5	12.296						
4.5083	12.273						
4.5167	12.244						
4.525	12.226						
4.5333	12.197						
4.5417	12.18						
4.55	12.156						
4.5583	12.139						
4.5667	12.115						
4.575	12.098						
4.5833	12.074						
4.5917	12.063						

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-12D2

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 9.94

Weather: Sunny, Clear

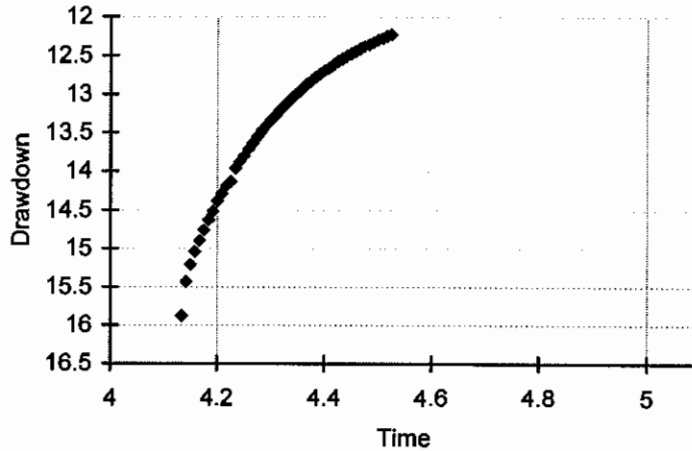
Project Name: Rockaway Park

Analysis By: M. Pype

Date Started: _____

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	107.77
Static W/L-Depth (ft.):	11.7
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	11.7
TOC Elevation (feet):	12.81
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	-85.06
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.039
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
4.6	12.044						
4.6083	12.028						
4.6167	12.016						
4.625	11.999						
4.6333	11.981						
4.6417	11.968						
4.65	11.957						
4.6583	11.945						
4.6667	11.933						
4.675	11.922						
4.6833	11.91						
4.6917	11.898						
4.7	11.887						
4.7083	11.875						
4.7167	11.863						
4.725	11.857						
4.7333	11.852						
4.7417	11.846						
4.75	11.834						
4.7583	11.828						
4.7667	11.817						
4.775	11.811						
4.7833	11.805						
4.7917	11.799						
4.8	11.793						
4.8083	11.782						
4.8167	11.782						
4.825	11.776						
4.8333	11.764						

SLUG TEST DATA ENTRY FORM

Client Name: Keyspan

Well Number: RPMW-12D2

Test Type: Slug Out

Project No.: 98248

Topo. Elev.: 9.94

Weather: Sunny, Clear

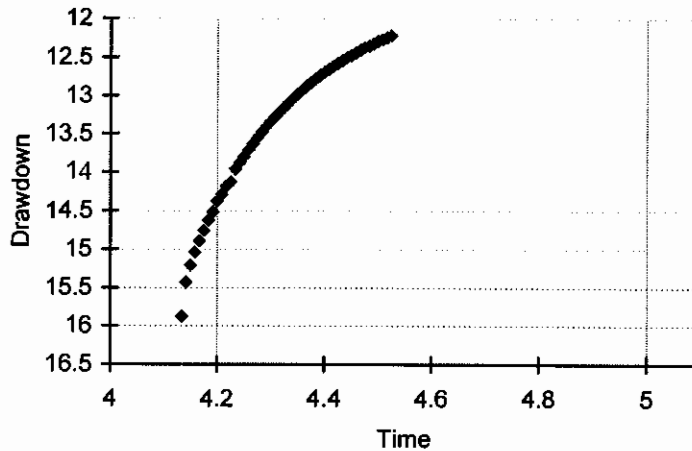
Project Name: Rockaway Park

Analysis By: M. Pype

Date Started: _____

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	107.77
Static W/L-Depth (ft.):	11.7
Riser Pipe Diameter (feet):	0.1667
Initial Test Depth Value (ft.):	11.7
TOC Elevation (feet):	12.81
Intake/Soil Col. Diam. (feet):	0.55
Depth to Top of Pack (feet):	-85.06
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	
Casing Stickup (feet):	
Slug Volume (ft ³):	0.039
Thickness of Aquifer (feet):	300



AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
4.8417	11.764						
4.85	11.758						
4.8583	11.752						
4.8667	11.746						
4.875	11.746						
4.8833	11.735						
4.8917	11.741						
4.9	11.729						
4.9083	11.723						
4.9167	11.723						
4.925	11.717						
4.9333	11.717						
4.9417	11.711						
4.95	11.711						
4.9583	11.705						
4.9667	11.705						
4.975	11.699						
4.9833	11.699						
4.9917	11.693						
5	11.693						
5.0083	11.693						
5.0167	11.687						
5.025	11.687						
5.0333	11.687						
5.0417	11.681						
5.05	11.681						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

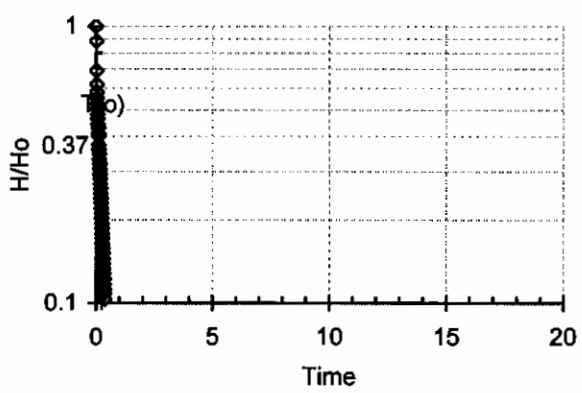
Project No.: 98248

Client Name: Keyspan

Run Date: _____

Analysis By: M. Pye

Identification: RPMW-12D2

Test Type: <u>7</u> 1 to 7 Riser Pipe Diameter: <u>0.1667</u> feet Intake Diam.: <u>0.55</u> feet Intake Length: <u>10</u> feet Water Table Depth: <u>11.7</u> feet Line Fit Starting No.: <u>1</u> Min 1 to Line Fit Ending No.: <u>11</u> Max 50 Entrapped Air Correct.: <u>N</u> Y or N Specify Output Units: <u>3</u> 1 to 9 Hyd Cond, K(h): <u>1.90E+01</u> ft./day Basic Time Lag: <u>0.09</u> min. Error of Fit: <u>0.0768</u>					
Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	4.12	17.77	6.07	0.0000	-0.1522
2)	4.13	17.04	5.34	-0.1282	-0.2265
3)	4.13	15.88	4.18	-0.3736	-0.3008
4)	4.14	15.43	3.73	-0.4860	-0.3759
5)	4.15	15.21	3.51	-0.5473	-0.4502
6)	4.16	15.04	3.34	-0.5966	-0.5245
7)	4.17	14.90	3.20	-0.6413	-0.5996
8)	4.18	14.76	3.06	-0.6861	-0.6739
9)	4.18	14.63	2.93	-0.7292	-0.7482
10)	4.19	14.52	2.82	-0.7679	-0.8234
11)	4.20	14.38	2.68	-0.8166	-0.8976
12)	4.21	14.29	2.59	-0.8519	-0.9719
13)	4.22	14.18	2.48	-0.8933	-1.0471
14)	4.23	14.13	2.43	-0.9149	-1.1213
15)	4.23	13.96	2.26	-0.9869	-1.1956
16)	4.24	13.88	2.18	-1.0239	-1.2708
17)	4.25	13.80	2.10	-1.0622	-1.3451
18)	4.26	13.71	2.01	-1.1051	-1.4193
19)	4.27	13.63	1.93	-1.1462	-1.4945
20)	4.28	13.55	1.85	-1.1864	-1.5688
21)	4.28	13.48	1.78	-1.2288	-1.6431
22)	4.29	13.41	1.71	-1.2685	-1.7182
23)	4.30	13.34	1.64	-1.3103	-1.7925
24)	4.31	13.27	1.57	-1.3502	-1.8668
25)	4.32	13.21	1.51	-1.3931	-1.9419

[illegible]

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Rockaway Park

Project No.: 98248

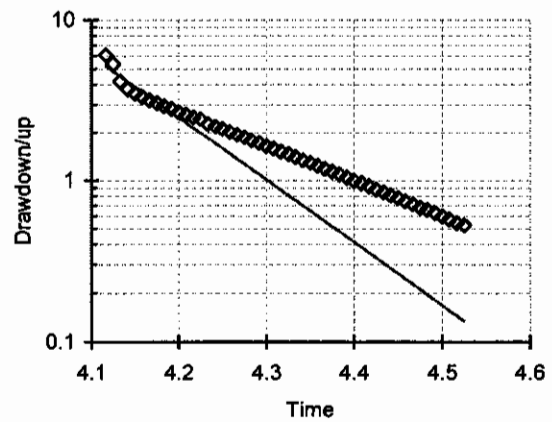
Client Name: Keyspan

Identification: RPMW-12D2

Analysis By: M. Pype

Run Date:

Riser Pipe Diameter:	0.1667 feet
Intake Diameter:	0.55 feet
Intake Length:	10 feet
Saturated Column Length:	10 feet
Water Table Depth:	11.7 feet
Aquifer Thickness:	300 feet
Line Fit Starting No.:	1 Min 1 to
Line Fit Ending No.:	11 Max 50
Specify Output Units:	2 1 to 9
Hyd. Cond., K(h):	6.83E-03 ft./min.
Error of Fit:	0.077



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
1)	4.12	17.77	6.07	1.803	1.651
2)	4.13	17.04	5.34	1.675	1.577
3)	4.13	15.88	4.18	1.430	1.502
4)	4.14	15.43	3.73	1.317	1.427
5)	4.15	15.21	3.51	1.256	1.353
6)	4.16	15.04	3.34	1.207	1.279
7)	4.17	14.90	3.20	1.162	1.204
8)	4.18	14.76	3.06	1.117	1.129
9)	4.18	14.63	2.93	1.074	1.055
10)	4.19	14.52	2.82	1.035	0.980
11)	4.20	14.38	2.68	0.987	0.906
12)	4.21	14.29	2.59	0.951	0.831
13)	4.22	14.18	2.48	0.910	0.756
14)	4.23	14.13	2.43	0.888	0.682
15)	4.23	13.96	2.26	0.816	0.608
16)	4.24	13.88	2.18	0.779	0.532
17)	4.25	13.80	2.10	0.741	0.458
18)	4.26	13.71	2.01	0.698	0.384
19)	4.27	13.63	1.93	0.657	0.309
20)	4.28	13.55	1.85	0.617	0.234
21)	4.28	13.48	1.78	0.574	0.160
22)	4.29	13.41	1.71	0.535	0.085
23)	4.30	13.34	1.64	0.493	0.011
24)	4.31	13.27	1.57	0.453	-0.064

25)	4.32	13.21	1.51		0.410	-0.139
26)	4.33	13.15	1.45		0.372	-0.213
27)	4.33	13.09	1.39		0.330	-0.287
28)	4.34	13.03	1.33		0.287	-0.362
29)	4.35	12.98	1.28		0.247	-0.437
30)	4.36	12.93	1.23		0.205	-0.511
31)	4.37	12.88	1.18		0.161	-0.586
32)	4.38	12.83	1.13		0.120	-0.660
33)	4.38	12.78	1.08		0.078	-0.735
34)	4.39	12.74	1.04		0.039	-0.810
35)	4.40	12.69	0.99		-0.006	-0.884
36)	4.41	12.66	0.96		-0.043	-0.958
37)	4.42	12.62	0.92		-0.086	-1.034
38)	4.43	12.58	0.88		-0.131	-1.108
39)	4.43	12.54	0.84		-0.172	-1.182
40)	4.44	12.51	0.81		-0.214	-1.257
41)	4.45	12.48	0.78		-0.252	-1.332
42)	4.46	12.44	0.74		-0.298	-1.406
43)	4.47	12.41	0.71		-0.347	-1.481
44)	4.48	12.38	0.68		-0.389	-1.555
45)	4.48	12.36	0.66		-0.423	-1.630
46)	4.49	12.33	0.63		-0.468	-1.705
47)	4.50	12.30	0.60		-0.518	-1.779
48)	4.51	12.27	0.57		-0.557	-1.853
49)	4.52	12.24	0.54		-0.609	-1.928
50)	4.53	12.23	0.53		-0.642	-2.003

Calculator for Finding Effective Well Radius (r_e)

This worksheet calculates the effective radius of the well casing/bore over which water level changes occur during the test. Effective radius should be used if the water level during the test is within the screened length of the well, and the hydraulic conductivity (K) of the pack material or the zone of development is significantly greater than the aquifer conductivity. Otherwise the radius of the well casing/bore or the open hole radius should be used. Use the calculated effective radius as the input (multiplied by 2 for diameter) for the Intake/Soil Column Diameter entry found on the Data Entry sheet.

Data Entry

(Use any consistent units for input.)

Actual inside screen radius (r_i):	<u>1.500E+00</u>
Radius of well bore or pack (r_o):	<u>3.000E+00</u>
Porosity of pack material or the developed zone (n):	<u>3.000E-01</u>

Calculated Result

Effective radius (r_e):	<u>2.068E+00</u>
Effective diameter:	<u>4.135E+00</u>

Appendix D

Chain-of-Custody Forms and Data Validation Reports – Soils



Soil Chain-of-Custody Forms

[illegible]

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

REPORT TO							INVOICE TO														
COMPANY GEI Consultants, Inc						PHONE 800.537-0751		COMPANY Same as						PHONE		LAB PROJECT #:					
NAME Dave Terry						FAX 860.537.6347		NAME Report to						FAX		A113Z					
ADDRESS 188 Norwich Ave							ADDRESS							TURNAROUND TIME:							
CITY/ST/ZIP Colchester, CT 06415							CITY/ST/ZIP														
CLIENT PROJECT NAME: Key Span - Rockaway Park			CLIENT PROJECT #: 982482			CLIENT P.O.#:		REQUESTED ANALYSES <i>BTEX-8031 PAHS-8270 BTEX-8260 TCL* PAHS-8270 TCL* Total CN - 9012 BTEX/PAH SPLR</i>													
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	COMMENTS												
RPGP28A-GW5256	7/25/02' 830		☒	☒			01	3	☒ ☒												Take CN sample from PAHs, lab presence
RPGP28A GW 71-75	7/25/02' 1245		☒	☒			02	3	☒ ☒												
RPGP-28A 4-8	7/24/02' 835		☒		☒		03	2	☒ ☒												
RPGP-28A 20-24	7/24/02' 1000		☒		☒		04	2			☒ ☒										
RPGP-28A 40-44	7/24/02' 1300		☒		☒		05	2	☒ ☒												
RPSB-09A 1-2	7/25/02' 1430		☒		☒		06	2	☒ ☒				☒ ☒								Low volume
RPSB-09A 5.5-6.5	7/25/02' 1440		☒		☒		07	2	☒ ☒				☒ ☒								Low volume
RPSB-09A 8-12	7/25/02' 1500		☒		☒		08	2	☒ ☒				☒ ☒								Low volume
RPT6012502	7/25/02' 1615		☒	☒			09														
	/																				
	/																				
	/																				
TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY		DATE/TIME	ADDITIONAL REMARKS:					COOLER TEMP:										
1	[Signature]	7/25/02' 1800	shipped via FedEx		/	* Add - Please provide chromatogram					4°C										
2	BO	/	[Signature] # [unclear] 2721 9286		/	Send add + data package to Kevin Harris as before															
3	.	/	[Signature]		Faxed 0900																

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

 Page 1 of 1

REPORT TO							INVOICE TO							LAB PROJECT #: TURNAROUND TIME:			
COMPANY	NAME	ADDRESS	CITY/ST/ZIP	CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:	COMPANY	NAME	ADDRESS	CITY/ST/ZIP							
GEI Consultants, Inc	Dave Terry	188 Norwich Ave	Colchester, CT 06415	KeySpan Rockaway Park	982482		Same as Report to										
PHONE 860.531.0751	FAX 860.537.6347																
SAMPLE IDENTIFICATION		DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES							COMMENTS
RPSB-128A 9-105		7/26/02 940		✓		✓		01	2	✓	✓	✓	✓	✓	✓	✓	
RPSB-128A 24-28		1100		✓		✓		02	2	✓	✓	✓	✓	✓	✓	✓	
RPSB-128A 21.5-22.5		1020		✓		✓		03	2	✓	✓	✓	✓	✓	✓	✓	
RPTB012602		1200		✓	✓			04	2	✓							
		/															
		/															
		/															
		/															
		/															
		/															
		/															
		/															
		/															
TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY		DATE/TIME	ADDITIONAL REMARKS:		COOLER TEMP:									
1	<i>[Signature]</i> mo	7/26/02 1330	FED EX shipped		/			28°C									
2		/	Air Bill # 8660 2721 9225		/												
3	∞	/	<i>[Signature]</i>		7-29-02 1332												

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO							INVOICE TO							LAB PROJECT #:	
COMPANY <u>G-EI Consultants Inc</u>				PHONE <u>(860) 537-0751</u>			COMPANY <u>G-EI Consultants Inc</u>				PHONE			<u>A1204</u>	
NAME <u>DAVE TERRY</u>				FAX <u>(860) 537-6347</u>			NAME <u>SAME AS REPORT</u>				FAX				
ADDRESS <u>198 Norwich Ave</u>							ADDRESS							TURNAROUND TIME:	
CITY/ST/ZIP <u>Colchester CT 06415</u>							CITY/ST/ZIP								
CLIENT PROJECT NAME:			CLIENT PROJECT #:			CLIENT P.O.#:			REQUESTED ANALYSES BTEX via 8021 PAHs via 8270 Total CN via 9012 SLP BTEX SLP PAHs						
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS							
RPSB-123 80-86	8/13/02 1830				X		01	5	X	X	X	X	X		Potentially Impacted
RPSB-123 100-104	8/13/02 1055				X		02	5	X	X	X	X	X		
RPSB-123 116-121	8/13/02 1240				X		03	5	X	X	X	X	X		Potentially Impacted
RPSB-123 141-146	8/13/02 1500				X		04	5	X	X	X	X	X		
	/														
	/														
	/														
	/														
	/														
	/														
	/														
	/														
	/														
	/														
TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY		DATE/TIME	ADDITIONAL REMARKS:				COOLER TEMP:					
1	<i>[Signature]</i>	8/13/02 1830	shipped via Fed Ex		/	EDD FILE & DATA PACKAGE SEND TO Kharris@geiconsultants.com ct address Kevin Harris 243 N. Lindbergh Blvd Ste 312 St Louis, MO 63141				46					
2	<i>[Signature]</i>	/	airbill 8360 272 9264		/										
3	<i>[Signature]</i>	/	<i>[Signature]</i>		8-14-02 0645										

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

PINK: CLIENT'S COPY

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CORRECTED
CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Aug 20 02 10:55a

GEI - Rockaway Park

718-634-0504

P. 2

REPORT TO							INVOICE TO								
COMPANY GET Consultants Inc.				PHONE (800) 537-0751			COMPANY GET Consultants Inc.				PHONE				
NAME DAVID TERRY				FAX (800) 537-6347			NAME SAMI AS RIPIET				FAX				
ADDRESS 188 Norwich Ave Caldweller CT 06415							ADDRESS								
CITY/ST/ZIP							CITY/ST/ZIP								
CLIENT PROJECT NAME:							PROJECT #:		CLIENT P.O.#:						
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES						COMMENTS
SB-123 16-26	8/10/02 1015				X				BTEX via 8021	PAHs via 8021	Total CN via 9012	SPLEAmet for BTEX	SAPEmet for PAHs		
MW-0702 23-24.5	8/14/02 11000				X				X	X	X	X	X		
MW-0702 18 645	8/14/02 11200				X				X	X	X	X	X		
MW-0702 17-107	8/14/02 11300				X				X	X	X	X	X		
TB081402	8/14/02 1900			X					X						TRIP BLANK
	/														
	/														
	/														
	/														
	/														
	/														
	/														
	/														
	/														
RELINQUISHED BY		DATE/TIME		ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:						COOLER TEMP	
[Signature]		8/14/02 11830		shipped via Fed Ex		/		EPP FILE + Dr. in file write SEND TO kharris@ge-consultants.com at address Kevin Harris 243 N. Lindbergh Blvd Ste 312 St Louis MO 63141							
		/		airbill 8360-2721-9253		/									
		/				/									

[illegible]

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO						INVOICE TO						LAB PROJECT #:					
COMPANY <u>GET Consultants, Inc.</u>				PHONE <u>(860) 537-0751</u>		COMPANY <u>GET Consultants, Inc.</u>				PHONE		<u>A1235</u>					
NAME <u>Dave Terry</u>				FAX <u>(860) 537-6347</u>		NAME <u>Same</u>				FAX							
ADDRESS <u>188 Norwich Ave</u>						ADDRESS <u>Same</u>											
CITY/ST/ZIP <u>Colchester CT 06415</u>						CITY/ST/ZIP <u>Same</u>						TURNAROUND TIME:					
CLIENT PROJECT NAME:		CLIENT PROJECT #:		CLIENT P.O.#:		<u>BIEX via 8021</u> <u>PATHS via 8270</u> <u>Total Cn via 9012</u> <u>SP2P extract for BIEX</u> <u>SP2P extract for PATHS</u>											
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES						COMMENTS		
<u>RP3B-120 7-12</u>	<u>8/16/02 0840</u>				X		<u>01</u>		X	X	X	X	X				
<u>RP3B-120 37-47</u>	<u>8/16/02 0930</u>				X		<u>02</u>		X	X	X	X	X				
<u>RP3B-120 63.5-67</u>	<u>8/16/02 1000</u>				X		<u>03</u>		X	X	X	X	X				
<u>TBC081602</u>	<u>8/16/02 1600</u>			X			<u>04</u>		X								
<u>RP3B-118 7-12.5</u>	<u>8/16/02 1340</u>				X		<u>05</u>		X	X	X	X	X				
<u>RP3B-118 26-27</u>	<u>8/16/02 1350</u>				X		<u>06</u>		X	X	X	X	X				
<u>RP3B-118 57-67</u>	<u>8/16/02 1455</u>				X		<u>07</u>		X	X	X	X	X		<u>Potentially Impacted</u>		
RELINQUISHED BY <u>[Signature]</u>		DATE/TIME <u>8/16/02 1800</u>		ACCEPTED BY <u>shipped via FedEx</u>				DATE/TIME <u>/</u>		ADDITIONAL REMARKS: <u>EDD File and Data Package</u> <u>Send to:</u> <u>Kharris@geiconsultants.com</u> <u>Kevin Harris</u> <u>243 N. Lindbergh Blvd</u> <u>Ste 312</u> <u>St Louis, MO 63141</u>						COOLER TEMP: <u>6C</u>	
				<u>air bill # 8360-2721-9106</u>				<u>/</u>									
				<u>[Signature]</u>				<u>8-17-02 0906</u>									

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

REPORT TO							INVOICE TO							LAB PROJECT #:	
COMPANY <u>GEI Consultants, Inc</u>				PHONE <u>(860) 537-0751</u>			COMPANY <u>GEI Consultants, Inc.</u>				PHONE			<u>A1248</u>	
NAME <u>DAVE TERRY</u>				FAX <u>(860) 537-6347</u>			NAME <u>SAME AS REPORT</u>				FAX				
ADDRESS <u>188 Norwich Ave</u>							ADDRESS							TURNAROUND TIME:	
CITY/ST/ZIP <u>Colchester, CT 06415</u>							CITY/ST/ZIP								
CLIENT PROJECT NAME:			CLIENT PROJECT #:			CLIENT P.O.#:			<u>REQUESTED ANALYSES</u> <u>BTEX via 8021 +</u> <u>PAHs via 8270 +</u> <u>TOTAL CU via 9012 +</u> <u>SALP Extract for BTEX +</u> <u>SALP Extract for PAHs +</u>						
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS							
RPSB-124 7-13	8/19/02/0815				X		01	2	X	X	X	X	X	X	
RPSB-124 27-37	10845				X		02	2	X	X	X	X	X	X	
RPSB-124 17-27	10830				X		03	2	X	X	X	X	X	X	
RPSB-124 67-77	1015				X		04	2	X	X	X	X	X	X	
RPSB-122 7-11.5	11145				X		05	2	X	X	X	X	X	X	
RPSB-122 27-37	11210				X		06	2	X	X	X	X	X	X	
RPSB-122 74-77	11400				X		07	2	X	X	X	X	X	X	
RPSB-122 11.5-12	11146				X		08	2	X	X	X	X	X	X	
RPSB-128 1-4	11450				X		09	2	X	X	X	X	X	X	
RPSB-128 10-17	11455				X		10	2	X	X	X	X	X	X	
RPSBXX08R02-1	10800				X		11	2	X	X	X	X	X	X	
RPSB-122 27-37MS/MSDV	1210				X		0612	2	X	X	X	X	X	X	DUP OF RPSB-122 11.5-12 Matrix spike/Dup
TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY		DATE/TIME	ADDITIONAL REMARKS:		COOLER TEMP:							
		8/20/02 1900	shipped via Fed Ex			EOD FILE & DATA PACKAGE SEND TO:		5°C							
			Air bill # 8360 2721 9242			Kharris@geiconsultants.com									
			Sara Korolowski		8-21-02 0900	mail to: Kevin Harris 243 N. Lindbergh Blvd, Ste 312 ST LOUIS, MO 63141									

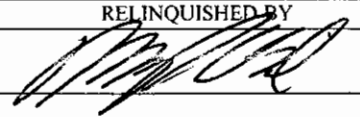
WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

REPORT TO							INVOICE TO							LAB PROJECT #:	
COMPANY <u>GEI Consultants, Inc.</u>				PHONE <u>(860) 537-0751</u>			COMPANY <u>GEI Consultants Inc</u>				PHONE			<u>A1248</u>	
NAME <u>DAVE TERRY</u>				FAX <u>(860) 537-6347</u>			NAME <u>Same as</u>				FAX				
ADDRESS <u>188 Norwich Ave</u>							ADDRESS <u>REPORT</u>							TURNAROUND TIME:	
CITY/ST/ZIP <u>Colchester CT 06415</u>							CITY/ST/ZIP								
CLIENT PROJECT NAME:			CLIENT PROJECT #:			CLIENT P.O.#:			REQUESTED ANALYSES <u>BTEX via 8021</u> <u>PAHs via 8070</u> <u>Total CN via 9012</u> <u>SPL Extract via BTEX</u> <u>SPL Extract via PAHs</u>						
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOS	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS							
<u>RPTB081902</u>	<u>8/19/02 1900</u>			☒			<u>17 15</u>	<u>2</u>	<u>TRIP BLANK</u>						
<u>RPSB</u>	<u>8/20/02</u>														
<u>RPMW-14D2 10-14</u>	<u>8/20/02 1610</u>				☒		<u>13 14</u>	<u>2</u>	☒	☒	☒	☒	☒	☒	
<u>RPMW-14D2 67-77</u>	<u>8/19/02 1710</u>				☒		<u>14 15</u>	<u>2</u>	☒	☒	☒	☒	☒	☒	
<u>RPMW-14D2 97-107</u>	<u>8/20/02 0930</u>				☒		<u>15 16</u>	<u>2</u>	☒	☒	☒	☒	☒	☒	
<u>RPMW-15D 9.5-10</u>	<u>8/20/02 1210</u>				☒		<u>16 17</u>	<u>2</u>	☒	☒	☒	☒	☒	☒	
<u>RPMW-15D 9-9.5</u>	<u>8/20/02 1210</u>				☒		<u>17 18</u>	<u>2</u>	☒	☒	☒	☒	☒	☒	
<u>RPMW-15D 67-77</u>	<u>8/20/02 1346</u>				☒		<u>18 19</u>	<u>2</u>	☒	☒	☒	☒	☒	☒	
<u>RPSB-126 12-17</u>	<u>8/20/02 1630</u>				☒		<u>19 20</u>	<u>2</u>	☒	☒	☒	☒	☒	☒	
<u>RPSB-126 27-37</u>	<u>8/20/02 1650</u>				☒		<u>20 21</u>	<u>2</u>	☒	☒	☒	☒	☒	☒	
<u>RPSB-126 47-57</u>	<u>8/20/02 1710</u>				☒		<u>21 22</u>	<u>2</u>	☒	☒	☒	☒	☒	☒	
TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY			DATE/TIME	ADDITIONAL REMARKS:				COOLER TEMP:				
		<u>8/20/02 1900</u>	<u>shipped via Fed Ex</u>			<u>/</u>	<u>SEE PAGE 1 of 2</u>				<u>5°C</u>				
		<u>/</u>	<u>Ac bill # 8360 2721 9242</u>			<u>/</u>									
<u>18</u>		<u>/</u>	<u>Sam Kozlowski</u>			<u>8/20/02 0900</u>									

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

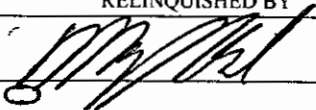
PINK: CLIENT'S COPY



175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO										INVOICE TO														
COMPANY GET Consultants Inc					PHONE (800) 537-0731					COMPANY GET Consultants					PHONE									
NAME Dave Terry					FAX (800) 537-6347					NAME SAME AS					FAX									
ADDRESS 188 Norwich Ave										ADDRESS REPORT														
CITY/ST/ZIP Colchester CT 06415										CITY/ST/ZIP														
CLIENT PROJECT NAME:					CLIENT PROJECT #:					CLIENT P.O.#:														
SAMPLE IDENTIFICATION		DATE/TIME SAMPLED		COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES										COMMENTS			
RPSB-125 17-25		8/21/02 0820					X		01	2	X	X	X	X	X									
RPSB-125 25-27		↓ 0826					X		02	2	X	X	X	X	X									
RPSB-125 63-67		↓ 0910					X		03	2	X	X	X	X	X									
RPMW-180 52-55		8/21/02 1310					X		04	2	X	X	X	X	X									
RPMW-180 81-83		↓ 1400					X		05	2	X	X	X	X	X									
RPMW-180 87-97		↓ 1410					X		06	2	X	X	X	X	X									
RPTB 082102		8/21/02 1800				X			07	2	X	X	X	X	X			Trip Blank BTEX ONLY						
TSF#	RELINQUISHED BY			DATE/TIME			ACCEPTED BY			DATE/TIME			ADDITIONAL REMARKS:					COOLER TEMP:						
				8/21/02			shipped via Fed Ex						EDD FILE + DATA PACKAGE TO Kharris@geiconsultants.com					5°C						
							airbill # 83602219231						Kevin Harris 243 N. Lindbergh Blvd, Ste 312											
							Sue Koskowiak			8-22-02 0900			St Louis MO 63141											

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO							INVOICE TO							LAB PROJECT #:		
COMPANY <u>GEI Consultants, Inc</u>				PHONE <u>(860) 537-0751</u>			COMPANY <u>GEI Consultants, Inc</u>				PHONE			<u>A1273</u>		
NAME <u>DAVE TERRY</u>				FAX <u>(860) 537-6347</u>			NAME <u>SAME AS REPORT</u>				FAX					
ADDRESS <u>188 Norwich Ave</u>							ADDRESS							TURNAROUND TIME:		
CITY/ST/ZIP <u>Colchester CT 06415</u>							CITY/ST/ZIP									
CLIENT PROJECT NAME:			CLIENT PROJECT #:			CLIENT P.O.#:			REQUESTED ANALYSES BTEX via 8021 PAHs via 8270 + TOTAL CN via 9012 SPL Extract for BTEX SPL Extract for PAHs							
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS								COMMENTS
RPSB-129 15-17	8/22/02 1805				X		01	2	X	X	X	X	X			
RPSB-129 37-47	1830				X		02	2	X	X	X	X	X			
RPSB-129 87-97	1920				X		03	2	X	X	X	X	X			
RPmw-0802 7-10	1015				X		04	2	X	X	X	X	X			
RPmw-0802 52-57	1115				X		05	2	X	X	X	X	X			
RPmw-0802 97-107	1310				X		06	2	X	X	X	X	X			
RPmw-0802 97-107 MS/MSD	1315				X		07 06	2	X	X	X	X	X		Matrix spike/Dop	
RPSB-119 14-17	8/22/02 0755				X		07	2	X	X	X	X	X			
RPSB-119 40-47	0825				X		08	2	X	X	X	X	X			
RPSB-119 87-97	0920				X		09	2	X	X	X	X	X			
RPSB XX-082302-1	-				X		10	2	X	X	X	X	X		DUP OF RPSB119 14-17	
RPTB-082302	0720			X			11	2	X						Trip Blank	
TSP# <u>00012</u>	RELINQUISHED BY <u>[Signature]</u>	DATE/TIME <u>8/23/02 1130</u>		ACCEPTED BY <u>[Signature]</u>			DATE/TIME <u>8-26-02 0850</u>		ADDITIONAL REMARKS:							COOLER TEMP: <u>62</u>
				Shipped via FedEx Airbill												
				#8360 2721 9220												

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO							INVOICE TO							LAB PROJECT #:					
COMPANY <u>GEE Consultants Inc</u>				PHONE <u>(860) 537-0751</u>			COMPANY <u>GEE Consultants Inc</u>				PHONE			<u>A1297</u>					
NAME <u>Dave Terry</u>				FAX <u>(860) 537-6347</u>			NAME <u>SAME AS REPORT</u>				FAX								
ADDRESS <u>188 Norwich Ave</u>							ADDRESS							TURNAROUND TIME:					
CITY/ST/ZIP <u>Colchester, CT 06415</u>							CITY/ST/ZIP												
CLIENT PROJECT NAME:		CLIENT PROJECT #:		CLIENT P.O.#:		<u>REQUESTED ANALYSES</u> <u>BTEX via 8021</u> <u>PAHs via 8270</u> <u>Total CN via 9012</u> <u>SLP Extract for BTEX</u> <u>SLP Extract for PAHs</u>													
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL											OTHER	LAB ID	# OF CONTAINERS	COMMENTS
RPSB-127 14.5-17	8/26/02' 1245				X		01	2	X	X	X	X	X						
RPSB-127 21-23	8/26/02' 1305				X		02	2	X	X	X	X	X						
RPSB-127 57-67	8/26/02' 1405				X		03	2	X	X	X	X	X						
RPTB082802-1	8/26/02' 0730			X			04	4	X	X	X								Rinse Blank
RPTB082802-1	8/26/02' —			X			05	2	X										Trip Blank
RPSB-130 22-24	8/28/02' 1450				X		06	2	X	X	X	X	X						
RPSB-130 47-57	8/28/02' 1515				X		07	2	X	X	X	X	X						
RPSB-130 87-97	8/28/02' 1600				X		08	2	X	X	X	X	X						
	/																		
	/																		
	/																		
	/																		
TSF#	RELINQUISHED BY	DATE/TIME		ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:							COOLER TEMP:				
1		8/28/02/1800		Shipped via Fed Ex Airbill		/		EOD FILE & DATA PACKAGE TO: kharris@geiconsultants.com Kevin Harris 243 N. Lindbergh Blvd, Ste 312 St Louis MO 63141							4°C				
2		/		# 83607721 9139		/													
3		/				8:29-02-0900													

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

REPORT TO							INVOICE TO							LAB PROJECT #:					
COMPANY <u>GEI Consultants Inc</u>				PHONE <u>(860) 537-0751</u>			COMPANY <u>GEI Consultants</u>				PHONE			<u>41311</u>					
NAME <u>Dave Terry</u>				FAX <u>(860) 537-6347</u>			NAME <u>Same as report</u>				FAX								
ADDRESS <u>188 Norwich Ave</u>							ADDRESS							TURNAROUND TIME:					
CITY/ST/ZIP <u>Colchester, CT 06415</u>							CITY/ST/ZIP												
CLIENT PROJECT NAME:		CLIENT PROJECT #:		CLIENT P.O.#:			REQUESTED ANALYSES												
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS											COMMENTS
RPMW-02D2 19-23	8/29/02 1145				X		01	3	X	X	X	X	X	X	X				
RPMW-02D2 62-66	1306				X		02	2	X	X	X	X	X	X	X				
RPMW-02D2 97-107	1400				X		03	2	X	X	X	X	X	X	X				
RPMW-02D2 97-107 MS/MSD	1400				X		03	2	X	X	X	X	X	X	X				
RPSBX 082902-1	—				X		04	2	X	X	X	X	X	X	X				
RPTB 082902-1	8/14/02			X			05	2	X										
TSF#	RELINQUISHED BY	DATE/TIME		ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:							COOLER TEMP:				
1	<u>[Signature]</u>	8/30/02 1100		Shipped via FedEx		/		EOD file & Data package to: Kharis@geiconsultants.com Kevin Harris 243 N. Lindburgh Blvd Ste 312 St Louis, MO 63141							5°C				
2	6000	/		airbill # <u>630 27219209</u>		/													
3	6000	/				/													

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

 Page 1 of 1

REPORT TO							INVOICE TO							LAB PROJECT #:				
COMPANY <u>GEI Consultants</u>				PHONE <u>860-577-0751</u>			COMPANY <u>same</u>				PHONE			<u>A1500</u>				
NAME <u>David Terry</u>				FAX <u>860-537-6347</u>			NAME				FAX							
ADDRESS <u>PO Box 297</u>							ADDRESS							TURNAROUND TIME:				
CITY/ST/ZIP <u>Colchester, CT 06415</u>							CITY/ST/ZIP											
CLIENT PROJECT NAME: <u>Rockaway Park</u>			CLIENT PROJECT #: <u>982482-9</u>			CLIENT P.O.#:			REQUESTED ANALYSES <u>BIEX v. 8021 +</u> <u>PAHs v. 8270 +</u> <u>6+1 CN v. 9012 +</u> <u>SPE extract BIEX</u> <u>SPE extract for PAHs</u>									
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS										
<u>APMW-16E (P)</u>	<u>/</u>																	
<u>RPBW-16E 9-11</u>	<u>10/24/02 1158</u>				<u>X</u>		<u>01</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>					
<u>RPBW-16E 39-41</u>	<u>10/24/02 1312</u>				<u>X</u>		<u>02</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>					
<u>RPTB102402</u>	<u>/</u>			<u>X</u>			<u>03</u>	<u>2</u>	<u>X</u>									
	/																	
	/																	
	/																	
	/																	
	/																	
	/																	
	/																	
	/																	
	/																	
TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY			DATE/TIME	ADDITIONAL REMARKS:				COOLING TEMP:							
<u>3</u>	<u>[Signature]</u>	<u>10/24/02</u>	<u>[Signature]</u>			<u>10/26/02 10:00</u>	<u>EPO file incl det. package to:</u> <u>Kevin Harris</u> <u>243 N Lindbergh Blvd</u> <u>Suite 312</u> <u>St. Louis, MO 63141</u> <u>email: kharris@geiconsultants.com</u>				<u>50</u> <u>* 50</u>							

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO							INVOICE TO							LAB PROJECT #:			
COMPANY GEI Consultants				PHONE 860-537-0751			COMPANY Same as Report to.				PHONE			A1409			
NAME Dave Terry				FAX 860-537-6347			NAME				FAX						
ADDRESS PO Box 297							ADDRESS							TURNAROUND TIME:			
CITY/ST/ZIP Colchester, CT							CITY/ST/ZIP										
CLIENT PROJECT NAME: Reckeweg Park			CLIENT PROJECT #: 982482-9			CLIENT P.O.#:			REQUESTED ANALYSES							COMMENTS	
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	VOCs (5260)	SVOCs (8270)	Total CN (9012)	BTEX (8021)	PAHs (8270)	PCBS			
RPT5092503	9/25/02 / 1200	✓			✓		01	4	X	X	X				TREATABILITY STUDY DROM		
RP55-19 0-2	9/25/02 / 0910		✓		✓		02	1				X					
RP55-18 0-2	9/25/02 / 0820		✓		✓		03	1				X					
RP55-17 0-2	9/25/02 / 0830		✓		✓		04	1				X					
RP55XX09 2502	9/25/02 / 1000		✓		✓		05	1				X			DUP OF RP55-18 0-2		
RPMW-01 I	9/25/02 / 1055			✓			06	1			X						
RPTB092502	9/25/02 / 1230			✓			17	1			X						
	/																
	/																
	/																
	/																
	/																
	/																
TSP#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY			DATE/TIME	ADDITIONAL REMARKS:				COOLER TEMP:						
200	<i>[Signature]</i>	9/25/02 /	<i>[Signature]</i>			9/26/02 0900	EOD file & data package to Kevin Harris 243 Lindbergh Blvd Suite 312 St Louis, MO 63141 Email: kharris@geiconsultants.com				00						

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY



175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO								INVOICE TO																
COMPANY GEI Consultants Inc				PHONE 603-537-0751				COMPANY				PHONE												
NAME DAVID TERRY				FAX 603-537-6347				NAME				FAX												
ADDRESS P.O. Box 297								ADDRESS								LAB PROJECT #: A1397								
CITY/ST/ZIP Colchester, CT 06415								CITY/ST/ZIP								TURNAROUND TIME:								
CLIENT PROJECT NAME:				CLIENT PROJECT #:				CLIENT P.O.#:																
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	Specific Gravity, pH, Toxicity, % moisture, Viscosity, Density	REQUESTED ANALYSES												COMMENTS		
										Reactive Cyanide & Sulfide +	PCBs +	BTEX +	PAH +	Phenol +	2-methyl Phenol +	3,4-dimethyl Phenol +	TCLP Metals +	TCLP Herbicide +	TCLP-SVOC +	TCLP-P-VOC +	TPH +			
RPMW-07D-DUAPL	9-24-02/ 1557					X	01	3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	note:
RPMW-09D-DUAPL	4-24-02/ 1655					X	02	3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Clean Earth	
/	/																						of New Castle	
/	/																						Inc. Parameters,	
/	/																							
/	/																							
/	/																							
/	/																							
/	/																							
/	/																							
/	/																							
/	/																							
/	/																							
/	/																							
TSF#	RELINQUISHED BY		DATE/TIME		ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:										COOLER TEMP:					
0			/		<i>[Signature]</i>		9-25-02 0900		Any Questions call Garth Hirsch @ 781-721-4000										6°C					
0			/				/																	
0			/				/																	

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

Soil Data Validation Reports

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1566-A1620
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: December 19, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPMW-16I 9-11	A1566-01	BTEX (8021), PAH's (8270), CN (9012)
RPMW-16I 39-41	A1566-02	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-16S	A1620-01	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-16I	A1620-02	VOC's (8260), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO ₄ , Ferric/Ferrous Iron, Alkalinity, TDS, T. Phos., Iodide (SM), Bromide, Chloride (E300.0)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB102402
RPTB110702

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable with the exception of nitrate, sulfate, alkalinity, ferric iron, ferrous iron, bromide, chloride, iodide and total phosphate. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994. Bromide, chloride and iodide were subcontracted to Severn Trent Laboratories, Westfield, MA and analyzed according to EPA and MA EDP methodologies and protocols.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification
- Tentatively Identified Compounds

All results were found to be usable with the exception of acetone and 2-butanone in samples RPMW-16S and RPMW-16I.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times with the exception of those listed in the table below. All samples were received within temperature specifications of 2°C and 6°C.

SPLP PAH's Sample ID	Time elapsed			
	SPLP extraction	Preparation extraction	Analysis	Total
RPMW-16I 9-11	4 days	10 days	1 day	15 days
RPMW-16I 39-41	4 days	10 days	1 day	15 days

The ten days elapsed between the SPLP extraction and method preparation extraction for PAH's exceeded the recommended hold time of seven days. Since the total time of 15 days elapsed between sample collection and analysis is well below the total time of 61 allowed, the data has not been flagged with qualifiers.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC and SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S1 Compound	IC 10/17/02	IC 10/17/02	CC 11/20/02
Acetone	+ (0.047)	X (57.8)	+ (0.038)
2-Butanone			+ (0.049)
Dichlorodifluoromethane			XX (26.6%)
Samples Affected	RPMW-16S	RPMW-16S	
	RPMW-16I	RPMW-16I	

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.
 XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) non-detect results.
 += Response factor (RRF)<0.05; estimate (J) positive results and reject (R) non-detect results.

No positive acetone, 2-butanone, or dichlorodifluoromethane results were detected in the affected samples. Since the mean response factor for acetone in the initial calibration was less than 0.05 and the %RSD was greater than 30, the non-detects have been qualified as unusable (R). Because the response factor was less than 0.05 in the continuing calibration, the non-detects for 2-butanone have also been qualified as unusable (R). The non-detects for dichlorodifluoromethane have been qualified as estimated (UJ) due to excessive drift from the initial calibration.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits.

Internal Standards

The following table lists the Internal Standard recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard Sample ID	Recovery	Actions
Perylene-d12 RPMW-16I 9-11	43%	Estimate positive and non-detect (J/UJ) values: Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3)cd-pyrene, Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene

Selected positive results and non-detect results for sample RPMW-16I 9-11 have been qualified as estimated (J/UJ) due to the low Internal Standard recovery for Perylene-d12.

Laboratory Control Sample Results

All laboratory control spike recoveries were inside the QC limits with the exception of those listed in the following table.

Compound	LCS	LCSD	RPD
Vinyl Chloride	100	120 *	18

* = Outside QC limits.

No positive vinyl chloride results were detected in the samples. Since the recovery was out high, no action has been taken.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory did not perform an MS/MSD on any of the organic fractions of the samples validated in this report.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

Target Compound Identification

No erroneous compound identifications appear based upon retention time evaluations and the examination of sample preparation and injection logs, chromatograms, and forms I.

Tentatively Identified Compounds

The raw data has been checked to verify proper TIC identification. All TIC results are considered estimated.

The inorganic data were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

There was no blank contamination associated with the samples included in this report.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Results

The laboratory did not perform a cyanide matrix spike on any of the samples validated in this report.

Laboratory Duplicate Results

The laboratory did not perform a duplicate analysis on any of the samples validated in this report.

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1103-A1120
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: September 6, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPGP25-GW20-24	A1103-01	BTEX (8021), PAH's (8270)
RPGP25-GW36-40	A1103-02	BTEX (8021), PAH's (8270)
RPGP25-GW52-56	A1106-01	BTEX (8021), PAH's (8270)
RPGP25-GW60-64	A1106-02	BTEX (8021), PAH's (8270)
RPGP-26 20-24	A1111-01	BTEX (8021), PAH's (8270)
RPGP26-GW8-12	A1111-02	BTEX (8021), PAH's (8270)
RPGP26-GW20-24	A1111-03	BTEX (8021), PAH's (8270)
RPGP26-GW36-40	A1111-04	BTEX (8021), PAH's (8270)
RPGP25-GW71-75	A1111-05	BTEX (8021), PAH's (8270)
RPGP27-GW8-12	A1118-01	BTEX (8021), PAH's (8270)
RPGP27-GW20-24	A1118-02	BTEX (8021), PAH's (8270)
RPGP27-GW36-40	A1118-03	BTEX (8021), PAH's (8270)
RPGP27-GW52-56	A1120-01	BTEX (8021), PAH's (8270)
RPGP27-GW71-75	A1120-02	BTEX (8021), PAH's (8270)
RPGP-27 12-16	A1120-04	BTEX (8021), PAH's (8270)
RPGP-27 36-40	A1120-05	BTEX (8021), PAH's (8270)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB071702
RPTB071802
RPTB071902
RPTB072202
RPTB072302
Rinsate Blank: RPGPXX072302-1

The analyses of the above listed samples were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria (DFTPP for semi-volatile organic analysis) were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC and SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S1 Compound	IC 7/17/02	CC 7/28/02	CC 7/29/02
Pyrene		XX (49.3%)	XX (48.1%)
Terphenyl-d14		XX (43.3%)	XX (46.8%)
Samples Affected	All listed		RPGP27-GW52-56 RPGP27-GW71-75 RPGPXX072302-1 RPGP-27 12-16 RPGP-27 36-40

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.

XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) nondetect results.

+= Response factor (RRF)<0.05; estimate (J) positive results and reject (R) nondetect results.

The positive results and nondetect results for the following samples were qualified as estimated (J/UJ) due to continuing calibration nonconformances; pyrene in samples RPGP27-GW52-56, RPGP27-GW71-75, RPGPXX072302-1, RPGP-27 12-16 and RPGP-27 36-40.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits.

Internal Standards

The following table lists the Internal Standard recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard Sample ID	Recovery	Actions
Phenanthrene-d10 RPGP2620-24	49%	Estimate positive and nondetect (J/UJ) values for the compounds associated with IS4: Phenanthrene, Anthracene, and Fluoranthene.

The positive results and nondetect results for sample RPGP2620-24 were qualified as estimated (J/UJ) due to the low Internal Standard recovery for Phenanthrene-d10.

Laboratory Control Sample Results

Spike recoveries and replicate RPD's were within the QC limits.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory performed an MS/MSD on sample RPGP25-GW71-75 for VOC analyses. Spike recoveries were within the advisory QC limits.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample Quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPGP27-GW8-12	VOC	40-fold
RPGP27-GW20-24	VOC	10-fold

Target Compound Identification

No erroneous compound identifications appear based upon the evaluation of retention times and the examination of sample preparation and injection logs, chromatograms, and forms I.

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1128-A1138
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: September 6, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPGP28A-GW8-12	A1128-01	BTEX (8021), PAH's (8270), CN (9012)
RPGP28A-GW24-28	A1128-02	BTEX (8021), PAH's (8270), CN (9012)
RPGP28A-GW36-40	A1128-03	BTEX (8021), PAH's (8270), CN (9012)
RPGP28A-GW52-56	A1132-01	BTEX (8021), PAH's (8270), CN (9012)
RPGP28A-GW71-75	A1132-02	BTEX (8021), PAH's (8270), CN (9012)
RPGP-28A 4-8	A1132-03	BTEX (8021), PAH's (8270)
RPGP-28A 20-24	A1132-04	VOC's (8260), SVOC's (8270)
RPGP-28A 40-44	A1132-05	BTEX (8021), PAH's (8270)
RPSB-09A 1-2	A1132-06	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-09A 5.5-6.5	A1132-07	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-09A 8-12	A1132-08	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-128A 9-10.5	A1138-01	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-128A 24-28	A1138-02	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-128A 21.5-22.5	A1138-03	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB072402
 RPTB072502
 RPTB072602

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable with the exception of Naphthalene and 2-Methylnaphthalene in the undiluted run of sample RPSB-128A 9-10.5.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times with the exception of those listed in the table below. All samples were received within temperature specifications of 2°C and 6°C with the exception of those listed in the table below. All sample containers were received intact with the following exceptions: All (3) containers for Rinsate Blank RPGPXX072402-01 were received broken and unsalvageable. One VOA vial for sample RPGP28A-GW24-28 was received broken; the other was analyzed for BTEX.

Compound(s)	Temp. (°C) Received 7/29/02	Date Analyzed 8/02/02	Date Analyzed 8/06/02
BTEX (8021)	28	X (7)	X (11)
Samples Affected	RPSB-128A 9-10.5 RPSB-128A 24-28 RPSB-128A 21.5-22.5 RPTB072602	RPSB-128A 24-28 RPSB-128A 21.5-22.5 RPTB072602	RPSB-128A 9-10.5

X= Number of days between the date collected and the date analyzed.

The positive VOC results and non-detects were qualified as estimated (J/UJ) for the following samples due to temperature and hold time non-conformances: RPSB-128A 9-10.5, RPSB-128A 24-28, RPSB-128A 21.5-22.5 and RPTB072602. Since the temperature of the samples grossly exceed the temperature specifications, the analytical hold time for VOC analysis has been reduced from 14 to 7 days. The PAH results for these samples are not qualified since they were extracted 3 days after collection.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC and SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S1 Compound	IC 7/29/02
Benzo(g,h,i)perylene	X (36.1)
Samples Affected	RPGP28A-GW8-12 RPGP28A-GW24-28 RPGP28A-GW36-40

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.
XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) nondetect results.
+= Response factor (RRF)<0.05; estimate (J) positive results and reject (R) nondetect results.

The positive results for the following samples were qualified as estimated (J) due to initial calibration nonconformances; Benzo(g,h,i)perylene in samples RPGP28A-GW8-12, RPGP28A-GW24-28, and RPGP28A-GW36-40.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits with the exception of those diluted out.

Internal Standards

The following table lists the Internal Standard (IS) recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard(s): Sample ID	Recovery	Actions
Perylene-d12: RPGP-28A 4-8	49 %	Estimate positive and nondetect (J/UJ) values: Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3)cd-pyrene, Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene

Perylene-d12: RPGP-28A 40-44	49 %	Estimate positive and nondetect (J/UJ) values: Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3)cd-pyrene, Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene
Naphthalene-d8: RPSB-128A 9-10.5 (undiluted run)	8.6%	Reject (R) values: Naphthalene, 2- Methylnaphthalene
Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12: RPSB-128A 9-10.5 (undiluted run)	35% 30% 26% 18%	Estimate (J) all results that have not been previously qualified as unusable (R) or Estimated (E) for exceeding the calibration curve.

Selected positive and nondetect results for samples RPGP-28A 4-8 and RPGP-28A 40-44 are qualified as estimated (J/UJ) due to low IS recovery for Perylene-d12. All results are qualified as either unusable (R), estimated (J) due to low IS recoveries or estimated (E) due to exceeding the calibration curve for the undiluted run of RPSB-128A 9-10.5.

Laboratory Control Sample Results

The following table lists the VOC LCS recoveries found outside of the QC limits for V4SLCS 500 ppb and the resultant actions. Associated samples include RPSB-09A 1-2, RPSB-09A 5.5-6.5, RPSB-09A 8-12, and RPSB-128A 9-10.5.

Compound	Recovery	Actions
Toluene	84	LCSD and RPD in control; No Action

The following table lists the SVOC LCS recoveries found outside of the QC limits for S1DLCS 50 ppb and the resultant actions. Associated samples include RPGP28A-GW8-12, RPGP28A-GW24-28, and RPGP28A-GW36-40.

Compound	Recovery	Actions
Indeno(1,2,3-cd)pyrene	120	Estimate (J) positive values for samples; possible high bias
Benzo(g,h,i)perylene	126	Estimate (J) positive values for samples; possible high bias

Matrix Spike/Matrix Spike Duplicate Results

The laboratory did not perform an MS/MSD on any of the organic fractions of the samples validated in this report.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPSB-09A 1-2	VOC	1000-fold
RPSB-09A 5.5-6.5	VOC	50-fold
RPSB-09A 8-12	VOC	50-fold
RPSB-128A 21.5-22.5	VOC	2-fold
RPSB-128A 9-10.5	VOC	5000-fold
RPSB-128A 9-10.5	SPLP VOC	40-fold
RPSB-09A 1-2	PAH	1000-fold
RPSB-09A 5.5-6.5	PAH	50-fold
RPSB-09A 8-12	PAH	30-fold
RPSB-128A 9-10.5	PAH	100-fold

Target Compound Identification

No erroneous compound identifications appear based upon the evaluation of retention times and the examination of sample preparation and injection logs, chromatograms, and forms I.

The inorganic (cyanide) data were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable.

Holding Times and Sample Preservation

The following table lists sample results requiring qualification based on preservation issues for cyanide and the resultant actions.

Sample	Date Collected	Date Distilled	Action
RPGP28A-GW8-12	7/24/02	7/29/02	Estimate (J) positive and (UJ) nondetect results.
RPGP28A-GW24-28	7/24/02	7/29/02	Estimate (J) positive and (UJ) nondetect results.
RPGP28A-GW36-40	7/24/02	7/29/02	Estimate (J) positive and (UJ) nondetect results.
RPGP28A-GW52-56	7/25/02	7/29/02	Estimate (J) positive and (UJ) nondetect results.
RPGP28A-GW71-75	7/25/02	7/29/02	Estimate (J) positive and (UJ) nondetect results.
RPSB-128A- 9-10.5	7/26/02	7/31/02	Estimate (J) positive and (UJ) nondetect results.
RPSB-128A- 21.5-22.5	7/26/02	7/31/02	Estimate (J) positive and (UJ) nondetect results.
RPSB-128A- 24-28	7/26/02	7/31/02	Estimate (J) positive and (UJ) nondetect results.

Water samples RPGP28A-GW8-12, RPGP28A-GW24-28, RPGP28A-GW36-40, RPGP28A-GW52-56 and RPGP28A-GW71-75 were preserved to pH > 12 immediately prior to distillation at the laboratory as opposed to preservation in the field at time of collection. All samples were analyzed within analytical hold times. Soil samples RPSB-128A- 9-10.5, RPSB-128A- 21.5-22.5, and RPSB-128A- 24-28 were received at 28°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

There was no blank contamination associated with the samples included in this report.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Recoveries

Sample spike recoveries were within the QC limits.

Laboratory Duplicate Results

Laboratory duplicates were within QC limits

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1206-A1223
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: September 13, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPSB-123 80-86	A1206-01	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-123 100-104.5	A1206-02	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-123 116-121	A1206-03	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-123 141-146	A1206-04	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-123 16-26	A1213-01	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-07D2 23-24.5	A1213-02	BTEX (8021), PAH's (8270), BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-07D2 68-69.5	A1213-03	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-07D2 97-107	A1213-04	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-121 7-8.5	A1223-01	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-121 20.5-21	A1223-02	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-121 67-71	A1223-03	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-121 117-127	A1223-04	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB081402
 RPTB081502

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC and SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S1 Compound	IC 8/13/02	CC 8/26/02
Pyrene		XX (32.6%)
Samples Affected	RPSB-123 80-86	RPMW-07D2 97-107
	RPSB-123 100-104.5	
	RPSB-123 116-121	
	RPSB-123 141-146	
	RPSB-123 16-26	
	RPMW-07D2 23-24.5	
	RPMW-07D2 68-69.5	
	RPMW-07D2 97-107	

- X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.
XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) nondetect results.
+= Response factor (RRF)<0.05; estimate (J) positive results and reject (R) nondetect results.

The positive result for total pyrene in sample RPMW-07D2 97-107 has been qualified as estimated (J) for a continuing calibration anomaly in addition to being detected at a level below the quantitation limit.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits with the exception of those diluted out.

Internal Standards

All Internal Standard (IS) recoveries were found inside the control limits of -50 percent to +100 percent of the associated calibration standard.

Laboratory Control Sample Results

Spike recoveries and replicate RPD's were within the QC limits.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory did not perform an MS/MSD on any of the organic fractions of the samples validated in this report.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPSB-123 80-86	VOC	50-fold
RPSB-123 116-121	VOC	5000-fold
RPSB-123 16-26	VOC	2500-fold
RPMW-07D2 23-24.5	VOC	500-fold
RPMW-07D2 68-69.5	VOC	500-fold

Sample	Analyses	Dilution Reported
RPSB-121 7-8.5	VOC	5000-fold
RPSB-121 20.5-21	VOC	5000-fold
RPSB-123 116-121	VOC/SPLP	16-fold
RPSB-123 16-26	VOC/SPLP	12-fold
RPMW-07D2 23-24.5	VOC/SPLP	4-fold
RPMW-07D2 68-69.5	VOC/SPLP	2-fold
RPSB-121 7-8.5	VOC/SPLP	10-fold
RPSB-121 20.5-21	VOC/SPLP	40-fold
RPSB-123 80-86	PAH	30-fold
RPSB-123 116-121	PAH	750-fold
RPSB-123 16-26	PAH	150-fold
RPMW-07D2 23-24.5	PAH	50-fold
RPMW-07D2 68-69.5	PAH	150-fold
RPSB-121 7-8.5	PAH	250-fold
RPSB-121 20.5-21	PAH	1000-fold
RPSB-123 80-86	PAH/SPLP	2-fold
RPSB-123 116-121	PAH/SPLP	20-fold
RPSB-123 16-26	PAH/SPLP	2-fold
RPMW-07D2 68-69.5	PAH/SPLP	10-fold
RPMW-07D2 23-24.5	PAH/SPLP	5-fold
RPSB-121 7-8.5	PAH/SPLP	5-fold
RPSB-121 20.5-21	PAH/SPLP	20-fold

Target Compound Identification

No erroneous compound identifications appear based upon the evaluation of retention times and the examination of sample preparation and injection logs, chromatograms, and forms I.

The inorganic (cyanide) data were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable. Sample RPMW-07D2 (A1213-02A) was evidently distilled and analyzed for cyanide. The result (form I) for this sample, however, is not provided in the data package, nor is an explanation as to why.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

The preparation blank (MB-3012) distilled 8/15/02 and analyzed 8/19/02 had a positive value detected of 0.497 mg/Kg. The preparation blank (MB-3027) distilled 8/16/02 and analyzed 8/19/02 had a positive value detected of 0.253 mg/Kg. These values exceed the IDL but are less than the CRDL. No action has been taken, as these blank results are not considered significant enough to affect the reported data.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Results

Sample spike recoveries were within the QC limits.

Laboratory Duplicate Results

Laboratory duplicates were within QC limits.

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1235-A1248
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: September 26, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPSB-120 7-12	A1235-01	BTEX (8021), PAH's (8270), CN (9012)
RPSB-120 37-47	A1235-02	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-120 63.5-67	A1235-03	BTEX (8021), PAH's (8270), CN (9012)
RPSB-118 7-12.5	A1235-05	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-118 26-27	A1235-06	BTEX (8021), PAH's (8270), CN (9012)
RPSB-118 57-67	A1235-07	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-124 7-13	A1248-01	BTEX (8021), PAH's (8270), CN (9012)
RPSB-124 27-37	A1248-02	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-124 17-27	A1248-03	BTEX (8021), PAH's (8270), CN (9012)
RPSB-124 67-77	A1248-04	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-122 7-11.5	A1248-05	BTEX (8021), PAH's (8270), CN (9012)
RPSB-122 27-37 (MS/MSD)	A1248-06	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-122 74-77	A1248-07	BTEX (8021), PAH's (8270), CN (9012)
RPSB-122 11.5-12	A1248-08	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-128 1-4	A1248-09	BTEX (8021), PAH's (8270), CN (9012)
RPSB-128 10-17	A1248-10	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSBXX081902-1	A1248-11	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPMW-14D2 10-14	A1248-13	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-14D2 67-77	A1248-14	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-14D2 97-107	A1248-15	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-15D 9.5-10	A1248-16	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-15D 9-9.5	A1248-17	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-15D 67-77	A1248-18	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-126 12-17	A1248-19	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-126 27-37	A1248-20	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-126 47-57	A1248-21	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB081602
RPTB081902

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC and SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S1 Compound	IC 8/05/02	CC 8/30/02
Indeno(1,2,3-cd)pyrene		XX (35.5%)
Benzo(g,h,i)perylene		XX (25.3%)
Samples Affected	All listed	RPSD-118 7-12.5

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.
XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) nondetect results.
+= Response factor (RRF)<0.05; estimate (J) positive results and reject (R) nondetect results.

The positive results for total Indeno(1,2,3-cd)pyrene and total Benzo(g,h,i)perylene in sample RPSD-118 7-12.5 have been qualified as estimated (J) due to a continuing calibration anomaly in addition to being detected at a level below the quantitation limit.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits with the exception of those diluted out.

Internal Standards

The following table lists the Internal Standard (IS) recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard(s): Sample ID	Recovery	Actions
Perylene-d12: RPSBXX081902-1	36 %	Estimate positive and nondetect (J/UJ) values: Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3)cd-pyrene, Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene

Selected positive and nondetect results for sample RPSBXX081902-1 are qualified as estimated (J/UJ) due to low IS recovery for Perylene-d12.

Laboratory Control Sample Results

Spike recoveries and replicate RPD's were within the QC limits.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory performed an MS/MSD on sample RPSB-122 27-37 for VOC, SPLP/VOC, SVOC, and SPLP SVOC analyses. Spike recoveries were within the advisory QC limits.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPSB-118 7-12.5	VOC	1000-fold
RPSB-118 26-27	VOC	50-fold
RPSB-118 57-67	Benzene	3-fold
RPSB-120 7-12	VOC	50-fold
RPSB-122 11.5-12	VOC	50-fold
RPSB-122 7-11.5	VOC	50-fold
RPSB-124 7-13	VOC	50-fold
RPSB-126 12-17	VOC	50-fold
RPSB-128 10-17	Toluene, Ethylbenzene, Xylene	10-fold
RPSB-128 1-4	VOC	5000-fold
RPMW-14D2 10-14	VOC	2000-fold
RPMW-15D 9.5-10	VOC	2000-fold
RPMW-15D 9-9.5	VOC	1250-fold
RPSBXX081902-1	VOC	50-fold
RPSB-122 7-11.5	VOC/SPLP	4-fold
RPSB-124 7-13	VOC/SPLP	2-fold
RPSB-128 1-4	VOC/SPLP	40-fold
RPMW-14D2 10-14	VOC/SPLP	10-fold
RPMW-15D 9.5-10	VOC/SPLP	16-fold
RPMW-15D 9-9.5	VOC/SPLP	10-fold
RPSB-118 7-12.5	PAH	250-fold
RPSB-118 26-27	PAH	250-fold
RPSB-120 7-12	PAH	40-fold
RPSB-122 11.5-12	PAH	5-fold
RPSB-124 7-13	PAH	100-fold
RPSB-126 12-17	PAH	2-fold
RPSB-128 1-4	PAH	50-fold
RPMW-14D2 10-14	PAH	20-fold
RPMW-15D 9.5-10	PAH	8-fold
RPMW-15D 9-9.5	PAH	10-fold
RPSBXX081902-1	PAH	10-fold
RPSB-124 7-13	PAH/SPLP	2-fold
RPSB-128 1-4	PAH/SPLP	4-fold

Sample RPSB-128 10-17 was initially run straight and Benzene was reported. The sample was diluted 1:10 (by analyzing a 0.5 gram aliquot) for Toluene, Ethylbenzene and Xylenes and the results were positive, but lower than expected. The results have been qualified as estimated low (J) likely due to the analysis of a non-representative sample aliquot resulting from sample non-homogeneity.

Target Compound Identification

No erroneous compound identifications appear based upon retention time evaluations and the examination of sample preparation and injection logs, chromatograms, and forms I.

The inorganic (cyanide) data were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

The preparation blank (MB-3090) distilled 8/21/02 and analyzed 8/23/02 had a positive value detected of 0.302 mg/Kg. This value is greater than the IDL, but less than the CRDL. No action has been taken, as the blank result is not considered significant enough to have an affect on the reported data.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Results

The following table lists the MS recoveries found outside of the advisory limits for cyanide and the resultant actions.

Sample ID	Recovery	Actions
RPSB-122 27-37	62	Qualify all sample results and non-detects in the distillation batch as estimated (J/UJ)

Rockaway Park RI, Project# 982482

Samples associated with the spiked sample distilled on 8/21/02 include RPSB-124 7-13, RPSB-124 27-37, RPSB-124 17-27, RPSB124 67-77, RPSB-122 7-11.5, RPSB-122 27-37, RPSB-122 74-77, RPSB-122 11.5-12, RPSB-128 1-4, RPSB-128 10-17, RPSBXX081902-1, RPMW-14D2 10-14, RPMW-14D2 67-77, RPMW-14D2 97-107, and RPMW-15D 9.5-10. A post-distillation spike was analyzed and recoveries were within the QC limits.

Laboratory Duplicate Results

Laboratory duplicates were within QC limits.

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1254-A1273
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: October 7, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPSB-125 17-25	A1254-01	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-125 25-27	A1254-02	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-125 63-67	A1254-03	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-18D 52-55	A1254-04	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-18D 81-83	A1254-05	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-18D 87-97	A1254-06	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-129 15-17	A1273-01	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-129 37-47	A1273-02	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-129 87-97	A1273-03	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-08D2 7-10	A1273-04	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-08D2 52-57	A1273-05	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-08D2 97-107 (MS/MSD)	A1273-06	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-119 14-17	A1273-07	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-119 40-47	A1273-08	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-119 87-97	A1273-09	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSBXX-082302-1	A1273-10	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB082102
 RPTB082302

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC and SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S1 Compound	IC 8/26/02	CC 9/4/02	CC 9/5/02
Pyrene			XX (27.3)
Benzo(k)fluoranthene		XX (34.2%)	
Benzo(g,h,i)perylene		XX (26.1%)	
Samples Affected	All listed	RPSB-125 17-25	RPMW-18D 52-55
		RPSB-125 25-27	RPMW-18D 81-83
		RPMW-18D 52-55	RPSB-119 14-17

Instrument ID: S1 Compound	IC 8/26/02	CC 9/4/02	CC 9/5/02
Pyrene			XX (27.3)
Benzo(k)fluoranthene		XX (34.2%)	
Benzo(g,h,i)perylene		XX (26.1%)	
Samples Affected	All listed	RPMW-18D 81-83	RPSBXX-082302-1
		RPSB-125 63-67	
		RPMW-08D2 7-10	
		RPMW-08D2 97-107	
		RPSB-119 40-47	

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.
 XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) nondetect results.
 += Response factor (RRF)<0.05; estimate (J) positive results and reject (R) nondetect results.

Positive results, if applicable, for total Benzo(k)fluoranthene and total Benzo(g,h,i)perylene in samples RPSB-125 17-25 (1:375), RPSB-125 25-27 (1:200), RPMW-18D 52-55 (1:100), and RPMW-18D 81-83 (1:250) have been qualified as estimated (J) due to a continuing calibration nonconformance. Positive results, if applicable, for SPLP Benzo(k)fluoranthene and SPLP Benzo(g,h,i)perylene in samples RPSB-125 63-67, RPMW-08D2 7-10, RPMW-08D2 97-107, and RPSB-119 40-47 have been qualified as estimated (J) due to a continuing calibration nonconformance. Positive results, if applicable, for SPLP pyrene in samples RPMW-18D 52-55, RPMW-18D 81-83, RPSB-119 14-17, and RPSBXX-082302-1 have been qualified as estimated (J) due to a continuing calibration nonconformance. Since the response factors are sufficiently high for the aforementioned samples and the percent drift is only moderately excessive, the quantitation limits for the non-detects have not been qualified.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

Nitrobenzene-d5 was out slightly high in samples RPSB-125 17-25 and RPMW-18D 81-83 due to matrix interference. The surrogates were diluted out when these samples were re-analyzed at a further dilution. Since the majority of the data is considered estimated (E) from the original (5X) run due to values exceeding the highest calibration standard, no further qualifications are necessary. All other surrogate recoveries were inside the QC limits with the exception of those diluted out.

Internal Standards

The following table lists the Internal Standard (IS) recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard(s): Sample ID	Recovery	Actions
Naphthalene-d8 Perylene-d12: RPSB-125 17-25	43 % 38 %	Estimate positive (J) values: Benzo(b)fluoranthene, Benzo(k)fluoranthene, Indeno(1,2,3)cd-pyrene, Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene
Perylene-d12: RPSB-125 25-27	36 %	Estimate positive (J) values: Benzo(b)fluoranthene, Benzo(k)fluoranthene, Indeno(1,2,3)cd-pyrene, Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene
Chrysene-d12 Perylene-d12: RPMW-18D 81-83	50 % 29 %	Estimate positive (J) values: Benzo(k)fluoranthene, Indeno(1,2,3)cd-pyrene, Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene

Selected positive results for samples RPSB-125 17-25, RPSB-125 25-27 and RPMW-18D 81-83 are qualified as estimated (J) due to low IS recovery for Naphthalene-d8, Chrysene-d12, and Perylene-d12.

Laboratory Control Sample Results

Spike recoveries and replicate RPD's were within the QC limits.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory performed an MS/MSD on sample RPMW-08D2 97-107 for VOC, SPLP/VOC, SVOC, and SPLP SVOC analyses. Spike recoveries were within the advisory QC limits with the exception of those listed in the following table.

Compound	MS	MSD	RPD
Benzene	217 *	308 *	35
Toluene	83 *	92	10

* = Outside advisory QC limits.

Both the MS and MSD for benzene in sample RPMW-08D2 97-107 was out high while the RPD was inside the QC limits. The benzene result for the spiked sample has been qualified as estimated. Toluene was out low in the MS, while the MSD and RPD are in control. No toluene was detected in the (unspiked) sample and no action has been taken.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPSB-125 17-25	VOC	2500-fold
RPSB-125 25-27	VOC	1000-fold
RPMW-18D 52-55	VOC	250-fold
RPMW-18D 81-83	VOC	200-fold
RPSB-119 14-17	VOC	2500-fold
RPSB-129 15-17	VOC	1000-fold
RPSBXX-082302-1	VOC	1000-fold
RPSB-125 17-25	VOC/SPLP	8-fold
RPSB-125 25-27	VOC/SPLP	16-fold
RPMW-18D 81-83	VOC/SPLP	2.5-fold
RPSB-119 14-17	VOC/SPLP	12-fold
RPSB-129 15-17	VOC/SPLP	10-fold
RPSBXX-082302-1	VOC/SPLP	16-fold
RPSB-125 17-25	PAH	5-fold
RPSB-125 17-25	PAH	375-fold
RPSB-125 25-27	PAH	5-fold
RPSB-125 25-27	PAH	200-fold
RPMW-18D 52-55	PAH	100-fold
RPMW-18D 81-83	PAH	5-fold
RPMW-18D 81-83	PAH	250-fold
RPSB-119 14-17	PAH	250-fold
RPSB-129 15-17	PAH	100-fold
RPSBXX-082302-1	PAH	250-fold
RPSB-125 17-25	PAH/SPLP	10-fold
RPSB-125 25-27	PAH/SPLP	5-fold
RPMW-18D 52-55	PAH/SPLP	5-fold
RPMW-18D 81-83	PAH/SPLP	30-fold
RPSB-119 14-17	PAH/SPLP	25-fold
RPSB-129 15-17	PAH/SPLP	10-fold
RPSBXX-082302-1	PAH/SPLP	25-fold

Target Compound Identification

No erroneous compound identifications appear based upon retention time evaluations and the examination of sample preparation and injection logs, chromatograms, and forms I.

The inorganic (cyanide) data were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

There was no blank contamination associated with the samples included in this report.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Results

Sample spike recoveries were within the QC limits.

Laboratory Duplicate Results

Laboratory duplicates were within QC limits.

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1297-A1311
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: October 15, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPSB-127 14.5-17	A1297-01	BTEX (8021), PAH's (8270), CN (9012)
RPSB-127 21-23	A1297-02	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-127 57-67	A1297-03	BTEX (8021), PAH's (8270), CN (9012)
RPSB-130 22-24	A1297-06	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-130 47-57	A1297-07	BTEX (8021), PAH's (8270), CN (9012)
RPSB-130 87-97	A1297-08	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-02D2 19-23	A1311-01	BTEX (8021), PAH's (8270), CN (9012)
RPMW-02D2 62-66	A1311-02	BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-02D2 97-107 (MS/MSD)	A1311-03	BTEX (8021), PAH's (8270), CN (9012)
RPSBXX-082902-1	A1311-04	BTEX/SPLP (8260), PAH's/SPLP (8270)

ASSOCIATED QC SAMPLE(S): Field Blank: RPF082802-1
 Trip Blank: RPTB082802-1
 RPTB082902-1

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times with the exception of the PAH re-runs for samples RPSB-127 14.5-17, RPSB-130 87-97 and RPSBXX-082902-1. These samples were extracted 23, 21 and 20 days respectively after sample collection. Positive results and the quantitation limits have been qualified as estimated (J/UJ) for exceeding the 14 day extraction hold time. All samples were received within temperature specifications of 2°C and 6°C.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC initial and continuing calibrations are summarized in the following table.

Instrument ID: V4 Compound	IC 8/20/02	CC 8/30/02	CC 8/30/02
Benzene		XX (27.6%)	XX (26.9%)
Samples Affected	All listed	RPSB-127 57-67	RPSB-127 14.5-17
		RPSB-130 47-57	RPSB-127 21-23
		RPSB-130 87-97	

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.

XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) nondetect results.

+= Response factor (RRF)<0.05; estimate (J) positive results and reject (R) nondetect results.

Positive results, if applicable, for total Benzene in samples RPSB-127 57-67, RPSB-130 47-57, RPSB-130 87-97, RPSB-127 14.5-17, and RPSB-127 21-23 have been qualified as estimated (J) due to continuing calibration nonconformances. Since the response factors are sufficiently high for the aforementioned samples and the percent drift is only moderately excessive, the quantitation limits for the non-detects have not been qualified.

Compounds that did not meet criteria in the SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S2 Compound	IC 9/12/02	CC 9/17/02
Dibenzo(a,h)anthracene		XX (25.5%)
Samples Affected	All listed	RPMW-02D2 62-66

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.
XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) nondetect results.
+= Response factor (RRF)<0.05; estimate (J) positive results and reject (R) nondetect results.

SPLP Dibenzo(a,h)anthracene was not detected in sample RPMW-02D2 62-66. Since the response factor is sufficiently high and the percent drift is only slightly excessive, the quantitation limit has not been qualified.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits with the exception of those diluted out and those listed in the following table.

Sample ID	Nitrobenzene-d5	2-Fluorobiphenyl	1,2-Dichlorobenzene-d4
RPSB-127 14.5-17	41 %	41 %	41 %
RPSB-130 87-97		51 %	
RPSBXX-082902-1	36 %	45 %	33 %

Three surrogates (Nitrobenzene-d5, 2-Fluorobiphenyl and 1,2-Dichlorobenzene-d4) were out low in samples RPSB-127 14.5-17 and RPSBXX-082902-1 and one surrogate (2-Fluorobiphenyl) was out low in sample RPSB-130 87-97. The samples were re-analyzed and one surrogate (2-Fluorobiphenyl) was out low in sample RPSB-127 14.5-17 and all surrogates were within the QC limits in samples RPSBXX-082902-1 and RPSB-130 87-97. Positive PAH's detected in the original runs of these samples and the quantitation limits have been qualified as estimated (J/UJ) for low surrogate recoveries.

Internal Standards

All Internal Standard (IS) recoveries were found inside the control limits of -50 percent to +100 percent of the associated calibration standard.

Laboratory Control Sample Results

Spike recoveries and replicate RPD's were within the QC limits.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory performed an MS/MSD on sample RPMW-02D2 97-107 for VOC, SVOC, and SPLP SVOC analyses. Spike recoveries were within the advisory QC limits with the exception of those listed in the following table.

Compound	MS	MSD	RPD
Benzene	133 *	125	6
Phenanthrene	65 *	60 *	8
Pyrene	62 *	62 *	0
Benzo(a)pyrene	65 *	65 *	0

* = Outside advisory QC limits.

Benzene was out high in the MS, while the MSD and RPD are in control. No benzene was detected in the (unspiked) sample and no action has been taken. Phenanthrene, Pyrene, and Benzo(a)pyrene were all out low in the MS, while the MSD and RPD are in control. The results for Phenanthrene and Pyrene in sample RPMW-02D2 97-107 are qualified as estimated (J) as they were detected at a concentration below the limit of quantitation. No additional action has been taken.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPSB-127 14.5-17	VOC	2-fold
RPSB-130 22-24	VOC	10-fold

Sample	Analyses	Dilution Reported
RPMW-02D2 62-66	VOC	100-fold
RPSBXX-082902-1	VOC	2-fold
RPMW-02D2 62-66	PAH	80-fold
RPSBXX-082902-1	PAH	4-fold
RPMW-02D2 62-66	SPLP PAH	8-fold

Target Compound Identification

No erroneous compound identifications appear based upon retention time evaluations and the examination of sample preparation and injection logs, chromatograms, and forms I.

The inorganic (cyanide) data were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

There was no blank contamination associated with the samples included in this report.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Results

Sample spike recoveries were within the QC limits.

Laboratory Duplicate Results

Laboratory duplicates were within QC limits.

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1409
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: November 13, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPTS092502	A1409-01	VOC's (8260), SVOC's (8270), CN (9012)
RPSS-19 0-2	A1409-02	PCB's (8082)
RPSS-18 0-2	A1409-03	PCB's (8082)
RPSS-17 0-2	A1409-04	PCB's (8082)
RPSSXX092502	A1409-05	PCB's (8082)
RPMW-01I	A1409-06	PAH's (8270)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB092502

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC and SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S1 Compound	IC 8/13/02	CC 8/26/02
2,4-Dinitrophenol	X (33.7)	XX (30.2%)
Samples Affected	RPTS092502	RPTS092502

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.

XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) nondetect results.

+= Response factor (RRF)<0.05; estimate (J) positive results and reject (R) nondetect results.

The quantitation limit for total 2,4-Dinitrophenol in sample RPTS092502 has been qualified as estimated (UJ).

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits with the exception of those diluted out.

Internal Standards

The following table lists the Internal Standard (IS) recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard(s): Sample ID	Recovery	Actions
Chrysene-d12:	206 %	No Action
Perylene-d12: S2TLCSD	211 %	No Action

The Internal Standards Chrysene-d12 and Perylene-d12 were outside of the QC limits in the LCSD. These recoveries have no significant effect on the sample results; therefore, no additional action has been taken.

Laboratory Control Sample Results

All Laboratory control spike recoveries were inside the QC limits with the exception of those listed in the following table.

Compound	LCS	LCSD	RPD
2-Nitroaniline	55 *	61 *	10
2,6-Dinitrotoluene	59 *	65	10
2,4-Dinitrophenol	12 *	13 *	8
4,6-Dinitro-2-methylphenol	31 *	34	9
4-Bromophenyl-phenylether	61 *	65 *	6
Hexachlorobenzene	64 *	65 *	2
Di-n-butylphthalate	60 *	66 *	10
Butylbenzylphthalate	51 *	65 *	24
Bis(2-Ethylhexyl)phthalate	48 *	61 *	24
Di-n-octylphthalate	43 *	57 *	28
3,3'-Dichlorobenzene	35	53	41 *

* = Outside QC limits.

No positive results were detected for the compounds with at least one laboratory spike recovery below the lower control limit or an RPD outside the QC limits. The quantitation limits for all compounds with at least one laboratory spike recovery below the lower control limit have been qualified as estimated (UJ).

Matrix Spike/Matrix Spike Duplicate Results

The laboratory did not perform an MS/MSD on any of the organic fractions of the samples validated in this report.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPTS092502	VOC	100-fold
RPTS092502	SVOC's	50-fold

Target Compound Identification

No erroneous compound identifications appear based upon the evaluation of retention times and the examination of sample preparation and injection logs, chromatograms, and forms I.

The inorganic (cyanide) data were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

There was no blank contamination associated with the samples included in this report.

Laboratory Control Sample Results

All laboratory spike recoveries were within the QC limits with the exception of those listed in the following table.

LCS ID	Compound	LCS % Recovery
LCS-3589	Cyanide	68

Rockaway Park RI, Project# 982482

Due to the low LCS recovery, the quantitation limit for sample RPTS092502 has been qualified as estimated (UJ).

Matrix Spike Recoveries

Sample spike recoveries were within the QC limits.

Laboratory Duplicate Results

Laboratory duplicates were within QC limits

Appendix E

Chain-of-Custody Forms and Data Validation Reports - Groundwater

Groundwater Chain-of-Custody Forms

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

[illegible]

WHITE; LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO							INVOICE TO							LAB PROJECT #:						
COMPANY <u>GEI Consultants, Inc</u>				PHONE <u>860.537.0751</u>			COMPANY <u>Same as</u>				PHONE			<u>41118</u>						
NAME <u>Dave Terry</u>				FAX <u>860.537.6347</u>			NAME <u>Report to</u>				FAX									
ADDRESS <u>188 Norwich Ave</u>							ADDRESS													
CITY/ST/ZIP <u>Colchester, CT 06415</u>							CITY/ST/ZIP							TURNAROUND TIME:						
CLIENT PROJECT NAME:			CLIENT PROJECT #:			CLIENT P.O.#:		REQUESTED ANALYSES												
<u>Key Span- Rockaway Park</u>			<u>982482</u>					<u>BTEX-8021</u> <u>PAHS-8270</u>												
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID											# OF CONTAINERS	COMMENTS	
<u>RPGR27-GW8-12</u>	<u>7/22/02 930</u>		☒	☒			<u>41118-01</u>	<u>3</u>	☒	☒										
<u>RPGR27-GW20-24</u>	<u>7/22/02 1030</u>		☒	☒			<u>41118-02</u>	<u>3</u>	☒	☒										
<u>RPGR27-GW36-40</u>	<u>7/22/02 1215</u>		☒	☒			<u>41118-03</u>	<u>3</u>	☒	☒										
<u>RPTB072202</u>	<u>7/22/02 1600</u>		☒	☒			<u>41118-04</u>	<u>2</u>	☒											
	/																			
	/																			
	/																			
	/																			
	/																			
	/																			
	/																			
	/																			
	/																			
	/																			
TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:					COOLER TEMP:								
<u>1</u>	<u>Rachel L. Miller</u>	<u>7/22/02 1800</u>	<u>shipped via FedEx</u>		<u>/</u>							<u>4°C</u>								
<u>2</u>		<u>/</u>	<u>air bill # 8360-2721-9312</u>		<u>/</u>															
<u>3</u>		<u>/</u>	<u>Sara Krasnowski</u>		<u>7-23-02 0900</u>															

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

[illegible]

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

REPORT TO							INVOICE TO										
COMPANY <i>GEL Consultants Inc</i>				PHONE <i>860.537.0751</i>			COMPANY <i>Same as</i>				PHONE						
NAME <i>Dave Terry</i>				FAX <i>860.537.6347</i>			NAME <i>Report to</i>				FAX						
ADDRESS <i>188 Norwich Ave</i>							ADDRESS										
CITY/ST/ZIP <i>Colchester, CT 06415</i>							CITY/ST/ZIP										
CLIENT PROJECT NAME:			CLIENT PROJECT #:			CLIENT P.O.#:			REQUESTED ANALYSES								
									<i>BTEX - 8021</i> <i>PAHs - 8270</i>								
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS									COMMENTS
RPGP28A-GWB-12	'900		✓	✓			A1128-01	3	✓								
RPGP28A-GW24-28	'1030		✓	✓			A1128-02	3	✓								
RPGP28A-GW36-40	'1230		✓	✓			A1128-03	3	✓								
RGPXX072402-1	'915		✓	✓			★	3	✓								
RPTB072402	'1600		✓	✓			A1128-04	2	✓								DUP OF RGP28AGW81Z
	/																
	/																
	/																
	/																
	/																
	/																
	/																
	/																
	/																
	/																
TSF#	RELINQUISHED BY		DATE/TIME		ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:								COOLER TEMP:
1	<i>Rachelle L. Mc</i>		7/24/01 1800		shipped via FedEx		/		★ SAMPLES BROKEN IN TRANSIT								6°C
2			/		air bill # 8360 2721 9297		/										
3	9		/		<i>Sara M... ..</i>		7-2502 / 0900										

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com



175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO							INVOICE TO											
COMPANY GEI Consultants				PHONE 860-537-0751			COMPANY Same as Report to:				PHONE							
NAME David Terry				FAX 860-537-6347			NAME				FAX							
ADDRESS P.O. Box 297							ADDRESS											
CITY/ST/ZIP Colchester, CT 06415							CITY/ST/ZIP											
CLIENT PROJECT NAME: Rockaway Park				CLIENT PROJECT #: 982482-9		CLIENT P.O.#:												
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	BTEX (Method 8021)	PAHs (Method 8270)	Total CN (Method 900)	REQUESTED ANALYSES						COMMENTS
PZ-06	9/17/02 / 1655			✓			01	4	X	X	X							
RPMW-05 I	9/17/02 / 1201			✓			02	4	X	X	X							
RPMW-05 S	9/17/02 / 1035			✓			03	4	X	X	X							
RPMW-08 S	9/17/02 / 1510			✓			04	4	X	X	X							
RPMW-08 I	9/17/02 / 1650			✓			05	4	X	X	X							
TRIP BLANK	/			✓			06	1	X									
	/																	
	/																	
	/																	
	/																	
	/																	
	/																	
	/																	
	/																	
TSF#	RELINQUISHED BY		DATE/TIME		ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:						COOLER TEMP:			
	JTV		9/17/02 / 1800		Fed EX		/		EOD file and data package to Kevin Harris						4°C			
			/		Lisa Kucharski		9-18-02 / 0900		343 North Lindbergh Blvd Suite 312 St Louis, MO 63141									
5			/				/		email: Kharris@geiconsultants.com									

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page i of 2

REPORT TO								INVOICE TO								LAB PROJECT #:			
COMPANY GEI Consultants				PHONE 860-537-0751				COMPANY				PHONE				A1369			
NAME David Terry				FAX 860-537-6347				NAME				FAX							
ADDRESS P.O. Box 297								ADDRESS								TURNAROUND TIME:			
CITY/ST/ZIP Colchester, CT 06415								CITY/ST/ZIP											
CLIENT PROJECT NAME: ROCKAWAY PARK				CLIENT PROJECT #: 982482-9				CLIENT P.O.#:				REQUESTED ANALYSES <i>BTEX (PPEL, HELPERS)</i> <i>PAH (8270, no PPEL)</i> <i>TOTAL CN (9012, N/A)</i>							
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	COMMENTS										
RPMW-08D	9-18-02/ 0949			✓			01	4	X	X	X								
RPMW-08D2	9-18-02/ 1055			✓			02	4	X	X	X								
RPMW-13S	9-18-02/ 1025			✓			03	4	X	X	X								
RPMW-13I	9-18-02/ 1205			✓			04	4	X	X	X								
RPMW-13D	9-18-02/ 1428			✓			05	4	X	X	X								
RPMW-13D2	9-18-02/ 1555			✓			06	4	X	X	X								
RPMW-14S	9-18-02/ 1318			✓			07	4	X	X	X								
RPMW-14I	9-18-02/ 1500			✓			08	4	X	X	X								
RPMW-14D	9-18-02/ 1633			✓			09	4	X	X	X								
RPMWxx091802-1	9-18-02/ 0800			✓			10	4	X	X	X						DUP OF RPMW-14I		
30 BW-01	9-18-02/ 1525			✓			11	4	X	X	X								
30 BW-02	9-18-02/ 1542			✓			12	4	X	X	X								

RELINQUISHED BY		DATE/TIME	ACCEPTED BY		DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
Jamie Vollee		9-18-02/ 1845	<i>Sara K...</i>		9-19-02 / 0845	EDD FILED DATA PACKAGE TO KEVIN HARRIS 243 North Lindbergh Blvd. Suite 312, St. Louis, MO, 63141 Email: kharris@geiconsultants.com	6°C
		/			/		
		/			/		

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

REPORT TO								INVOICE TO								LAB PROJECT #:			
COMPANY <u>GEI Consultants</u>				PHONE <u>860-537-0751</u>				COMPANY				PHONE				<u>A1369</u>			
NAME <u>DAVID TERRY</u>				FAX <u>860-537-6347</u>				NAME				FAX							
ADDRESS <u>P.O. Box 297</u>								ADDRESS											
CITY/ST/ZIP <u>Colchester, CT 06415</u>								CITY/ST/ZIP								TURNAROUND TIME:			
CLIENT PROJECT NAME: <u>ROCKAWAY PARK</u>				CLIENT PROJECT #: <u>9824B2-9</u>				CLIENT P.O.#:				<u>BTX (821, 141 P.P.s)</u> <u>PAH (8270, 141 P.P.s)</u> <u>TOTAL CN (9012, 141 P.P.s)</u> REQUESTED ANALYSES							
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	COMMENTS										
MW-03	9-18-02/1710			✓			13	4	X	X	X								
RPMW-18I	9-18-02/1712			✓			14	4	X	X	X								
RPMW-14DZ	9-18-02/1805			✓			15	4	X	X	X								
TRIP BLANK	/			✓			16	1	X										
	/																		
	/																		
	/																		
	/																		
	/																		
	/																		
	/																		
	/																		
	/																		
TSF# <u>10000</u>	RELINQUISHED BY <u>Samie Vallee</u>		DATE/TIME <u>9-18-02/1845</u>		ACCEPTED BY <u>[Signature]</u>		DATE/TIME <u>9-19-02/0845</u>		ADDITIONAL REMARKS: EDD FILE & DATA PAK TO: REVIN HARRIS 243 North Linelbergh Blvd. Suite 312, St. Louis, MO, 63141 EMAIL: Kharis@geiconsultants.com								COOLER TEMP: <u>6°C</u>		

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

REPORT TO							INVOICE TO							LAB PROJECT #:					
COMPANY <u>GEI Consultants</u>				PHONE <u>860-537-0751</u>			COMPANY <u>Same as Report to</u>				PHONE			<u>A1379</u>					
NAME <u>David Terry</u>				FAX <u>860-537-6347</u>			NAME				FAX								
ADDRESS <u>P.O. Box 297</u>							ADDRESS							TURNAROUND TIME:					
CITY/ST/ZIP <u>Colchester, CT 06415</u>							CITY/ST/ZIP												
CLIENT PROJECT NAME: <u>Rockaway Park</u>			CLIENT PROJECT #: <u>982482-9</u>			CLIENT P.O.#:		REQUESTED ANALYSES BTEX (Method 8021) + PAHs (Method 8270) Total CN (Method 9012) + Alkalinity Total manganese + dissolved manganese + dissolved ferrous iron Total iron Sulfate Nitrate											
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID											# OF CONTAINERS	COMMENTS
RPMW-12S	9/19/02 / 0957			✓			01	4	X	X	X								
RPMW-12I	9/19/02 / 1052			✓			02	4	X	X	X								
RPMW-12 D	9/19/02 / 1335			✓			03	9	X	X	X	X	X	X	X	X	X		
RPMW-12 D2	9/19/02 / 1557			✓			04	9	X	X	X	X	X	X	X	X	X		
RPMW-11I	9/19/02 / 0859			✓			05	4	X	X	X								
RPMW-11 D	9/19/02 / 1055			✓			06	4	X	X	X								
MW-A	9/19/02 / 1429			✓			07	9	X	X	X	X	X	X	X	X	X		
PR-RPMW-18D	9/19/02 / 0920			✓			08	4	X	X	X								
P2-02	9/19/02 / 1020			✓			09	4	X	X	X								
RPMW-06I	9/19/02 / 1657			✓			10	9	X	X	X	X	X	X	X	X	X		
RPMW-17S	9/19/02 / 1400			✓			11	4	X	X	X								
RPMW-17D	9/19/02 / 1540			✓			12	4	X	X	X								

TSF#
13

RELINQUISHED BY
JL

DATE/TIME
9/19/02 / 1200

ACCEPTED BY
Kevin Harris

DATE/TIME
9-20-02 0900

ADDITIONAL REMARKS:
EDD file & data package to:
Kevin Harris
243 North Lindbergh Blvd
Suite 312
St Louis, MO 63141
email: Kharris@geiconsultants.com

COOLER TEMP:
3°C

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY



175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page 2 of 2[illegible]

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO							INVOICE TO							LAB PROJECT #:				
COMPANY			PHONE				COMPANY			PHONE				LAB PROJECT #:				
NAME			FAX				NAME			FAX				TURNAROUND TIME:				
ADDRESS							ADDRESS											
CITY/ST/ZIP							CITY/ST/ZIP											
CLIENT PROJECT NAME:			CLIENT PROJECT #:		CLIENT P.O.#:		REQUESTED ANALYSES											
SAMPLE IDENTIFICATION			DATE/TIME SAMPLED		COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	COMMENTS						
												BTEX (80% I, H, P, S) PAH (80% I, H, P, S) Total Cu (No H, 90% I) Alkalinity Sulfate Nitrate Total Manganese Dissolved Manganese Total Iron Dissolved Ferric Iron						
PZ-04			9/20/02/ 1314				✓			01	4	Notes						
RPMW-04S			9/20/02/ 1005				✓			02	4	(1) Dissolved Ferric Iron samples are						
RPMW-04I			9/20/02/ 1105				✓			03	4	field filtered						
RPMW-01I			9/20/02/ 1112				✓			04	4	(2) Dissolved						
RPMW-01S			9/20/02/ 1012				✓			05	4	Manganese must be						
PZ-05			9/20/02/ 0937				✓			06	4	filtered by lab						
RPMW-15I			9/20/02/ 1153				✓			07	9	Use for MS/MSO only						
RPMW-15IMSMBD			9/20/02/ 1153				✓			07	9							
RPMW-03S			9/20/02/ 1349				✓			08	4	DUP OF PZ-05						
RPMWXX092002			9/20/02/ 1200				✓			09	4							
RPF0092002			9/20/02/ 1415				✓			10	4							
TRIP BLANK			9/20/02/				✓			11	4							
TSF#		RELINQUISHED BY		DATE/TIME		ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:				COOLER TEMP:				
6000		Jr		9/20/02/ 1520		Red EX		9-20-02/ 0930		EOD file redate package to: Kevin Harris 243 N. Lindbergh Blvd St Louis, MO 63141 email: kharris@gei.com				5°C				

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

9-23-02

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

REPORT TO							INVOICE TO							LAB PROJECT #:				
COMPANY GEI Consultants			PHONE 860-537-0751				COMPANY			PHONE				A1398				
NAME DAVID TERRY			FAX 860-557-6347				NAME			FAX								
ADDRESS P.O. Box 297							ADDRESS							TURNAROUND TIME:				
CITY/ST/ZIP Colchester, CT 06415							CITY/ST/ZIP											
CLIENT PROJECT NAME: Rockaway Park			CLIENT PROJECT #: 932482-9			CLIENT P.O.#:		REQUESTED ANALYSES <i>BrEx (B21, HCL Pres) +</i> <i>PAH (B270, no Pres) +</i> <i>Total Cu (NADH, 90.2)</i> <i>Sulfate, Nitrate, Alkalinity (no Pres)</i> <i>Total Manganese (HNO₃) +</i> <i>Dissolved Manganese (HNO₃) +</i> <i>Total Iron (HCL) +</i> <i>Diss. Ferrus Iron (HCL) +</i>										
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID											# OF CONTAINERS
RPMW-02S	09-24-02/ 0910			✓			01	9	X	X	X	X	X	X	X			
RPMW-02D	9-24-02/ 1033			✓			02	9	X	X	X	X	X	X	X			
RPMW-10S	4-24-02/ 1400			✓			03	9	X	X	X	X	X	X	X			
*RPMW-10S MS MSD	9-24-02/ 1405			✓			03 04	4	X	X	X						*USE FOR MS/MSD ONLY	
RPMW-10 I	9-24-02/ 1630			✓			04 05	9	X	X	X	X	X	X	X			
RPMW-03S	9-24-02/ 1532			✓			05 06	2	X								notes: ① Diss. Ferrus iron was Field Filtered.	
RPMW-01 I	9-24-02/ 1631			✓			06 07	2	X								② LAB must Filter Diss. Manganese samples.	
RPMW-07 S	9-24-02/ 1400			✓			07 08	9	X	X	X	X	X	X	X			
RPMW-07 I	9-24-02/ 1210			✓			08 09	9	X	X	X	X	X	X	X			
RPMW-07 D	9-24-02/ 1015			✓			09 10	9	X	X	X	X	X	X	X			
RPMW-07 D2	9-24-02/ 0900			✓			10 11	4	X	X	X							
RPMW-092402-1	9-24-02/ 1213			✓			11 12	9	X	X	X	X	X	X	X		DUP OF RPMW-07 I	
TSF#	RELINQUISHED BY	DATE/TIME		ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:						COOLER TEMP:				
0010	<i>[Signature]</i>	9/24/02 1900		<i>[Signature]</i>		9-25-02/ 0900		EDD file & data package To: Kevin Harris 243 North Linelbergh Blvd. Suite 312 St. Louis, MO 63141 email: kharris@geiconsultants.com						3°C				

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO							INVOICE TO							LAB PROJECT #: A1409 TURNAROUND TIME:				
COMPANY GEI Consultants				PHONE 860-537-0751			COMPANY Same as Report to.				PHONE							
NAME Dave Terry				FAX 860-537-6347			NAME				FAX							
ADDRESS PO Box 297							ADDRESS											
CITY/ST/ZIP Colchester, CT							CITY/ST/ZIP											
CLIENT PROJECT NAME: Rockaway Park			CLIENT PROJECT #: 982432-9			CLIENT P.O.#:		REQUESTED ANALYSES VOC (F260) SVOC (8276) Total CN (901) BTEX (8021) PAHs (8276) PCBs										
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID											# OF CONTAINERS
RPTS092503	9/25/02 / 1200	✓			✓		01	4	X	X	X							
RP55-19 0-2	9/25/02 / 0910		✓		✓		02	1						X				
RP55-18 0-2	9/25/02 / 0820		✓		✓		03	1						X				
RP55-17 0-2	9/25/02 / 0830		✓		✓		04	1						X				
RP55XX092502	9/25/02 / 1000		✓		✓		05	1						X			DUP OF RP55-18 0-2	
RPMW-01 I	9/25/02 / 1055			✓			06	1			X							
RPTBC092502	9/25/02 / 1230			✓			07	1			X							
	/																	
	/																	
	/																	
	/																	
	/																	
	/																	
TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY		DATE/TIME	ADDITIONAL REMARKS:		COOLER TEMP:										
200	<i>[Signature]</i>	9/25/02	<i>[Signature]</i>		9/25/02	EDD file & data package to Kevin Harris 243 Lindbergh Blvd Suite 312 St Louis, MO 63141 Email - kharris@jeiconsultants.com		06										

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

REPORT TO							INVOICE TO												
COMPANY GEI Consultants			PHONE 860-531-0751		COMPANY same as report to:			PHONE		LAB PROJECT #:									
NAME Dave Terry			FAX 860-531-6347		NAME			FAX		TURNAROUND TIME:									
ADDRESS P.O. Box 297					ADDRESS														
CITY/ST/ZIP Colchester CT 06415					CITY/ST/ZIP														
CLIENT PROJECT NAME: Rockaway Park			CLIENT PROJECT #: 982482-9		CLIENT P.O.#:														
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES								COMMENTS		
									VOCs (8260)	SVOCs (Method 8270)	Total CA (Method 9012)	Alkalinity (Method 9012)	Total Manganese	Dissolved Manganese	Total Iron	Dissolved Ferrus Iron	phosphate chloride bromide	* nitrate sodium potassium calcium	Fs parameters
RPMW'-16S	11/7/02/12:27			✓			01	11	x	x	x	x	x	x	x	x	x	x	(1) Dissolved ferrus iron samples are field filtered
RPMW-16 I	11/7/02/11:00			✓			07	11	x	x	x	x	x	x	x	x	x	x	
RPTB110702	/			✓			* 070	1	X										
/	/																		
/	/																		
/	/																		
/	/																		
/	/																		
/	/																		
/	/																		
/	/																		
/	/																		
* DID NOT RECEIVE BOTTLES																			
TSF#		RELINQUISHED BY		DATE/TIME		ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:								COOLER TEMP:	
8000		JH		11/7/02 1330		Fed Ex Bethany Remick		11-8-02 0900		EOD File + data package to: Kevin Harris 243 W. Lindbergh Blvd Suite 312 St. Louis, MO 63141								3°C	

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY email: K.harris@geiconsultants.uk

Groundwater Data Validation Reports

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1103-A1120
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: September 6, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPGP25-GW20-24	A1103-01	BTEX (8021), PAH's (8270)
RPGP25-GW36-40	A1103-02	BTEX (8021), PAH's (8270)
RPGP25-GW52-56	A1106-01	BTEX (8021), PAH's (8270)
RPGP25-GW60-64	A1106-02	BTEX (8021), PAH's (8270)
RPGP-26 20-24	A1111-01	BTEX (8021), PAH's (8270)
RPGP26-GW8-12	A1111-02	BTEX (8021), PAH's (8270)
RPGP26-GW20-24	A1111-03	BTEX (8021), PAH's (8270)
RPGP26-GW36-40	A1111-04	BTEX (8021), PAH's (8270)
RPGP25-GW71-75	A1111-05	BTEX (8021), PAH's (8270)
RPGP27-GW8-12	A1118-01	BTEX (8021), PAH's (8270)
RPGP27-GW20-24	A1118-02	BTEX (8021), PAH's (8270)
RPGP27-GW36-40	A1118-03	BTEX (8021), PAH's (8270)
RPGP27-GW52-56	A1120-01	BTEX (8021), PAH's (8270)
RPGP27-GW71-75	A1120-02	BTEX (8021), PAH's (8270)
RPGP-27 12-16	A1120-04	BTEX (8021), PAH's (8270)
RPGP-27 36-40	A1120-05	BTEX (8021), PAH's (8270)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB071702
RPTB071802
RPTB071902
RPTB072202
RPTB072302
Rinsate Blank: RPGPXX072302-1

The analyses of the above listed samples were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria (DFTPP for semi-volatile organic analysis) were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC and SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S1 Compound	IC 7/17/02	CC 7/28/02	CC 7/29/02
Pyrene		XX (49.3%)	XX (48.1%)
Terphenyl-d14		XX (43.3%)	XX (46.8%)
Samples Affected	All listed		RPGP27-GW52-56 RPGP27-GW71-75 RPGPXX072302-1 RPGP-27 12-16 RPGP-27 36-40

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.

XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) nondetect results.

+= Response factor (RRF)<0.05; estimate (J) positive results and reject (R) nondetect results.

The positive results and nondetect results for the following samples were qualified as estimated (J/UJ) due to continuing calibration nonconformances; pyrene in samples RGP27-GW52-56, RGP27-GW71-75, RGPXX072302-1, RGP-27 12-16 and RGP-27 36-40.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits.

Internal Standards

The following table lists the Internal Standard recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard Sample ID	Recovery	Actions
Phenanthrene-d10 RGP2620-24	49%	Estimate positive and nondetect (J/UJ) values for the compounds associated with IS4: Phenanthrene, Anthracene, and Fluoranthene.

The positive results and nondetect results for sample RGP2620-24 were qualified as estimated (J/UJ) due to the low Internal Standard recovery for Phenanthrene-d10.

Laboratory Control Sample Results

Spike recoveries and replicate RPD's were within the QC limits.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory performed an MS/MSD on sample RGP25-GW71-75 for VOC analyses. Spike recoveries were within the advisory QC limits.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample Quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPGP27-GW8-12	VOC	40-fold
RPGP27-GW20-24	VOC	10-fold

Target Compound Identification

No erroneous compound identifications appear based upon the evaluation of retention times and the examination of sample preparation and injection logs, chromatograms, and forms I.

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1128-A1138
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: September 6, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPGP28A-GW8-12	A1128-01	BTEX (8021), PAH's (8270), CN (9012)
RPGP28A-GW24-28	A1128-02	BTEX (8021), PAH's (8270), CN (9012)
RPGP28A-GW36-40	A1128-03	BTEX (8021), PAH's (8270), CN (9012)
RPGP28A-GW52-56	A1132-01	BTEX (8021), PAH's (8270), CN (9012)
RPGP28A-GW71-75	A1132-02	BTEX (8021), PAH's (8270), CN (9012)
RPGP-28A 4-8	A1132-03	BTEX (8021), PAH's (8270)
RPGP-28A 20-24	A1132-04	VOC's (8260), SVOC's (8270)
RPGP-28A 40-44	A1132-05	BTEX (8021), PAH's (8270)
RPSB-09A 1-2	A1132-06	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-09A 5.5-6.5	A1132-07	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-09A 8-12	A1132-08	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-128A 9-10.5	A1138-01	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-128A 24-28	A1138-02	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)
RPSB-128A 21.5-22.5	A1138-03	BTEX (8021), PAH's (8270), CN (9012)
		BTEX/SPLP (8260), PAH's/SPLP (8270)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB072402
 RPTB072502
 RPTB072602

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable with the exception of Naphthalene and 2-Methylnaphthalene in the undiluted run of sample RPSB-128A 9-10.5.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times with the exception of those listed in the table below. All samples were received within temperature specifications of 2°C and 6°C with the exception of those listed in the table below. All sample containers were received intact with the following exceptions: All (3) containers for Rinsate Blank RGPXX072402-01 were received broken and unsalvageable. One VOA vial for sample RGP28A-GW24-28 was received broken; the other was analyzed for BTEX.

Compound(s)	Temp. (°C) Received 7/29/02	Date Analyzed 8/02/02	Date Analyzed 8/06/02
BTEX (8021)	28	X (7)	X (11)
Samples Affected	RPSB-128A 9-10.5 RPSB-128A 24-28 RPSB-128A 21.5-22.5 RPTB072602	RPSB-128A 24-28 RPSB-128A 21.5-22.5 RPTB072602	RPSB-128A 9-10.5

X= Number of days between the date collected and the date analyzed.

The positive VOC results and non-detects were qualified as estimated (J/UJ) for the following samples due to temperature and hold time non-conformances: RPSB-128A 9-10.5, RPSB-128A 24-28, RPSB-128A 21.5-22.5 and RPTB072602. Since the temperature of the samples grossly exceed the temperature specifications, the analytical hold time for VOC analysis has been reduced from 14 to 7 days. The PAH results for these samples are not qualified since they were extracted 3 days after collection.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC and SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S1 Compound	IC 7/29/02
Benzo(g,h,i)perylene	X (36.1)
Samples Affected	RPGP28A-GW8-12 RPGP28A-GW24-28 RPGP28A-GW36-40

- X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.
XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) nondetect results.
+= Response factor (RRF)<0.05; estimate (J) positive results and reject (R) nondetect results.

The positive results for the following samples were qualified as estimated (J) due to initial calibration nonconformances; Benzo(g,h,i)perylene in samples RPGP28A-GW8-12, RPGP28A-GW24-28, and RPGP28A-GW36-40.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits with the exception of those diluted out.

Internal Standards

The following table lists the Internal Standard (IS) recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard(s): Sample ID	Recovery	Actions
Perylene-d12: RPGP-28A 4-8	49 %	Estimate positive and nondetect (J/UJ) values: Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3)cd-pyrene, Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene

Perylene-d12: RPGP-28A 40-44	49 %	Estimate positive and nondetect (J/UJ) values: Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3)cd-pyrene, Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene
Naphthalene-d8: RPSB-128A 9-10.5 (undiluted run)	8.6%	Reject (R) values: Naphthalene, 2- Methylnaphthalene
Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12: RPSB-128A 9-10.5 (undiluted run)	35% 30% 26% 18%	Estimate (J) all results that have not been previously qualified as unusable (R) or Estimated (E) for exceeding the calibration curve.

Selected positive and nondetect results for samples RPGP-28A 4-8 and RPGP-28A 40-44 are qualified as estimated (J/UJ) due to low IS recovery for Perylene-d12. All results are qualified as either unusable (R), estimated (J) due to low IS recoveries or estimated (E) due to exceeding the calibration curve for the undiluted run of RPSB-128A 9-10.5.

Laboratory Control Sample Results

The following table lists the VOC LCS recoveries found outside of the QC limits for V4SLCS 500 ppb and the resultant actions. Associated samples include RPSB-09A 1-2, RPSB-09A 5.5-6.5, RPSB-09A 8-12, and RPSB-128A 9-10.5.

Compound	Recovery	Actions
Toluene	84	LCSD and RPD in control; No Action

The following table lists the SVOC LCS recoveries found outside of the QC limits for S1DLCS 50 ppb and the resultant actions. Associated samples include RPGP28A-GW8-12, RPGP28A-GW24-28, and RPGP28A-GW36-40.

Compound	Recovery	Actions
Indeno(1,2,3-cd)pyrene	120	Estimate (J) positive values for samples; possible high bias
Benzo(g,h,i)perylene	126	Estimate (J) positive values for samples; possible high bias

Matrix Spike/Matrix Spike Duplicate Results

The laboratory did not perform an MS/MSD on any of the organic fractions of the samples validated in this report.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPSB-09A 1-2	VOC	1000-fold
RPSB-09A 5.5-6.5	VOC	50-fold
RPSB-09A 8-12	VOC	50-fold
RPSB-128A 21.5-22.5	VOC	2-fold
RPSB-128A 9-10.5	VOC	5000-fold
RPSB-128A 9-10.5	SPLP VOC	40-fold
RPSB-09A 1-2	PAH	1000-fold
RPSB-09A 5.5-6.5	PAH	50-fold
RPSB-09A 8-12	PAH	30-fold
RPSB-128A 9-10.5	PAH	100-fold

Target Compound Identification

No erroneous compound identifications appear based upon the evaluation of retention times and the examination of sample preparation and injection logs, chromatograms, and forms I.

The inorganic (cyanide) data were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable.

Holding Times and Sample Preservation

The following table lists sample results requiring qualification based on preservation issues for cyanide and the resultant actions.

Sample	Date Collected	Date Distilled	Action
RPGP28A-GW8-12	7/24/02	7/29/02	Estimate (J) positive and (UJ) nondetect results.
RPGP28A-GW24-28	7/24/02	7/29/02	Estimate (J) positive and (UJ) nondetect results.
RPGP28A-GW36-40	7/24/02	7/29/02	Estimate (J) positive and (UJ) nondetect results.
RPGP28A-GW52-56	7/25/02	7/29/02	Estimate (J) positive and (UJ) nondetect results.
RPGP28A-GW71-75	7/25/02	7/29/02	Estimate (J) positive and (UJ) nondetect results.
RPSB-128A- 9-10.5	7/26/02	7/31/02	Estimate (J) positive and (UJ) nondetect results.
RPSB-128A- 21.5-22.5	7/26/02	7/31/02	Estimate (J) positive and (UJ) nondetect results.
RPSB-128A- 24-28	7/26/02	7/31/02	Estimate (J) positive and (UJ) nondetect results.

Water samples RPGP28A-GW8-12, RPGP28A-GW24-28, RPGP28A-GW36-40, RPGP28A-GW52-56 and RPGP28A-GW71-75 were preserved to pH > 12 immediately prior to distillation at the laboratory as opposed to preservation in the field at time of collection. All samples were analyzed within analytical hold times. Soil samples RPSB-128A- 9-10.5, RPSB-128A- 21.5-22.5, and RPSB-128A- 24-28 were received at 28°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

There was no blank contamination associated with the samples included in this report.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Recoveries

Sample spike recoveries were within the QC limits.

Laboratory Duplicate Results

Laboratory duplicates were within QC limits

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1361-A1369
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: October 18, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
PZ-06	A1361-01	BTEX (8021), PAH's (8270), CN (9012)
RPMW-05I	A1361-02	BTEX (8021), PAH's (8270), CN (9012)
RPMW-05S	A1361-03	BTEX (8021), PAH's (8270), CN (9012)
RPMW-08S	A1361-04	BTEX (8021), PAH's (8270), CN (9012)
RPMW-08I	A1361-05	BTEX (8021), PAH's (8270), CN (9012)
RPMW-08D	A1369-01	BTEX (8021), PAH's (8270), CN (9012)
RPMW-08D2	A1369-02	BTEX (8021), PAH's (8270), CN (9012)
RPMW-013S	A1369-03	BTEX (8021), PAH's (8270), CN (9012)
RPMW-13I	A1369-04	BTEX (8021), PAH's (8270), CN (9012)
RPMW-13D	A1369-05	BTEX (8021), PAH's (8270), CN (9012)
RPMW-13D2	A1369-06	BTEX (8021), PAH's (8270), CN (9012)
RPMW-014S	A1369-07	BTEX (8021), PAH's (8270), CN (9012)
RPMW-14I	A1369-08	BTEX (8021), PAH's (8270), CN (9012)
RPMW-14D	A1369-09	BTEX (8021), PAH's (8270), CN (9012)
RPMWXX091802-1	A1369-10	BTEX (8021), PAH's (8270), CN (9012)
MW-01	A1369-11	BTEX (8021), PAH's (8270), CN (9012)
MW-02	A1369-12	BTEX (8021), PAH's (8270), CN (9012)
MW-03	A1369-13	BTEX (8021), PAH's (8270), CN (9012)
RPMW-18I	A1369-14	BTEX (8021), PAH's (8270), CN (9012)
RPMW-14D2	A1369-15	BTEX (8021), PAH's (8270), CN (9012)

ASSOCIATED QC SAMPLE(S): Trip Blank (9/17/02)
 Trip Blank (9/18/02)

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

All initial and continuing instrument calibrations are satisfactory and in compliance with the guidelines for organic data review.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

The following table lists the Surrogate recoveries found outside the QC limits and the resultant actions. All other surrogates were within the QC limits with the exception of those diluted out.

Surrogate: Sample ID	Recovery	Actions
Bromofluorobenzene: RPMW-05I	357 %	Estimate all positive (J) values: BTEX
Bromofluorobenzene: MW-01	168 %	Estimate all positive (J) values: BTEX

Surrogate: Sample ID	Recovery	Actions
Nitrobenzene-d5: RPMW-13D2	107 %	No Action

Sample RPMW-05I was analyzed undiluted initially and the surrogate BFB yielded a high recovery of 357%. The sample was re-analyzed at a 1:2 dilution and the surrogate was within the QC limits. Sample MW-01 was analyzed at a 1:2 dilution initially and the surrogate BFB yielded a high recovery of 168%. The sample was re-analyzed at a 1:50 dilution and the surrogate was within the QC limits. The surrogate Nitrobenzene-d5 exceeded the upper control limit by only 1% in sample RPMW-13D2 and the other (3) surrogates were within the QC limits. The PAH results for this sample have not been qualified.

Internal Standards

The following table lists the Internal Standard (IS) recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard(s): Sample ID	Recovery	Actions
1,4-Dichlorobenzene-d4: Acenaphthene-d8: Phenanthrene-d10 Chrysene-d12: RPMW-13D2	222 % 214 % 215 % 209 %	Estimate positive (J) values: Acenaphthene, Fluorene, Phenanthrene, Anthracene
Chrysene-d12: RPMWXX091802-1	201%	No positive values to qualify; No Action

Selected positive results for sample RPMW-13D2 are qualified as estimated (J) due to excessive Internal Standard recoveries.

Laboratory Control Sample Results

Spike recoveries and replicate RPD's were within the QC limits.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory did not perform an MS/MSD on any of the organic fractions of the samples validated in this report.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPMW-05I	BTEX	2-fold
RPMW-05S	Benzene, Ethylbenzene	40-fold
MW-01	Xylenes	2-fold
MW-01	Benzene, Ethylbenzene, Xylenes	40-fold
MW-02	Toluene, Ethylbenzene, Xylenes	10-fold
MW-02	Benzene	40-fold
MW-03	BTEX	500-fold
RPMW-13D2	Xylenes	4-fold
RPMW-13S	Ethylbenzene, Xylenes	20-fold
RPMW-14S	BTEX	10-fold
RPMW-18I	BTEX	20-fold
PZ-06	PAH	20-fold
RPMW-05I	PAH	100-fold
RPMW-05S	PAH	15-fold
MW-01	PAH	10-fold
MW-02	PAH	5-fold
MW-03	PAH	40-fold
RPMW-13D	PAH	4-fold
RPMW-13D	PAH	50-fold
RPMW-13I	PAH	2-fold
RPMW-13S	PAH	30-fold
RPMW-18I	PAH	20-fold

Target Compound Identification

No erroneous compound identifications appear based upon retention time evaluations and the examination of sample preparation and injection logs, chromatograms, and forms I.

The inorganic (cyanide) data were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

There was no blank contamination associated with the samples included in this report.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Results

Sample spike recoveries were within the QC limits.

Laboratory Duplicate Results

Laboratory duplicates were within QC limits.

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1379-A1383
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: October 30, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPMW-12S	A1379-01	BTEX (8021), PAH's (8270), CN (9012)
RPMW-12I	A1379-02	BTEX (8021), PAH's (8270), CN (9012)
RPMW-12D	A1379-03	BTEX (8021), PAH's (8270), CN (9012) Metals (E200.7), Nitrate (E353.2) Ferric/Ferrous Iron, Alkalinity, SO4 (SM)
RPMW-12D2	A1379-04	BTEX (8021), PAH's (8270), CN (9012) Metals (E200.7), Nitrate (E353.2) Ferric/Ferrous Iron, Alkalinity, SO4 (SM)
RPMW-11I	A1379-05	BTEX (8021), PAH's (8270), CN (9012)
RPMW-11D	A1379-06	BTEX (8021), PAH's (8270), CN (9012)
MW-A	A1379-07	BTEX (8021), PAH's (8270), CN (9012) Metals (E200.7), Nitrate (E353.2) Ferric/Ferrous Iron, Alkalinity, SO4 (SM)
RPMW-18D	A1379-08	BTEX (8021), PAH's (8270), CN (9012)
PZ-2	A1379-09	BTEX (8021), PAH's (8270), CN (9012)
RPMW-06I	A1379-10	BTEX (8021), PAH's (8270), CN (9012) Metals (E200.7), Nitrate (E353.2) Ferric/Ferrous Iron, Alkalinity, SO4 (SM)
RPMW-17S	A1379-11	BTEX (8021), PAH's (8270), CN (9012)
RPMW-17D (MS/MSD)	A1379-12	BTEX (8021), PAH's (8270), CN (9012)
RPMW-02D2	A1379-13	BTEX (8021), PAH's (8270)
RPMW-17I	A1379-14	BTEX (8021), PAH's (8270), CN (9012)
PZ-04	A1383-01	BTEX (8021), PAH's (8270), CN (9012)
RPMW-04S	A1383-02	BTEX (8021), PAH's (8270), CN (9012)
RPMW-04I	A1383-03	BTEX (8021), PAH's (8270), CN (9012)
RPMW-01I	A1383-04	CN (9012)
RPMW-01S	A1383-05	BTEX (8021), PAH's (8270), CN (9012)
PZ-05	A1383-06	BTEX (8021), PAH's (8270), CN (9012)
RPMW-15I (MS/MSD)	A1383-07	BTEX (8021), PAH's (8270), CN (9012) Metals (E200.7), Nitrate (E353.2) Ferric/Ferrous Iron, Alkalinity, SO4 (SM)
RPMW-03S	A1383-08	PAH's (8270), CN (9012)
RPMWXX092002	A1383-09	BTEX (8021), PAH's (8270), CN (9012)

ASSOCIATED QC SAMPLE(S): Field Blank: RPFB091902
RPFB092002
Trip Blank: (9/20/02)

The analyses were performed according to NYSDEC ASP protocols (October 19954 update) and reported per NYSDEC ASP requirement for Category B deliverable with the exception of nitrate, sulfate, alkalinity, ferric iron and ferrous iron. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

VOC vials for samples RPMW-01I, RPMW-03S and RPFB092002 are listed on the chain of custody record, but the samples were not shipped to the laboratory. There are no VOC results for these samples. The PAH extract for sample RPMW-01I was accidentally spilled after concentration. There was not enough extra sample to re-extract and there are no PAH results for this sample.

All other results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

All initial and continuing instrument calibrations are satisfactory and in compliance with the guidelines for organic data review.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits with the exception of those diluted out.

Internal Standards

All Internal Standard (IS) recoveries were found inside the control limits of -50 percent to +100 percent of the associated calibration standard.

Laboratory Control Sample Results

Spike recoveries and replicate RPD's were within the QC limits.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory performed an MS/MSD on samples RPMW-17D and RPMW-15I for VOC and SVOC analyses. Spike recoveries were within the advisory QC limits with the exception of those listed in the following table.

Sample ID	Compound	MS	MSD	RPD
RPMW-15I	Toluene	100	50 *	67 *

* = Outside advisory QC limits.

Toluene was out low in the MSD for sample RPMW-15I and the RPD was outside the advisory QC limits. Since the concentration of toluene in the sample was about twice the amount spiked no action has been taken.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
MW-A	Toluene, Ethylbenzene, Xylenes	20-fold
MW-A	Benzene	100-fold
PZ-02	BTEX	200-fold
RPMW-06I	BTEX	25-fold
RPMW-11I	Ethylbenzene, Xylenes	25-fold
RPMW-12S	BTEX	5-fold
RPMW-17S	BTEX	100-fold
PZ-04	BTEX	50-fold
PZ-05	BTEX	4-fold
RPMW-04I	BTEX	20-fold
MW-A	PAH	20-fold
PZ-02	PAH	50-fold
RPMW-06I	PAH	30-fold
RPMW-11I	PAH	8-fold
RPMW-12S	PAH	15-fold
RPMW-17S	PAH	3-fold
PZ-04	PAH	6-fold
PZ-05	PAH	5-fold
RPMW-04I	PAH	6-fold
RPMWXX092002	PAH	4-fold

Target Compound Identification

No erroneous compound identifications appear based upon retention time evaluations and the examination of sample preparation and injection logs, chromatograms, and forms I.

The inorganic data, which include cyanide, metals, nitrate, sulfate and alkalinity were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results
- ICP Interference Check Samples
- ICP Serial Dilutions

The container for cyanide analysis of sample RPMW-02D2 (A1379-13D) was documented as being damaged upon receipt by the laboratory. The sample was unsalvageable and there is no result for cyanide.

All other results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

The following table lists sample results requiring qualification due to improper chemical preservation for cyanide and the resultant actions.

Sample	Date Collected	Date Distilled	Action
RPMW-12D	9/19/02	9/23/02	Estimate (J) positive and (UJ) nondetect results.
RPMW-12D2	9/19/02	9/23/02	Estimate (J) positive and (UJ) nondetect results.

Water samples RPMW-12D and RPMW-12D2 had a pH of 6 and 7 respectively immediately prior to distillation.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

The preparation blanks for cyanide (MB-3480 and MB-3481) distilled 9/23/02 and analyzed 9/24/02 had positive values detected at 14.1 ug/L and 7.0 ug/L respectively. These values exceed the IDL, but are below the CRDL. No action has been taken, as the blank results are not considered significant enough to have an affect on the reported data.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Results

All sample spike recoveries were within the QC limits with the exception of those listed in the following table.

Sample ID	Compound	MS % Recovery
RPMW-15I	Nitrate	60.6

Nitrate was not detected in sample RPMW-15I. The reporting limit for this sample has been qualified as estimated (UJ).

Laboratory Duplicate Results

Laboratory duplicates were within QC limits.

ICP Interference Check Samples

All ICS recoveries were found inside the control limits of +/- 20 percent.

ICP Serial Dilutions

All ICP serial dilutions were in control except for those listed in the following table.

Samples Affected	Compound	Initial Result	Serial Dilution Result	% Difference
RPMW-15I	Manganese	136.03	168.52	23.9

The results for total and dissolved Manganese in sample RPMW-15I have been qualified as estimated (J).

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1390-A1398
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: November 11, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
PZ-03	A1390-01	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO ₄ , Ferric/Ferrous Iron, Alkalinity, TDS (SM),
RPMW-09D	A1390-02	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO ₄ , Ferric/Ferrous Iron, Alkalinity, TDS, T. Phos., Iodide (SM), Bromide, Chloride (E300.0)
RPMW-09I	A1390-03	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO ₄ , Ferric/Ferrous Iron, Alkalinity, TDS, T. Phos., Iodide (SM), Bromide, Chloride (E300.0)
RPMW-09D2	A1390-04	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO ₄ , Ferric/Ferrous Iron, Alkalinity, TDS, T. Phos., Iodide (SM), Bromide, Chloride (E300.0)
RPMW-03D	A1390-05	BTEX (8021), PAH's (8270), CN (9012)
RPMW-03I	A1390-06	BTEX (8021), PAH's (8270), CN (9012)
RPMW-15D	A1390-07	BTEX (8021), PAH's (8270), CN (9012)
RPMW-02D2	A1390-08	CN (9012)
RPMW-02I	A1390-09	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO ₄ , Ferric/Ferrous Iron, Alkalinity, TDS (SM)
RPMW-02S	A1398-01	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO ₄ , Ferric/Ferrous Iron, Alkalinity (SM)
RPMW-02D	A1398-02	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO ₄ , Ferric/Ferrous Iron, Alkalinity (SM)
RPMW-10S (MS/MSD)	A1398-03	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO ₄ , Ferric/Ferrous Iron, Alkalinity (SM)

Rockaway Park RI, Project# 982482

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPMW-10I	A1398-04	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO4, Ferric/Ferrous Iron, Alkalinity (SM)
RPMW-03S	A1398-05	BTEX (8021)
RPMW-01I	A1398-06	BTEX (8021)
RPMW-07S	A1398-07	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO4, Ferric/Ferrous Iron, Alkalinity (SM)
RPMW-07I	A1398-08	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO4, Ferric/Ferrous Iron, Alkalinity (SM)
RPMW-07D	A1398-09	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO4, Ferric/Ferrous Iron, Alkalinity (SM)
RPMW-07D2	A1398-10	BTEX (8021), PAH's (8270), CN (9012),
RPMWXX092402-1	A1398-11	BTEX (8021), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO4, Ferric/Ferrous Iron, Alkalinity (SM)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB092302
RPTB092402
Field Blank: RPF092402

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable with the exception of nitrate, sulfate, alkalinity, ferric iron, ferrous iron, bromide, chloride, iodide and total phosphorous. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994. Bromide, chloride, iodide and total phosphorous were subcontracted to Severn Trent Laboratories, Westfield, MA and analyzed according to EPA and MA EDP methodologies and protocols.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

All initial and continuing instrument calibrations are satisfactory and in compliance with the guidelines for organic data review.

Blanks

Naphthalene was detected at 2 ug/L in SBLK1S extracted 9/24/02. The original forms I for the samples associated with this blank been qualified (B). No additional action is required.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits with the exception of those diluted out and those listed in the following table.

Sample ID	Nitrobenzene-d5	Terphenyl-d14	1,2-DCBenzene-d4
RPMW-03D	45 %		
PZ-03	48 %	23 %	
PZ-03 (1:5)		26 %	
RPMW-07I	125 %		

Sample ID	Nitrobenzene-d5	Terphenyl-d14	1,2-DCBenzene-d4
RPMWXX092402-1	137 %		
RPMW-10S			24 %

The surrogate Nitrobenzene-d5 was out low in samples RPMW-03D, the undiluted run of PZ-03, and out high in the undiluted run of RPMW-07I and the undiluted run of RPMWXX092402-1. The surrogate Terphenyl-d14 was out low in the undiluted run of sample PZ-03 and the 1:5 run of sample PZ-03. The surrogate 1,2-Dichlorobenzene-d4 was out low in the undiluted run of sample RPMW-10S. Since only one surrogate is out in sample RPMW-03D, the 1:5 run of sample PZ-03, the undiluted run of RPMW-07I, the undiluted run of sample RPMW-10S and the undiluted run of RPMWXX092402-1 this data has not been qualified. The positive results and non-detects in the undiluted run of sample PZ-03 have been qualified as estimated.

Internal Standards

The following table lists the Internal Standard (IS) recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard(s): Sample ID	Recovery	Actions
Naphthalene-d8: RPMWXX092402-1	46 %	No Action

The compounds associated with the Internal Standard Naphthalene-d8 (Naphthalene and 2-Methylnaphthalene) are qualified as estimated (E) in the original run for exceeding the calibration curve. The sample was re-run at a dilution in which the compounds of interest are reported and all Internal Standards were in control. No additional action has been taken.

Laboratory Control Sample Results

Spike recoveries and replicate RPD's were within the QC limits.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory performed an MS/MSD on sample RPMW-10S for VOC and SVOC analyses. Spike recoveries were within the advisory QC limits with the exception of those listed in the following table.

Sample ID	Compound	MS	MSD	RPD
RPMW-10S	Benzene	70000 *	40000 *	54 *
RPMW-10S	Toluene	80000 *	50000 *	46 *
RPMW-10S	Ethylbenzene	83000 *	73000 *	13
RPMW-10S	Xylene	98000 *	91000 *	7

Sample ID	Compound	MS	MSD	RPD
RPMW-10S	Naphthalene	-60 *	-20 *	100 *
RPMW-10S	Benzo(g,h,i)perylene	56 *	70	22

* = Outside advisory QC limits.

All BTEX parameters and Naphthalene were outside the advisory QC limits. The data is not subject to qualification due to the high concentration of targets in the sample. The MS for Benzo(g,h,i)perylene was out slightly low while the MSD and RPD were in control. No action has been taken.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
PZ-03	Benzene, Ethylbenzene	20-fold
PZ-03	Toluene, Xylenes	250-fold
RPMW-02I	BTEX	50-fold
RPMW-09D	Toluene, Ethylbenzene, Xylenes	20-fold
RPMW-09D	Benzene	200-fold
RPMW-09D2	Toluene, Ethylbenzene, Xylenes	50-fold
RPMW-09D2	Benzene	250-fold
RPMW-09I	BTEX	50-fold
RPMW-02S	BTEX	10-fold
RPMW-07D	BTEX	2-fold
RPMW-07I	BTEX	20-fold
RPMW-07S	BTEX	50-fold
RPMW-10S	BTEX	1000-fold
RPMWXX092402-1	BTEX	25-fold
PZ-03	Naphthalene	5-fold
RPMW-02I	PAH	100-fold
RPMW-09D	PAH	50-fold
RPMW-09D2	PAH	75-fold
RPMW-09I	PAH	75-fold
RPMW-02S	Naphthalene, Acenaphthene	8-fold

Sample	Analyses	Dilution Reported
RPMW-07D	PAH	6-fold
RPMW-07I	Naphthalene, 2-Methylnaphthalene, Acenaphthene	75-fold
RPMW-07S	PAH	50-fold
PPMW-10S	Naphthalene	20-fold
RPMWXX092402-1	Naphthalene, 2-Methylnaphthalene, Acenaphthene	75-fold

Target Compound Identification

No erroneous compound identifications appear based upon retention time evaluations and the examination of sample preparation and injection logs, chromatograms, and forms I.

The inorganic data, which include cyanide, metals, nitrate, sulfate, alkalinity, bromide, chloride, iodide and total phosphorous were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results
- ICP Interference Check Samples
- ICP Serial Dilutions

The container for cyanide analysis of sample RPMW-02D2 (A1379-13D) was documented as being damaged upon receipt by the laboratory. The sample was unsalvageable and there is no result for cyanide.

All other results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Initial and Continuing Calibrations

Compounds that did not meet Initial calibration verification or continuing calibration verification criteria for inorganic parameters are summarized in the following table.

Analyte	ICV	CCV
Iodide	84%	
Samples Affected	RPMW-09D	
	RPMW-09I	
	RPMW-09D2	
Bromide		116%
Samples Affected		RPMW-09D
		RPMW-09D2

The positive results and non-detects for Iodide in samples RPMW-09D, RPMW-09I and RPMW-09D2 have been qualified as estimated (J/UJ) due to the low initial calibration verification recovery. The positive results for Bromide in samples RPMW-09D and RPMW-09D2 have been qualified as estimated (J) due to the high continuing calibration verification recovery.

Blanks

There was no blank contamination associated with the samples included in this report.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Results

All sample spike recoveries were within the QC limits with the exception of those listed in the following table.

Sample ID	Compound	MS % Recovery
RPMW-09D	Cyanide	63
RPMW-10S	Ferrous Iron	47

Due to the low sample spike recoveries the following action has been taken: All cyanide results and non-detects in SDG A1390 have been qualified as estimated (J/UJ). All ferrous iron results and non-detects in SDG A1398 have been qualified as estimated (J/UJ).

Laboratory Duplicate Results

Laboratory duplicates were within QC limits.

ICP Interference Check Samples

All ICS recoveries were found inside the control limits of +/- 20 percent.

Rockaway Park RI, Project# 982482

ICP Serial Dilutions

All ICP serial dilutions were within QC limits.

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1409
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: November 13, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPTS092502	A1409-01	VOC's (8260), SVOC's (8270), CN (9012)
RPSS-19 0-2	A1409-02	PCB's (8082)
RPSS-18 0-2	A1409-03	PCB's (8082)
RPSS-17 0-2	A1409-04	PCB's (8082)
RPSSXX092502	A1409-05	PCB's (8082)
RPMW-01I	A1409-06	PAH's (8270)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB092502

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC and SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S1 Compound	IC 8/13/02	CC 8/26/02
2,4-Dinitrophenol	X (33.7)	XX (30.2%)
Samples Affected	RPTS092502	RPTS092502

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.
XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) nondetect results.
+= Response factor (RRF)<0.05; estimate (J) positive results and reject (R) nondetect results.

The quantitation limit for total 2,4-Dinitrophenol in sample RPTS092502 has been qualified as estimated (UJ).

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits with the exception of those diluted out.

Internal Standards

The following table lists the Internal Standard (IS) recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard(s): Sample ID	Recovery	Actions
Chrysene-d12:	206 %	No Action
Perylene-d12:	211 %	No Action
S2TLCSD		

The Internal Standards Chrysene-d12 and Perylene-d12 were outside of the QC limits in the LCSD. These recoveries have no significant effect on the sample results; therefore, no additional action has been taken.

Laboratory Control Sample Results

All Laboratory control spike recoveries were inside the QC limits with the exception of those listed in the following table.

Compound	LCS	LCSD	RPD
2-Nitroaniline	55 *	61 *	10
2,6-Dinitrotoluene	59 *	65	10
2,4-Dinitrophenol	12 *	13 *	8
4,6-Dinitro-2-methylphenol	31 *	34	9
4-Bromophenyl-phenylether	61 *	65 *	6
Hexachlorobenzene	64 *	65 *	2
Di-n-butylphthalate	60 *	66 *	10
Butylbenzylphthalate	51 *	65 *	24
Bis(2-Ethylhexyl)phthalate	48 *	61 *	24
Di-n-octylphthalate	43 *	57 *	28
3,3'-Dichlorobenzene	35	53	41 *

* = Outside QC limits.

No positive results were detected for the compounds with at least one laboratory spike recovery below the lower control limit or an RPD outside the QC limits. The quantitation limits for all compounds with at least one laboratory spike recovery below the lower control limit have been qualified as estimated (UJ).

Matrix Spike/Matrix Spike Duplicate Results

The laboratory did not perform an MS/MSD on any of the organic fractions of the samples validated in this report.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPTS092502	VOC	100-fold
RPTS092502	SVOC's	50-fold

Target Compound Identification

No erroneous compound identifications appear based upon the evaluation of retention times and the examination of sample preparation and injection logs, chromatograms, and forms I.

The inorganic (cyanide) data were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

There was no blank contamination associated with the samples included in this report.

Laboratory Control Sample Results

All laboratory spike recoveries were within the QC limits with the exception of those listed in the following table.

LCS ID	Compound	LCS % Recovery
LCS-3589	Cyanide	68

Rockaway Park RI, Project# 982482

Due to the low LCS recovery, the quantitation limit for sample RPTS092502 has been qualified as estimated (UJ).

Matrix Spike Recoveries

Sample spike recoveries were within the QC limits.

Laboratory Duplicate Results

Laboratory duplicates were within QC limits

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1566-A1620
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: December 19, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPMW-16I 9-11	A1566-01	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-16I 39-41	A1566-02	BTEX (8021), PAH's (8270), CN (9012) BTEX/SPLP (8260), PAH's/SPLP (8270)
RPMW-16S	A1620-01	VOC's (8260), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO4, Ferric/Ferrous Iron, Alkalinity, TDS, T. Phos., Iodide (SM), Bromide, Chloride (E300.0)
RPMW-16I	A1620-02	VOC's (8260), PAH's (8270), CN (9012), Metals (E200.7), Nitrate (E353.2), SO4, Ferric/Ferrous Iron, Alkalinity, TDS, T. Phos., Iodide (SM), Bromide, Chloride (E300.0)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB102402
RPTB110702

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable with the exception of nitrate, sulfate, alkalinity, ferric iron, ferrous iron, bromide, chloride, iodide and total phosphate. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994. Bromide, chloride and iodide were subcontracted to Severn Trent Laboratories, Westfield, MA and analyzed according to EPA and MA EDP methodologies and protocols.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification
- Tentatively Identified Compounds

All results were found to be usable with the exception of acetone and 2-butanone in samples RPMW-16S and RPMW-16I.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times with the exception of those listed in the table below. All samples were received within temperature specifications of 2°C and 6°C.

SPLP PAH's Sample ID	Time elapsed			
	SPLP extraction	Preparation extraction	Analysis	Total
RPMW-16I 9-11	4 days	10 days	1 day	15 days
RPMW-16I 39-41	4 days	10 days	1 day	15 days

The ten days elapsed between the SPLP extraction and method preparation extraction for PAH's exceeded the recommended hold time of seven days. Since the total time of 15 days elapsed between sample collection and analysis is well below the total time of 61 allowed, the data has not been flagged with qualifiers.

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC and SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S1	IC	IC	CC
Compound	10/17/02	10/17/02	11/20/02
Acetone	+ (0.047)	X (57.8)	+ (0.038)
2-Butanone			+ (0.049)
Dichlorodifluoromethane			XX (26.6%)
Samples Affected	RPMW-16S	RPMW-16S	
	RPMW-16I	RPMW-16I	

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.
 XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) non-detect results.
 += Response factor (RRF)<0.05; estimate (J) positive results and reject (R) non-detect results.

No positive acetone, 2-butanone, or dichlorodifluoromethane results were detected in the affected samples. Since the mean response factor for acetone in the initial calibration was less than 0.05 and the %RSD was greater than 30, the non-detects have been qualified as unusable (R). Because the response factor was less than 0.05 in the continuing calibration, the non-detects for 2-butanone have also been qualified as unusable (R). The non-detects for dichlorodifluoromethane have been qualified as estimated (UJ) due to excessive drift from the initial calibration.

Blanks

There was no blank contamination associated with the samples included in this report.

Surrogate Recoveries

All surrogate recoveries were inside the QC limits.

Internal Standards

The following table lists the Internal Standard recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard Sample ID	Recovery	Actions
Perylene-d12 RPMW-16I 9-11	43%	Estimate positive and non-detect (J/UJ) values: Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3)cd-pyrene, Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene

Selected positive results and non-detect results for sample RPMW-16I 9-11 have been qualified as estimated (J/UJ) due to the low Internal Standard recovery for Perylene-d12.

Laboratory Control Sample Results

All laboratory control spike recoveries were inside the QC limits with the exception of those listed in the following table.

Compound	LCS	LCSD	RPD
Vinyl Chloride	100	120 *	18

* = Outside QC limits.

No positive vinyl chloride results were detected in the samples. Since the recovery was out high, no action has been taken.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory did not perform an MS/MSD on any of the organic fractions of the samples validated in this report.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

Target Compound Identification

No erroneous compound identifications appear based upon retention time evaluations and the examination of sample preparation and injection logs, chromatograms, and forms I.

Tentatively Identified Compounds

The raw data has been checked to verify proper TIC identification. All TIC results are considered estimated.

The inorganic data were evaluated based on the following QC parameters:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

There was no blank contamination associated with the samples included in this report.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Results

The laboratory did not perform a cyanide matrix spike on any of the samples validated in this report.

Laboratory Duplicate Results

The laboratory did not perform a duplicate analysis on any of the samples validated in this report.

Appendix F

Chain-of-Custody Forms and Data Validation Reports - Sediments

Sediment Chain-of-Custody Form

CHAIN-OF-CUSTODY RECORD

Page 1 of 3

REPORT TO							INVOICE TO							LAB PROJECT #:		
COMPANY <u>CEI Consultants Inc</u>				PHONE <u>860-537-0751</u>			COMPANY <u>Same as Report to</u>				PHONE			<u>A1489</u>		
NAME <u>Dene Terry</u>				FAX <u>860-537-6347</u>			NAME				FAX					
ADDRESS <u>PO Box 297</u>							ADDRESS							TURNAROUND TIME:		
CITY/ST/ZIP <u>Colchester CT 06415</u>							CITY/ST/ZIP									
CLIENT PROJECT NAME:			CLIENT PROJECT #:			CLIENT P.O.#:			REQUESTED ANALYSES BTEX (8260) + SVOCs (8270) + Total CN (CLP method) + pH by CLP method + Hardness (SM240B) + Grain size analysis +							
<u>Keegan/Rockaway Park</u>			<u>982482-9-1813</u>													
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS								COMMENTS
~~RPSED02-9~~																
RPSED02-9 (0-0.3)	10/1/02 / 1200				✓		01	3	X	X	X	X	X	X	X	For all Total CN analysis: potentially high sulfide in sediment samples
RPSED02-9 (0.3-3)	10/1/02 / 1210				✓		02	3	X	X	X	X	X	X	X	
RPSED02-9 (0-0.3)	10/1/02 / 1130				✓		03	3	X	X	X	X	X	X	X	
RPSED02-9 (0.3-1.5)	10/1/02 / 1135				✓		04	3	X	X	X	X	X	X	X	
RPSED02-9 (1.5-2.4)	10/1/02 / 1140				✓		05	2	X	X	X	X				
RPSED02-9 (2.4-4.4)	10/1/02 / 1145				✓		06	2	X	X						
RPSED02-3 (0-0.3)	10/1/02 / 1100				✓		07	3	X	X	X	X	X	X	X	
RPSED02-3 (0.3-3)	10/1/02 / 1110				✓		08	3	X	X	X	X	X	X	X	
RPSED02-2 (0-0.3)	10/1/02 / 1025				✓		09	3	X	X	X	X	X	X	X	
RPSED02-2 (0.3-3)	10/1/02 / 1035				✓		10	3	X	X	X	X	X	X	X	
RPER100902	10/1/02 / 0930			✓			11	6	X	X	X	X	X	X		
RPSED02-8 (0-0.3)	10/1/02 / 1450				✓		12	3	X	X	X	X	X	X	X	
TSF#	RELINQUISHED BY		DATE/TIME		ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:							COOLER TEMP:
	<u>fr</u>		10/10/02 1200		<u>Red Ex</u>		10-11-02 0900		Foodie and data package to Kevin Harris 243 North Lindbergh Blvd. Suite 312 St Louis, MO 63141 email: kharris@ceiconsultants.com							32
27																

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 2 of 3

REPORT TO							INVOICE TO							LAB PROJECT #:			
COMPANY	GEI Consultants			PHONE	860-537-0751			COMPANY	same as Report to			PHONE				A1489	
NAME	David Terry			FAX	860-537-6347			NAME				FAX					
ADDRESS	PO Box 297						ADDRESS							TURNAROUND TIME:			
CITY/ST/ZIP	Colchester, CT						CITY/ST/ZIP										
CLIENT PROJECT NAME:			CLIENT PROJECT #:			CLIENT P.O.#:			REQUESTED ANALYSES								
Respon/Rockaway			982432-9-1813						BTEX (8260) SVOCs (8270) Total CN (CUP method) PH by CUP method Herbicide (SM2340.0) Grain size analysis								
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS									COMMENTS
RPSEDO2-8(0.3-3.0)	10/10/02 / 1500				✓		13	3	X	X	X	X	X	X	X		
RPSEDO2-8(0.3-3.0)ms/mso	10/10/02 / 1500				✓		14	6	X	X	X	X	X	X	X		ms/mso only
RPSEDO2-7(0.0-0.3)	10/9/02 / 1515				✓		15	3	X	X	X	X	X	X	X		
RPSEDO2-7(0.3-3.0)	10/9/02 / 1520				✓		16	3	X	X	X	X	X	X	X		
RPSEDO2-5(0.0-0.3)	10/9/02 / 1540				✓		17	3	X	X	X	X	X	X	X		
RPSEDO2-5(0.3-3.0)	10/9/02 / 1545				✓		18	3	X	X	X	X	X	X	X		
RPSEDO2-4(0.0-0.3)	10/9/02 / 1605				✓		19	2	X	X	X	X	X	X	X		
RPSEDO2-4(0.3-3.0)	10/9/02 / 1610				✓		20	3	X	X	X	X	X	X	X		
RPSEDO2-1(0.0-0.3)	10/9/02 / 1630				✓		21	3	X	X	X	X	X	X	X		
RPSEDO2-1(0.3-3.0)	10/9/02 / 1635				✓		22	3	X	X	X	X	X	X	X		
RPSEDO2-1(0.3-3.0)	10/9/02 / 1535				✓		23	3	X	X	X	X	X	X	X		Duplicate RPSEDO2-1(0.3-3.0)
RPSEDO2-H	10/10/02 / 1705				✓		23	3	X	X	X	X	X	X	X		
TSF#	RELINQUISHED BY		DATE/TIME		ACCEPTED BY		DATE/TIME		ADDITIONAL REMARKS:								COOLER TEMP:
	JTC		10/10/02 / 1200		Fed Ex		10-11-02 0900										36

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

CHAIN-OF-CUSTODY RECORD

Page 3 of 3

REPORT TO							INVOICE TO							LAB PROJECT #:				
COMPANY <u>GEI Consultants</u>				PHONE <u>860-337-0751</u>			COMPANY <u>Same as Report to:</u>				PHONE			<u>A1489</u>				
NAME <u>David Terry</u>				FAX <u>860 537-6347</u>			NAME				FAX							
ADDRESS <u>PO Box 297</u>							ADDRESS											
CITY/ST/ZIP <u>Colchester, CT</u>							CITY/ST/ZIP							TURNAROUND TIME:				
CLIENT PROJECT NAME: <u>Keyspan / Rockaway Park</u>			CLIENT PROJECT #: <u>992482-9-1813</u>			CLIENT P.O.#:			REQUESTED ANALYSES BTEX (8260) SVOCs (8270) Total CN (CLP method) Total Organic Carbon pH by CLP method biochemical (5M 2540.5) Grain Size analysis									
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS										
RPSEDBG-G	10/9/02 / 1720				✓		24	3	X	X	X	X	X	X	X			
RPSEDBG-F	10/9/02 / 1745				✓		25	3	X	X	X	X	X	X	X			
RPSEDBG-E	10/9/02 / 1820				✓		26	3	X	X	X	X	X	X	X			
RPSEDBG-D	10/9/02 / 1810				✓		27	3	X	X	X	X	X	X	X			
RPSEDBG-C	10/9/02 / 1820				✓		28	3	X	X	X	X	X	X	X			
RPSEDBG-B	10/9/02 / 1835				✓		29	3	X	X	X	X	X	X	X			
RPSEDBG-A	10/9/02 / 1845				✓		30	3	X	X	X	X	X	X	X			
RPTB100902	10 /			✓			31	1	X									
	/																	
	/																	
	/																	
	/																	
TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY		DATE/TIME	ADDITIONAL REMARKS:		COOLER TEMP:										
	<u>JT</u>	10/10/02 / 1200	<u>[Signature]</u>		10-11-02 0900			32										
		/			/													
29		/			/													

WHITE: LABORATORY COPY

YELLOW: REPORT COPY

PINK: CLIENT'S COPY

Sediment Data Validation Report

Site: Rockaway Park RI
Laboratory: Mitkem Corporation
Report No.: A1489
Reviewer: Jeffrey Carr / GEI Consultants, Inc.
Date: November 29, 2002

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RPSED02-9 (0-0.3)	A1489-01	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-9 (0.3-3)	A1489-02	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-6 (0-0.3)	A1489-03	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-6 (0.3-1.9)	A1489-04	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-6 (1.9-2.4)	A1489-05	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-6 (2.4-4.4)	A1489-06	VOC's (8260), SVOC's (8270)
RPSED02-3 (0-0.3)	A1489-07	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-3 (0.3-3)	A1489-08	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-2 (0-0.3)	A1489-09	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-2 (0.3-3)	A1489-10	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-8 (0-0.3)	A1489-12	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-8 (0.3-3)	A1489-13	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-7 (0.0-0.3)	A1489-14	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-7 (0.3-3.0)	A1489-15	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-5 (0.0-0.3)	A1489-16	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-5 (0.3-3.0)	A1489-17	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-4 (0-0.3)	A1489-18	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-4 (0.3-3.0)	A1489-19	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)

Rockaway Park RI, Project# 982482

RPSED02-1 (0.0-0.3)	A1489-20	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSED02-1 (0.3-3.0)	A1489-21	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSEDXX100902	A1489-22	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSEDBG-H	A1489-23	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSEDBG-G	A1489-24	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSEDBG-F	A1489-25	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSEDBG-E	A1489-26	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSEDBG-D	A1489-27	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSEDBG-C	A1489-28	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSEDBG-B	A1489-29	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)
RPSEDBG-A	A1489-30	VOC's (8260), SVOC's (8270), CN (9012), pH (9045), and Hardness (SM)

ASSOCIATED QC SAMPLE(S): Trip Blank: RPTB100902
 Rinsate Blank: RPER100902

The analyses were performed according to NYSDEC ASP protocols (October 1995 update) and reported per NYSDEC ASP requirement for Category B deliverable. The data validation was performed in accordance with the National Functional Guidelines for Evaluating Organic Analyses, EPA540/R-99/008, dated October 1999 and the National Functional Guidelines for Inorganic Data Review, EPA540/R-94/013, dated February 1994. In addition to the fractions validated, the sediment samples listed above with the exception of RPSED02-6 (2.4-4.4) were subcontracted to R.I. Analytical for a sieve analysis test per method ASTM D422.

The organic data were evaluated based on the following quality control (QC) parameters:

- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) tunes
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Internal Standards
- Laboratory Control Sample (LCS) Results
- Matrix Spike/Matrix Spike Duplicate Results
- Field Duplicate Results
- Sample Quantitation and Data Assessment
- Target Compound Identification
- Tentatively Identified Compounds

All results were found to be usable.

Holding Times and Sample Preservation

All samples were initially analyzed within extraction and analytical hold times. Due to low surrogate recoveries, samples RPSED02-4 (0-0.3), RPSED02-5 (0.3-3.0), RPSED02-7 (0.0-0.3), and RPSED02-7 (0.3-3.0) were re-extracted for SVOC's five days after the fourteen-day extraction hold time had expired. Due to expired hold times, all positive results and quantitation limits for these re-runs have been qualified as estimated (J/UJ).

Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

All instrument performance check criteria were met and in compliance.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the VOC initial and continuing calibrations are summarized in the following table.

Instrument ID: V1 Compound	IC 10/09/02	CC 10/11/02	CC 10/14/02
4-Methyl-2-Pentanone		XX (25.5%)	
Chloromethane			XX (29.4%)
Bromomethane			XX (41.1%)
Chloroethane			XX (25.8%)
Samples Affected	All listed	RPSED02-3 (0-0.3)	RPSED02-9 (0-0.3)
		RPSED02-5 (0.0-0.3)	RPSED02-9 (0.3-3)
			RPSED02-6 (0-0.3)
			RPSED02-6 (2.4-4.4)
			RPSED02-3 (0.3-3)

Instrument ID: V1 Compound	IC 10/09/02	CC 10/11/02	CC 10/14/02
Chloromethane			XX (29.4%)
Bromomethane			XX (41.1%)
Chloroethane			XX (25.8%)
			RPSED02-2 (0-0.3)
			RPSED02-2 (0.3-3)
			RPSED02-8 (0-0.3)
			RPSED02-7 (0-0.3)
			RPSED02-7 (0.3-3)
			RPSED02-5 (0.3-3)
			RPSED02-4 (0-0.3)
			RPSED02-4 (0.3-3)
			RPSED02-1 (0.0-0.3)

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.
 XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) non-detect results.
 += Response factor (RRF)<0.05; estimate (J) positive results and reject (R) non-detect results.

The positive results and non-detects for 4-Methyl-2-Pentanone analyzed 10/11/02 and Chloromethane, Bromomethane and Chloroethane analyzed 10/14/02 have been qualified as estimated (J/UJ) for the samples outlined in the table above.

Compounds that did not meet criteria in the SVOC initial and continuing calibrations are summarized in the following table.

Instrument ID: S3 Compound	IC 10/16/02	CC 10/24/02	CC 11/01/02
N-Nitroso-di-n-proylamine			XX (36.1)
4-Chloroaniline	.	XX (35.3)	XX (56.7)
3-Nitroaniline		XX (37.3)	XX (83.0)
4-Nitrophenol		XX (28.3)	
4-Nitroaniline	X (37.2)	XX (40.8)	XX (45.7)
Carbazole		XX (42.7)	XX (66.4)
3,3'-Dichlorobenzidine			XX (30.6)
Samples Affected	RPSED02-1 (0.3-3)	RPSED02-1 (0.0-0.3)	RPSED02-6 (1.9-2.4)
	RPSEDXX100902	RPSED02-2 (0-0.3)	
	RPSEDBG-H	RPSED02-9 (0-0.3)	
	RPSEDBG-G	RPSED02-6 (0-0.3)	
	RPSEDBG-F	RPSED02-6 (0.3-1.9)	
	RPSEDBG-E	RPSED02-3 (0-0.3)	
	RPSEDBG-D	RPSED02-3 (0.3-3)	
	RPSEDBG-C	RPSED02-5 (0.0-0.3)	

Instrument ID: S3 Compound	IC 10/16/02	CC 10/24/02	CC 11/01/02
4-Chloroaniline		XX (35.3)	
3-Nitroaniline		XX (37.3)	
4-Nitrophenol		XX (28.3)	
4-Nitroaniline		XX (40.8)	
Carbazole		XX (42.7)	
Samples Affected		RPSEDBG-B	
		RPSEDBG-A	

X= Initial calibration (IC) relative standard deviation (%RSD)>30; estimate (J) positive results.
 XX= Continuing calibration (CC) percent difference (%D)>25; estimate (J) positive and (UJ) non-detect results.
 += Response factor (RRF)<0.05; estimate (J) positive results and reject (R) non-detect results.

There were no positive 4-Nitroaniline results for the samples associated with the 10/16/02 initial calibration. All of the positive results and quantitation limits for the compounds that drifted more than 25% from the initial calibration in the samples listed in the table above have been qualified as estimated (J/UJ).

Blanks

Target compounds detected in method blank(s) are listed in the following table.

Blank ID	Date Analyzed	Compound	Concentration
VBLK1K	10/11/02	Methylene Chloride	1 ug/Kg
VBLK1B	10/14/02	Methylene Chloride	1 ug/Kg
VBLK1D	10/15/02	Methylene Chloride	2 ug/Kg

All of the samples associated with the blanks outlined in the table above have been qualified (B) in the original data package provided by the laboratory. All of the method blanks listed above and the associated samples were found to contain methylene chloride concentrations at a level below the limit of quantitation. No additional action has been taken.

Surrogate Recoveries

All VOC surrogate recoveries were inside the QC limits with the exception of those listed in the following table.

Sample ID	Dibromofluoromethane
RPSEDBG-A	33 %

Sample RPSEDBG-A was analyzed initially and the surrogate Dibromofluoromethane yielded a low recovery of 33%. The sample was re-analyzed and the same surrogate was out low at 34% confirming the matrix effects of the initial run. The positive results and

non-detects for all target compounds have been qualified as estimated (J/UJ) in both the original and re-run.

All SVOC surrogate recoveries were inside the QC limits with the exception of those listed in the following table.

Sample ID	S1	S2	S3	S4	S5	S6	S7	S8
RPSED02-4 (0-0.3)	43 *	50 *	59 *	47	46	44 *	47	42 *
RPSED02-4 (0-0.3) RE	61	74	115*	61	56	73	65	64
RPSED02-5 (0.3-3.0)	42 *	49 *	54 *	47	45	35 *	45	36 *
RPSED02-5 (0.3-3.0) RE	65	77	111	65	61	74	71	71
RPSED02-7 (0.0-0.3)	44 *	34 *	31 *	56	56	50 *	55	11 *
RPSED02-7 (0.0-0.3) RE	59	75	124*	59	55	74	63	59
RPSED02-7 (0.3-3.0)	45 *	45 *	39 *	56	55	39 *	54	24 *
RPSED02-7 (0.3-3.0) RE	67	82	123*	66	59	77	69	65
RPSED02-8 (0.3-3.0)	42 *	52 *	63	48	47	44 *	47	42 *
RPSED02-8 (0.3-3.0) MS	46 *	57	66	58	53	55	54	37 *
RPSED02-8 (0.3-3.0) MSD	46	55	64	54	51	52	52	40 *

* = Outside QC Limits

S1 = Nitrobenzene-d5 S3 = Terphenyl-d14 S5 = 2-Fluorophenol S7 = 2-Chlorophenol-d4
S2 = 2-Fluorobiphenyl S4 = Phenol-d5 S6 = 2,4,6-Tribromophenol S8 = 1,2-Dichlorobenzene-d4

Two or more Base/Neutral surrogates were recovered below the lower control limits for samples RPSED02-4 (0-0.3), RPSED02-5 (0.3-3.0), RPSED02-7 (0.0-0.3), RPSED02-7 (0.3-3.0) and RPSED02-8 (0.3-3.0). The positive results and non-detects for Base/Neutral SVOC's in the original runs for these samples have been qualified as estimated (J/UJ). RPSED02-8 (0.3-3.0) was analyzed as a matrix spike sample and the other samples were re-extracted and re-analyzed. Two surrogates and several spiking compounds were out low in RPSED02-8 (0.3-3.0) MS/MSD. Terphenyl-d14 was out high in RPSED02-4 (0-0.3) RE, RPSED02-7 (0.0-0.3) RE and RPSED02-7 (0.3-3.0) RE and all surrogates in sample RPSED02-5 (0.3-3.0) RE were in control.

Internal Standards

The following table lists the VOC Internal Standard (IS) recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard(s): Sample ID	Recovery	Actions
Fluorobenzene: RPSED02-6 (0-0.3)	30 %	Estimate positive and non-detect (J/UJ) values for all VOC (8260) target compounds associated with this Internal Standard.
Chlorobenzene-d5: RPSED02-6 (0-0.3)	30 %	Estimate positive and non-detect (J/UJ) values for all VOC (8260) target compounds associated with this Internal Standard.

Internal Standard(s): Sample ID	Recovery	Actions
1,4-Dichlorobenzene-d4:		Estimate positive and non-detect (J/UJ) values for all VOC (8260) target compounds associated with this Internal Standard.
RPSEDBG-A	42 %	
RPSEDBG-A (Re-run)	44 %	
RPSED02-6 (0-0.3)	22 %	

Selected positive and non-detect VOC results for sample RPSEDBG-A are qualified as estimated (J/UJ) as a result of the low IS recovery for 1,4-Dichlorobenzene-d4. All positive and non-detect VOC results for sample RPSED02-6 (0-0.3) have been qualified as estimated (J/UJ) as a result of low IS recoveries.

The following table lists the SVOC Internal Standard (IS) recoveries found outside the validation control limits of -50 percent to +100 percent of the associated calibration standard and the resultant actions.

Internal Standard(s): Sample ID	Recovery	Actions
Chrysene-d12:		Estimate positive and non-detect (J/UJ) values for all SVOC (8270) target compounds associated with this Internal Standard.
RPSED02-7 (0-0.3) RE	48 %	
RPSED02-7 (0.3-3) RE	39 %	
RPSED02-5 (0.3-3.0) RE	46 %	
RPSED02-4 (0-0.3) RE	43 %	Estimate positive and non-detect (J/UJ) values for all SVOC (8270) target compounds associated with this Internal Standard.
Perylene-d12:		
RPSED02-7 (0-0.3) RE	26 %	
RPSED02-7 (0.3-3) RE	23 %	
RPSED02-5 (0.3-3.0) RE	27 %	Estimate positive and non-detect (J/UJ) values for all SVOC (8270) target compounds associated with this Internal Standard.
RPSED02-4 (0-0.3) RE	24 %	

Laboratory Control Sample Results

Spike recoveries and replicate RPD's were within the QC limits for all VOC target compounds. Spike recoveries and replicate RPD's were within the QC limits for all SVOC target compounds with the exception of those listed in the table below.

Compound	Lab ID	LCS	LCSD	RPD
Carbazole	S3HLCS	129 *	147 *	13
2,4-Dinitrophenol	S3HLCS	36	70	64 *
4-Nitroaniline	S3HLCS	118	129 *	9
4,6-Dinitro-2-methylphenol	S2ALCS	38	31 *	20

* = Outside QC limits.

Carbazole and 4-Nitroaniline were recovered high in the control samples (S3HLCS) extracted 10/15/02. The spike recoveries for 2,4-Dinitrophenol were within the control limits, but the RPD was out of control. The samples associated with these control spikes

include RPSED02-1 (0.3-3), RPSEDXX100902, RPSEDBG-H, RPSEDBG-G, RPSEDBG-F, RPSEDBG-E, RPSEDBG-D, RPSEDBG-C, RPSEDBG-B and RPSEDBG-A. Since the spike recoveries were all greater than the lower control limit and these compounds were not detected in any of the samples above the limit of quantitation, no action has been taken. 4,6-Dinitro-2-methylphenol was recovered low in the control samples (S2ALCS) extracted 10/28/02. The samples associated with these control spikes include the re-extractions of samples RPSED02-4 (0-0.3), RPSED02-5 (0.3-3), RPSED02-7 (0-0.3), and RPSED02-7 (0.3-3). All of the SVOC data has been qualified for the re-runs for hold time and internal standard anomalies. No additional action has been taken.

Matrix Spike/Matrix Spike Duplicate Results

The laboratory performed an MS/MSD on sample RPSED02-8 (0.3-3.0) for VOC and SVOC analyses. Spike recoveries were within the advisory QC limits with the exception of those listed in the following table.

Sample ID	Compound	MS	MSD	RPD
RPSED02-8 (0.3-3.0)	1,3-Dichlorobenzene	36 *	40	10
RPSED02-8 (0.3-3.0)	1,4-Dichlorobenzene	38 *	43	12
RPSED02-8 (0.3-3.0)	1,2-Dichlorobenzene	40 *	47	16
RPSED02-8 (0.3-3.0)	Hexachloroethane	35 *	39 *	11
RPSED02-8 (0.3-3.0)	Hexachlorobutadiene	38 *	43	12
RPSED02-8 (0.3-3.0)	2,4,5-Trichlorophenol	55 *	60	9
RPSED02-8 (0.3-3.0)	Dibenzofuran	60 *	60 *	0
RPSED02-8 (0.3-3.0)	4-Bromophenyl-phenylether	55 *	60 *	9
RPSED02-8 (0.3-3.0)	Hexachlorobenzene	55 *	60 *	9
RPSED02-8 (0.3-3.0)	Phenanthrene	70	65 *	7
RPSED02-8 (0.3-3.0)	Di-n-octylphthalate	65 *	70	7
RPSED02-8 (0.3-3.0)	Benzo(k)fluoranthene	60 *	60 *	0
RPSED02-8 (0.3-3.0)	Benzo(a)pyrene	65 *	65 *	0
RPSED02-8 (0.3-3.0)	Dibenzo(a,h)anthracene	50 *	50 *	0
RPSED02-8 (0.3-3.0)	Benzo(g,h,i)perylene	50 *	50 *	0

* = Outside advisory QC limits.

Several compounds were detected below the lower advisory control limit in the MS and/or the MSD for sample RPSED02-8 (0.3-3.0). The low RPD's suggest the presence of matrix interferences. The Base/Neutral targets have already been qualified as estimated for low surrogate recoveries. No additional action has been taken.

Field Duplicate Results

The collection/analysis of field duplicates was not performed or is not evident in any of the samples in this report.

Sample quantitation and Data Assessment

Results were reported which were below the lowest calibration standard level and quantitation limit in the VOC and SVOC analyses. These results were qualified as estimated (J).

The following table lists the sample dilutions performed and reported. Quantitation limits were elevated accordingly.

Sample	Analyses	Dilution Reported
RPSED02-6 (1.9-2.4)	VOC	8-fold
RPSED02-1 (0.0-0.3)	SVOC	5-fold
RPSED02-3 (0-0.3)	SVOC	5-fold
RPSED02-3 (0.3-3)	SVOC	5-fold
RPSED02-6 (0-0.3)	SVOC	5-fold
RPSED02-6 (0.3-1.9)	SVOC	5-fold
RPSED02-6 (1.9-2.4)	SVOC	15-fold
RPSED02-9 (0-0.3)	SVOC	5-fold
RPSED02-9 (0.3-3)	SVOC	5-fold

Target Compound Identification

No erroneous compound identifications appear based upon the evaluation of retention times and the examination of sample preparation and injection logs, chromatograms, and forms I.

Tentatively Identified Compounds

The raw data has been checked to verify proper TIC identification. All TIC results are considered estimated.

The inorganic data, which include cyanide, hardness by calculation, and pH were evaluated based on the following QC parameters where applicable:

- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Matrix Spike Results
- Laboratory Duplicate Results

All results were found to be usable.

Holding Times and Sample Preservation

All samples were analyzed within extraction and analytical hold times. All samples were received within temperature specifications of 2°C and 6°C.

Initial and Continuing Calibrations

All calibrations are in compliance with QC acceptance criteria.

Blanks

There was no blank contamination associated with the samples included in this report.

Laboratory Control Sample Results

Laboratory spike recoveries were within the QC limits.

Matrix Spike Recoveries

The following table lists the MS recoveries found outside of the advisory limits for cyanide and the resultant actions.

Sample ID	Recovery	Actions
RPSED02-9 (0-0.3)	51 %	Qualify all sample results and non-detects in the distillation batch as estimated (J/UJ)

Samples associated with the spiked sample distilled on 10/16/02 include RPSED02-9 (0-0.3), RPSED02-9 (0.3-3), RPSED02-6 (0-0.3), RPSED02-6 (0.3-1.9), RPSED02-6 (1.9-2.4), RPSED02-3 (0-0.3), RPSED02-3 (0.3-3), RPSED02-2 (0-0.3), RPSED02-2 (0.3-3), RPSED02-8 (0-0.3), RPSED02-8 (0.3-3.0), RPSED02-7 (0.0-0.3), RPSED02-7 (0.3-3.0), RPSED02-5 (0.0-0.3), and RPSED02-5 (0.3-3.0). A post-distillation spike was analyzed and recoveries were within the QC limits.

Laboratory Duplicate Results

Laboratory duplicates were within QC limits