KEYSPAN

Rockaway Park Former Manufactured Gas Plant Site

REMEDIAL INVESTIGATION REPORT

OCTOBER 2002

Prepared for:

KEYSPAN
One MetroTech Center
Brooklyn, New York

Prepared by:

DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

RLA/KEYSAN/REMDMEASROCKAWAY1620(10/15/02)

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

October 24, 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
Remedial Investigation Report
Rockaway Park, Queens
Site No. 2-41-029

Dear Mr. MacNeal:

Enclosed please find five (5) copies and 1 electronic copy on compact disc (CD) of the following report:

" Rockaway Park Former Manufactured Gas Plant Site
Remedial Investigation Report
October 2002"

By copy of this letter, the above-referenced document has also been forwarded to the parties named below.

This Remedial Investigation Report is based on the findings of the remedial investigation field program. Based on the recommendations in this report and discussions with the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH), KeySpan has conducted a Supplemental Remedial Investigation Field Program. The results of the Field Program will be provided in a separate report.

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

Sincerely,

Thomas J. Campbell

Thomas J. Campbell
Senior Environmental Engineer

TJC/ASP/cmc
Enclosures

cc: D. Wolterding, NYSDEC, Region 2 (1 copy)
S. Selmer, NYSDOH (2 copies, 1 CD)
L. Liebs, KeySpan (1 CD)
J. Reilly, KeySpan (1 CD)

ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE

REMEDIAL INVESTIGATION

Prepared for:

KEYSPAN CORPORATION
One Metrotech Center
Brooklyn, New York

Prepared by:

DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
330 Crossways Park Drive
Woodbury, New York

OCTOBER 2002

ROCKAWAY PARK FORMER
MANUFACTURED GAS PLANT SITE
REMEDIAL INVESTIGATION

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S.0 EXECUTIVE SUMMARY

Introduction

KeySpan Corporation (KeySpan) entered into a Voluntary Cleanup Agreement and Order on Consent (Index No. D1-0002-98-11) with the New York State Department of Environmental Conservation (NYSDEC) to conduct a remedial investigation of a former manufactured gas plant (MGP) site located in Rockaway Park, Queens County, New York. As required by the Order on Consent, the remedial investigation was conducted in accordance with the scope-of-work presented in the final Rockaway Park former MGP Site Investigation Work Plan, dated November 1999.

This remedial investigation report presents: introductory and background information related to the site; an overview of historic and current site operations; details concerning the scope of the investigation program; a discussion of the geology and hydrogeology of the investigation area; an evaluation of the nature and extent, and fate and transport of chemical constituents in the environment related to the site; and a summary of the findings of the overall site investigation and associated interim remedial measures (IRMs). In addition, the results of the site investigation will be used to prepare a qualitative human exposure assessment and to perform a Fish and Wildlife Resources Impact Analysis (FWRIA) for the site. The qualitative human exposure assessment and FWRIA will be prepared as part of a separate document.

Summary of Findings

Based on the findings of the remedial investigation, impacts to on-site as well as off-site subsurface soil and groundwater have been documented that are characteristically typical of former MGP sites. However, the following points are noteworthy:

1. The chemical constituents detected in soil and groundwater are reasonably consistent with that expected for a former MGP site (refer to "Site Remedial Investigation Findings").

2. Chemical constituents from the site have not adversely impacted drinking water supplies in the community.

3. Previous investigations have found that no former MGP operations were located in the northwest portion of the site. In addition, analytical results for soil samples taken from the northwest portion of the site during the current investigation are not consistent with those expected for a former MGP site. As a result, the NYSDEC has redefined the site boundary to remove an approximate 1-acre parcel located in the northwest portion of the site from the Registry of Inactive Hazardous Waste Disposal Sites.

4. Chemical constituents associated with a former MGP site detected in soil and groundwater were observed to be migrating off-site in a northerly direction, under an adjacent public roadway and a strip of land, including a bulkhead, now owned by the City of New York.

5. There are no data to suggest that the public is being exposed to the chemicals present in surface soil either on the site or in the community.

Site Location and Description

The Rockaway Park former MGP site is located on the north shore of the Rockaway Peninsula in Rockaway Park, Queens County, New York. The site is approximately 9.8 acre in area. The site is bordered on the north by Beach Channel Drive and a narrow strip of land currently owned by the City of New York (located directly north of Beach Channel Drive), the Metropolitan Transportation Authority (MTA) subway tracks and yard followed by private residences to the south, a commercial area including auto service and retail businesses to the west and a New York City sewage treatment plant to the east.

A former electric substation is currently located in the northeast corner of the site. It should be noted that the former substation is scheduled to be demolished by KeySpan in the near future. In addition, an active natural gas regulator station is located in the southeast corner of the site and a three-story office building is located in the north-central portion of the site. Also located along the north side of the site is a one-story building housing a workshop. In addition, an active electric substation is located in the northwest corner of the site. It should be noted that, based on historic data and prior sampling, the NYSDEC has redefined the site to exclude the approximate 1-acre parcel associated with the existing electric substation located in the

northwest corner from the Registry of Inactive Hazardous Waste Disposal Sites. The surface of the site is either covered by asphalt, crushed stone or relatively thick vegetation and is fully enclosed and secured by an 8-foot high chain-link fence.

Topography at the Rockaway Park former MGP site is relatively flat. Site elevation ranges from approximately 6.5 feet above mean sea level (msl) in the central, eastern and southeastern portions of the site to about 9 feet above msl in the northern portion of the site and 11 feet above msl in the southern portion of the site. Storm water runoff across the site generally flows southeast. Storm water flows south along Beach 108th Street following the New York City storm water drainage system westward, adjacent to Rockaway Beach Boulevard to Beach 116th Street. At that point, storm water flows northward to Jamaica Bay.

There are no naturally occurring or manmade surface water bodies within the boundaries of the Rockaway Park former MGP site. Jamaica Bay, which is located approximately 140 feet north of the site, is listed as a Class SB water body by the NYSDEC. This classification indicates that these waters can be utilized for primary and secondary contact recreation and fishing but restricts commercial shellfishing. The Atlantic Ocean is located approximately 1,500 feet south of the site and is listed as a Class SA water body by the NYSDEC. This classification indicates that the water body can be utilized for shellfishing, primary and secondary contact recreation and fishing.

Sanborn Fire Insurance Maps indicate that the Rockaway Park site is located in an area that has been filled as part of several expansions of the Rockaway Peninsula to the north, towards Jamaica Bay. As a result, the soil directly beneath the site and surrounding areas consists of approximately 10 to 20 feet of fill material containing dredge soil (primarily sand), demolition debris, coal, tar, coke, and clinker. In general, this material is highly porous with good water transmitting properties. Underlying the fill unit, throughout much of the site, are sandy, shell bearing deposits consisting of sand with very low quantities of silt and finer material. Similar to the fill material, this sand unit is highly porous with good water transmitting properties. Several silty-fine sand lenses were encountered within the southwestern portion of

the site at depths of between 65 and 95 feet below ground surface (bgs). However, they do not appear to be continuous in nature and do not function as an effective confining unit.

Depth to groundwater at the site is approximately 5 feet bgs. Groundwater flow in the vicinity of the site is strongly influenced by the cyclic tidal fluctuations of Jamaica Bay. Tidal influences are greatest in monitoring wells located closest to Jamaica Bay. As a result of these tidal influences, groundwater flows in a southerly direction between Jamaica Bay and the nothernmost portion of the site during periods of high tide. Groundwater was also observed to flow to the south within the deep groundwater zone during periods of high tide. However, groundwater flows in a northerly direction towards Jamaica Bay throughout the majority of the site during low and mid-tidal periods. Groundwater in the eastern most portion of the site appears to flow in a more northeasterly direction during low and mid-tidal periods.

Site History

Operations

The Rockaway Park MGP began operations as early as the late 1870s. According to various sources, the plant was operated by the Rockaway Electric Light Co., Town of Hempstead Gas & Electric Light Company and later the Queensborough Gas and Electric Company. The Queensborough Gas & Electric Company became a subsidiary of the Long Island Lighting Company (LILCO) in 1926. LILCO operated the plant until the 1950s. The original service area of the plant was the Rockaway Peninsula and southwest Nassau County. Following the arrival of natural gas in the northeast during the early 1950s, the Rockaway Park plant continued operation as a "peak demand/emergency facility" to ensure adequate gas supplies. Based on a review of historic site plans and Sanborn maps, the property included four gas storage tanks, eight purifiers, several oil tanks, a tar separator, a naphthalene scrubber and several other production buildings. The plant ceased operation in 1957 and the facilities for gas manufacturing were dismantled and removed from the site in 1958 by LILCO. In 1998, KeySpan Corporation acquired the former MGP property through a merger of LILCO and the Brooklyn Union Gas Company.

Previous Investigations

Several investigations were conducted between 1989 and 2000 at the Rockaway Park former MGP site. A site inspection was conducted in 1989 by a contractor for the United States Environmental Protection Agency (USEPA). Based on the results of this investigation, it was determined that a number of chemical constituents were detected in surficial soil at the site. The investigation concluded that remedial action was warranted prior to additional site use/development activities. LILCO completed a Phase I Site Investigation at the site in January 1997. The results of the 1997 Phase I indicated that the subsurface soil exhibited evidence of nonaqueous phase liquid (NAPL) throughout most of the site and the groundwater contained concentrations of BTEX and PAHs constituents.

An Interim Remedial Measure Study was completed for LILCO in March 1999 that investigated portions of the Rockaway Park site in order to select a suitable location for a new electric substation. Sanborn maps reviewed as part of this investigation did not identify any MGP operations located in the northwest portion of the site. In addition, analytical results for soil samples collected in the northwest portion of the site were not consistent with that expected for a former MGP site. As a result, the northwest portion of the site was identified as the most suitable location for the new electric substation. In August 2000, a Substation Investigation Report and Delisting Petition was completed to support construction of a new electric substation in the northwest portion of the site. The August 2000 investigation characterized soil quality in the vicinity of the proposed substation, evaluated potential health risks and provided the framework for the NYSDEC to redefine the northwest portion of the Rockaway Park site from the Registry of Inactive Hazardous Waste Disposal Sites. The intent of the study was to demonstrate that the relocation of the substation to the northwest corner of the site would not negatively impact future remediation of the site. Subsequently, the NYSDEC has formally approved KeySpan's request to redefine the site boundary in the northwest portion of the site. Similarly, an Underground Feeder Cable and Transmission Cable Investigations were completed in June 2000 and November 2001, respectively. These investigations characterized the soil within the proposed area of the underground feeder and transmission cables for the purposes of assessing general worker health

and safety and possible disposal issues. Finally, a Bulkhead Investigation was completed in April 2002. This investigation determined the horizontal and vertical extent of chemical constituents in soil and groundwater within the New York City owned bulkhead area located north of the site. It should be noted that the results of the Bulkhead Investigation were included with the overall Remedial Investigation for Rockaway Park.

Rockaway Park Former MGP Site Remedial Investigation

The objectives of the remedial investigation were to:

- Sufficiently characterize the site to achieve an understanding of the nature and extent and migration of chemical constituents in the environment;
- Obtain sufficient data to allow for an evaluation of the potential human exposure pathways and environmental risks associated with chemical constituents found in the environment in order to determine the need for remedial action (a qualitative human exposure assessment and FWRIA will be prepared as part of a separate document); and
- Provide sufficient environmental information to determine the need for remedial action and evaluate remedial alternatives leading towards the design and implementation of a selected remedy.

The remedial investigation field program included the following activities:

- Soil vapor sampling;
- Surface soil sampling;
- Subsurface soil sampling;
- Groundwater monitoring well inventory, assessment and initial groundwater sampling;
- Groundwater probe installation and sampling;
- Groundwater monitoring well installation and sampling;
- Tidal Study;

- Ambient air sampling;
- Perimeter and location-specific air monitoring; and
- Surveying and mapping.

Site Remedial Investigation Findings

Benzene, toluene, ethylbenzene and xylene (BTEX) were detected in on-site surface soil up to a maximum total BTEX concentration of 0.008 milligrams per kilogram (mg/kg). In addition, polycyclic aromatic hydrocarbons (PAHs) were detected in on-site surface soil up to a maximum total PAH concentration of 186 mg/kg. However, the site is fenced and is covered with asphalt, crushed stone, or relatively thick vegetation which reduces the potential for direct contact with the underlying "surface" soil.

Subsurface soil contains concentrations of BTEX and PAHs with the highest levels generally detected in shallow intervals between 2 and 12 feet bgs within the former Gas Works area located in the south central portion of the site, the former Oxide Enclosure, located south of the active electric substation and the former 2-Million Cubic Foot Gas Holder located in the southeastern portion of the site. The highest total BTEX and PAH concentrations in subsurface soil were observed in soil sample RPSB-12 (14-16 feet) at 2,474 mg/kg and 21,575 mg/kg, respectively. Soil boring RPSB-12 is located in the north central portion of the site within the area of the former Store House. A number of subsurface soil samples collected within these areas also exhibited evidence of NAPL. Evidence of NAPL extended to a maximum depth of 116 feet bgs within the former Gas Works area. However, BTEX and PAH concentrations appear to rapidly decrease with increasing depth even in areas exhibiting NAPL.

Several groundwater samples also exhibited NAPL layers. In March 2000, piezometer PZ-08, located within the central portion of the former Gas Works area, contained approximately three feet of measurable light NAPL (LNAPL) on the water table. Monitoring well RPMW-05S, located along the northern property boundary, exhibited a trace amount of LNAPL on the water table. Deep NAPL (DNAPL) was also observed in monitoring well RPMW-09D2 also located in the central portion of the former Gas Works area. In addition, off-site monitoring wells

RPMW-11S and 11D located downgradient or north of the site exhibited trace amounts of LNAPL. However, groundwater measurements conducted in November 2001 only indicated measurable levels of LNAPL in piezometers PZ-05 and PZ-08 of 0.16 feet and 0.25 feet, respectively. A comparison of NAPL thicknesses from March 2000 to November 2001 indicates that the measurable NAPL in groundwater fluctuates as a function of time.

The distribution of BTEX and PAHs in groundwater are generally consistent with observed concentrations in the soil as well as the presence of NAPL. The highest concentrations of these constituents are observed in the vicinity of the former Gas Works area, the former Oxide Enclosure, and the former 2-Million Cubic Foot Gas Holder. In general, on-site groundwater concentrations of BTEX and PAHs decrease with increasing depth at most well clusters. An exception to this general trend was observed at well cluster RPMW-09 which is centrally located in the former Gas Works area. BTEX and PAHs at this cluster increase in concentration from the intermediate to the deep monitoring wells. Groundwater within the northwest portion of the site appears to be relatively free of BTEX and PAH constituents with the concentrations not exceeding 16 ug/l and 21 ug/l, respectively. This observation is also generally consistent with on-site soil quality in the area.

Based on laboratory analytical results and field observations, the following summarizes the off-site findings of the remedial investigation:

- Subsurface soil containing levels of BTEX and PAHs appears to extend beyond the southeast and southern site boundaries. Subsurface soil containing levels of PAHs extends beyond the northern site boundary;
- Off-site migration of BTEX and PAHs is occurring in shallow groundwater to the east of the site. Some off-site migration of PAHs does appear to be occurring in shallow groundwater to the north of the site, but BTEX does not appear to be present;
- Off-site migration of BTEX and PAHs is occurring in intermediate groundwater to the north and east of the site;
- Off-site migration of BTEX and PAHs is occurring in deep groundwater to the north of the site;

- Groundwater samples collected upgradient or south of the site do not exhibit BTEX or PAH concentrations greater than 30 ug/l. This observation is generally consistent with off-site soil quality in the area; and

- Groundwater containing concentrations of total cyanide is migrating to the north of the site in shallow and intermediate groundwater.

Due to the naturally occurring brackish or salty nature of the groundwater beneath the Rockaway Park site, it is not considered suitable as a potable water supply. Public drinking water is supplied to the Rockaway Park area by a series of aqueducts from a watershed located approximately 125 miles north of the New York City. The nearest active public water supply well field is over 7 miles north of the Rockaway Park site located in central Queens County. Based on the location of the public water supply well field, and the depth of the supply wells, there is virtually no potential of site related constituents of influencing the water quality of this well field.

Based on the current understanding as to the nature and extent of BTEX and PAH constituents, additional field investigation is recommended on-site and to the east and west of the site. The objectives of the recommended investigation include:

- Delineate the horizontal extent of chemical constituents in subsurface soil located north of the former Gas Works area;

- Delineate the vertical extent of chemical constituents in subsurface soil located within the vicinity of the active electric substation;

- Characterize on-site groundwater quality within and immediately downgradient of identified source areas; and

- Delineate the horizontal and vertical extent of chemical constituents in subsurface soil and groundwater located to the east of the site.

- Delineate the horizontal and vertical extent of chemical constituents in groundwater located to the west of the site.

1.0 INTRODUCTION

KeySpan Corporation (KeySpan) entered into a Voluntary Cleanup Agreement and an Order on Consent (Index No. D1-0002-98-11) with the New York State Department of Environmental Conservation (NYSDEC) to conduct a remedial investigation of a former manufactured gas plant (MGP) site located in Rockaway Park, Queens County, New York. As required by the Order on Consent, the investigation was conducted in accordance with the scope-of-work presented in the final Remedial Investigation/Feasibility Study Work Plan for the Rockaway Park former MGP site, dated November 1999.

This report presents:

- Introductory and background information related to the site;
- An overview of historic and current operations at the site;
- A discussion of the investigation program;
- A discussion of the geology and hydrogeology of the investigation area;
- A discussion of the nature and extent of chemical constituents in the environment;
- A discussion of the fate and transport of chemical constituents in the environment; and
- A summary of findings.

In addition, it is important to note that a qualitative human exposure assessment, and Fish and Wildlife Resources Impact Analysis (FWRIA), will be prepared to identify potential human exposure pathways and environmental risks associated with the Rockaway Park former MGP site (hereon referred to as "the site"). The qualitative human exposure assessment and FWRIA will be presented as part of a separate document.

1.1 Overview of Report Organization

This report is organized as follows:

- **Executive Summary:** Summarizes and provides an overview of the findings of the remedial investigation, qualitative human exposure assessment and FWRIA.
- **Section 1.0 - Introduction:** Presents project objectives, background and available historical information and a description of the physical setting of the site and its surroundings.
- **Section 2.0 - Field Investigation Program:** Provides an overview of the field activities associated with the investigation. Additionally, it discusses data management and chemical data validation/usability.
- **Section 3.0 - Geology and Hydrogeology:** Discusses the geology and hydrogeology of the site and immediately surrounding study area.
- **Section 4.0 - Nature and Extent of Chemical Constituents:** Presents the concentrations of chemical constituents detected in various environmental media sampled on-site and off-site.
- **Section 5.0 - Fate and Transport of Chemical Constituents:** Discusses the fate and transport of chemical constituents in the environment on-site and off-site.
- **Section 6.0 - Findings:** Summarizes the findings of the site investigation and qualitative human exposure assessment.
- **Section 7.0 - References:** Lists all documents and other sources of information utilized in the preparation of this report.

1.2 Project Objectives

The objectives of the remedial investigation were to:

- Sufficiently characterize the site to achieve an understanding of the nature and extent of chemical constituents in the environment and their migration in the environment;
- Obtain sufficient data to allow for an evaluation of the potential human exposure pathways and environmental risks associated with chemical constituents found in the environment in order to determine the need for remedial action (as previously

discussed, the qualitative human exposure assessment and FWRIA will be prepared as part of a separate document); and

- Provide sufficient environmental information to determine the need for remedial action, inform the evaluation of remedial alternatives and guide the design and subsequent implementation of any selected remedy.

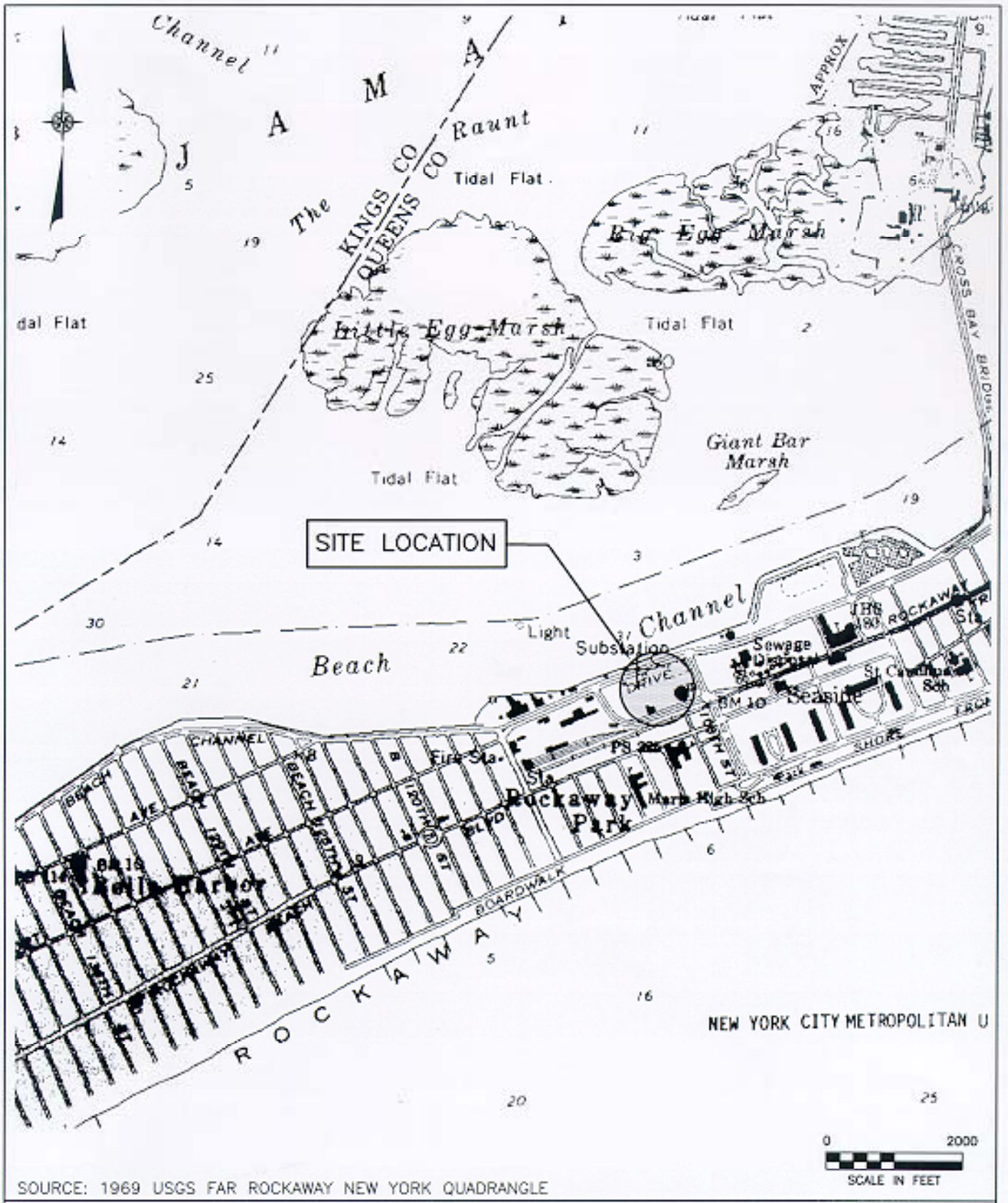
1.3 Site Location and Description

The Rockaway Park former MGP site is located in Rockaway Park, Queens County, New York (see **Figure 1-1**). The site is located on the north shore of the Rockaway Peninsula on the south side of Beach Channel Drive, west of Beach 108th Street. Rockaway Freeway borders the site on both the south and west.

The Rockaway Park site is a 9.8-acre site, a portion of which serves as an active electric and natural gas utility property. Presently, the site includes the following utility operations (see **Figure 1-2**):

- A former Long Island Power Authority (LIPA) electric substation located in the northeast corner which will be demolished by KeySpan in the near future;
- An active KeySpan natural gas regulator station located in the southeast corner;
- A three-story office building located in the north-central area;
- An active LIPA electric substation located in the northwest corner; and
- A one-story former workshop building located along the north side of the site.

It should be noted that, based on historic data and previous sampling, the NYSDEC has redefined the site to exclude the approximate 1-acre parcel associated with the existing electric substation located in the northwest corner from the Registry of Inactive Hazardous Waste Disposal Sites.



SOURCE: 1969 USGS FAR ROCKAWAY NEW YORK QUADRANGLE

ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

SITE LOCATION MAP

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 1-1

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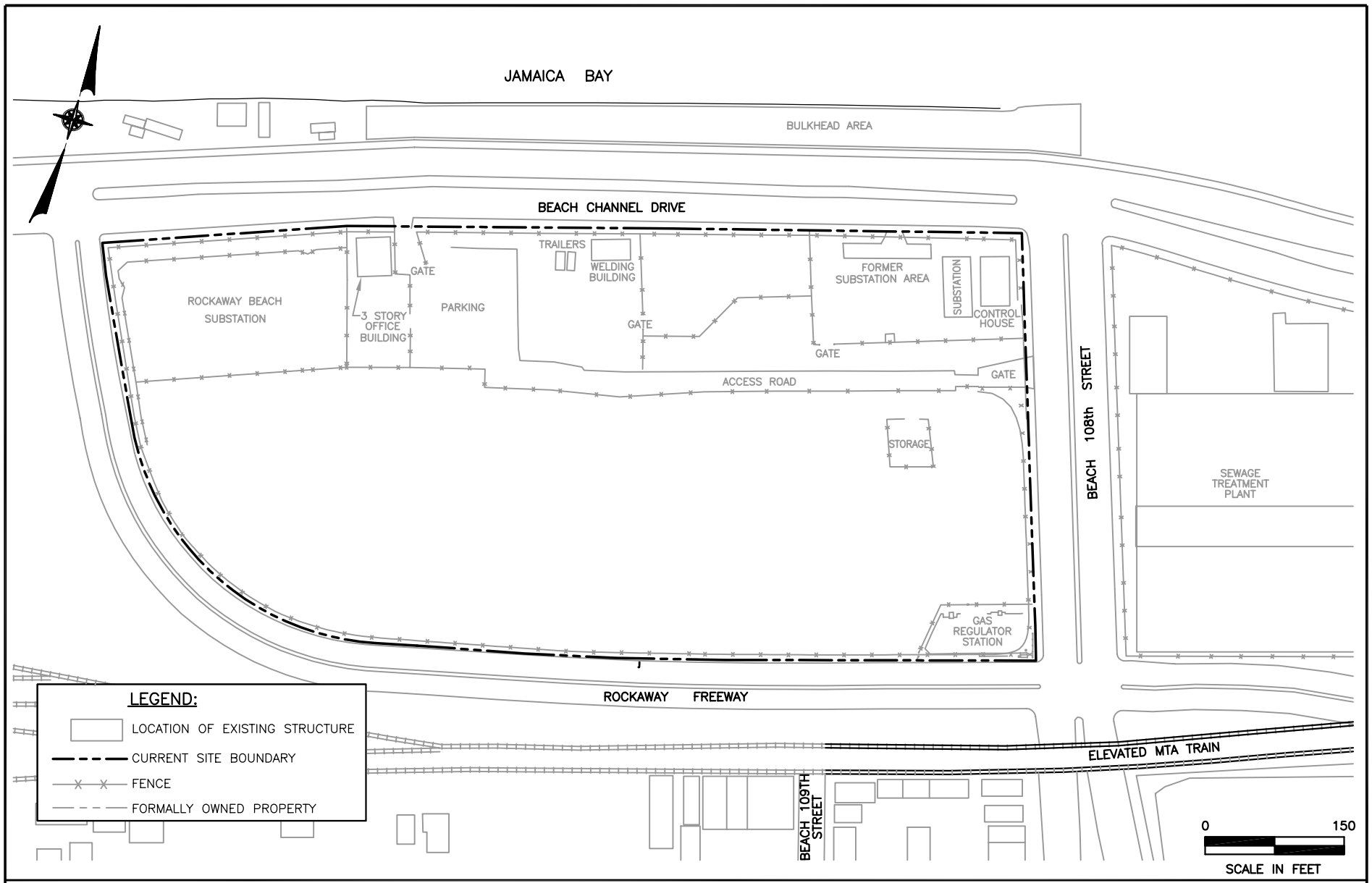

ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

SITE MAP

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 1–2

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A paved driveway extends from the gate on Beach 108th Street to the office building parking area. Former equipment storage areas located between the workshop and the former electric substation are infrequently used and covered with gravel. The areas to the south and west of the paved driveway are fenced and include areas of sandy soil and vegetation.

Presently, the site is fully enclosed by perimeter fencing and is secure from public access. The main entry gate is electronically controlled and is kept closed and locked. Secondary entry gates are also kept locked.

A New York City sewage treatment plant is located immediately to the east of the site. The area south of the site includes the Metropolitan Transportation Authority (MTA) subway tracks and yard followed by private residences. A commercial area, including auto service and retail businesses, is located to the west of the site. North of Beach Channel Drive, along Jamaica Bay, is a narrow strip of land having an area of approximately 0.6 acre. This strip of land, formerly a part of the Rockaway Park site, was previously acquired by the City of New York. For the purposes of this remedial investigation, this land to the north of Beach Channel Drive is considered off-site.

1.4 Site History

1.4.1 Plant Operations

The Rockaway Park MGP began operations as early as the late 1870s. According to various sources, the plant was operated by the Rockaway Electric Light Co., Town of Hempstead Gas & Electric Light Company and later the Queensboro Gas and Electric Company. The Queensboro Gas and Electric Company became a subsidiary of the Long Island Lighting Company (LILCO) in 1926. LILCO operated the plant from the 1950s. Following the arrival of natural gas in the northeast during the early 1950s, the Rockaway Park plant continued operation as a “peak demand/emergency facility” to ensure gas supplies. The plant ceased operation in 1957 and most facilities were demolished in 1958 by LILCO. In 1998, KeySpan Corporation

acquired the former MGP property through a merger of LILCO and the Brooklyn Union Gas Company.

Records indicate that the Rockaway Park plant operated carbureted water gas and coal carbonization processes during early gas production. However, after 1905, the carbureted water gas method of gas production was the only process utilized at the Rockaway Park Plant. High volumes of gas were produced at the Rockaway plant to supply areas on the Rockaway Peninsula and southwest Nassau County. The original plant property was situated slightly to the south of its present southern property line and extended northward to the Jamaica Bay shoreline. The plant expanded in a northerly direction as the demand for gas increased. The most significant expansion of the plant occurred in the mid-1920s when land to the north of the plant in Jamaica Bay was filled during the construction of Beach Channel Drive.

It should be noted that, according to available records, the existence of a second gas plant known as the Far Rockaway "gas works" operated in Far Rockaway between 1900 and 1909. Thereafter, the Far Rockaway gas works plant was described as an office location. Ownership information of the Far Rockaway gas works plant is the same as for the Rockaway Park former MGP site. All gas production attributed to the Far Rockaway gas works plant was based on the Lowe water gas process. Available records indicate that, following the 1909 timeframe, the service area for the Rockaway Park former MGP included the service area for the Far Rockaway former gas works plant.

1.4.2 Historic Structures

According to an 1894 Sanborn map, the original plant was comprised of two gas holders of similar size located directly north of the present day MTA train tracks. At that time, the plant also consisted of a generator, purifiers, and scrubbers. By 1912, the Rockaway Park former MGP site expanded to the north and east for increased gas production. The 1912 plant configuration included the Half-Million Cubic Foot Gas Holder, several Oxide Tanks, a Generator Building, a Boiler Building, an Engine room, several Oil Tanks, and a Condenser. A portion of the southern property boundary was located beneath what is now Rockaway Freeway.

By 1933, land filling operations have enabled the plant to expand to the north, across Beach Channel Drive and included the small strip of land between Beach Channel Drive and Jamaica Bay. The 1933 plant configuration allowed for increased gasification, tar and oil separation and storage, coke and gas storage and included a 2-Million Cubic Foot Gas Holder, a Service Building, a Store House, a Garage, and an electric substation.

The latest configuration of historic structures that were located on the Rockaway Park former MGP site are shown on **Drawing 1A** (located in the Map Pocket at the end of this section of the report) and included a 2-Million Cubic Foot Gas Holder, a 60,000-Cubic Foot Gas Holder and a Half-Million Cubic Foot Relief Gas Holder. The 2-Million Cubic Foot Gas Holder was located in the southeast portion of the site, while the 60,000-Cubic Foot Gas Holder and Half-Million Cubic Foot Relief Gas Holder were located in the central portion of the site referred to as the "Gas Works" area. Other structures located in the former Gas Works area included: seven Purifiers, a Naphthalene Scrubber, four Condensers, a Separator, an After-Cooler, a Tar De-emulsifier, and Tar Settling and Drying Tanks. The buildings that existed on the site within the former Gas Works area included: the Blower Building, the Compressor Building, and the Generator Building. Another building in this area housed the Boiler and Engine Room. Other buildings located on site included the Centrifuge Building, the Exhauster House, a Governor House, a Pump House, a Meter House, and a Foamite House. A Generator Ash Storage Bin, an Oxide Enclosure, a secured Storage Area and a Garage with an associated underground gasoline tank were located just north of the 2-Million Cubic Foot Gas Holder. Other former structures in the northern portion of the site included: a Storehouse, a Service Building, a Control House, and a Skimming Basin and Sump. In addition, several oil holding tanks of various sizes were located throughout the site for the storage of gas oil, fuel oil and drip oil. Based on KeySpan personnel, the northwestern portion of the Rockaway Park former MGP site was used for storing construction equipment and materials. Similarly, according to KeySpan construction drawings and Sanborn maps, the northwest portion of the site was not utilized for the production of manufactured gas.

Based upon site drawings and Sanborn maps, it appears that there were a total of four holders on-site during the operating life of the Rockaway Park former MGP site. Two of the former holders were above grade (2 Million Cubic Foot and Half Million Cubic Foot Holders). Two of the earlier 60,000 Cubic Foot Holders were pit holders approximately seven feet below grade. However, the exact construction details of these gas holders are not available.

1.4.3 Historic Drainage and Supply Wells

Based on a review of a number of construction drawings for the Rockaway Park site, several drainage pipes were identified. For example, immediately east of the former Half-Million Cubic Foot Relief Gas Holder, a 16-inch cast iron "salt water" drain line was identified that ran to the north and presumably discharged to Jamaica Bay. Similarly, a 20-inch cast iron sump drain was identified to the east of the former Service Building; it also ran to the north and presumably discharged to Jamaica Bay. In addition, there was also a 12-inch cast iron salt water line that ran to the center of the former Gas Works area north from the former Salt Water Pump House located approximately 20 feet south of Jamaica Bay. Likewise, there was a 12-inch cast iron drain line located just east of the former Coal Bin that ran to the north and presumably discharged to Jamaica Bay. There was also a 6-inch oil line that located to the west of the 3-story office building that ran to the north and appeared to terminate just south of the Jamaica Bay bulkhead. Due to the concern that these former lines may have contained residual raw materials and byproducts of the gas manufacturing process, all were exposed, cut and capped to eliminate the potential for off-site migration. This is described in a greater detail as part of the Cut and Plug IRM program described in **Section 1.8**.

Two 6-inch diameter groundwater supply wells existed on the Rockaway Park former MGP site. According to Sanborn Maps, the wells were drilled to depths of 990 and 810 feet below ground surface (Sanborn Maps 1933, 1956). These wells, which are actually two of the five on-site industrial water supply wells, supplied water for steam production, fire suppression and general plant use.

According to KeySpan records, there were a total of five industrial water supply wells in operation at the Rockaway Park site. Although not complete, KeySpan records indicate the following: Well No. 1 was constructed in about 1905 to a depth of 949 feet below grade and was taken out of service between 1918 and 1920. Well No. 2 was constructed in 1915 to a depth of over 815 feet below grade but was never utilized due to defective construction which allowed salt water to enter the casing. Well No. 3 was constructed in 1916 to a depth of 810 feet below grade. Well No. 4 was constructed in 1923 to a depth of 970 feet below grade and failed in April 1936. Similarly, well No. 5 was constructed in 1936 to a total depth of approximately 947 feet below grade. It should be noted that KeySpan records did not indicate the exact locations of these wells.

According to KeySpan documentation, well Nos. 1, 2 and 4 were abandoned by plugging the well screens with a mixture of heavy clay and liquid mud to a depth of 800 feet below grade. A cement plug was constructed within the well casing just above the well screen utilizing between 30 and 47 bags of cement per well. After the plug hardened, cement was used to fill each well to near grade surface. Well Nos. 1, 2 and 4 were abandoned on January 29, 1937, January 15, 1937 and December 31, 1936, respectively. According to KeySpan documentation, well Nos. 3 and 5 were also abandoned on unknown dates utilizing a similar procedure as described above.

1.5 Project Background

1.5.1 Land Use and Demographics

Land use at and adjacent to the Rockaway Park former MGP site includes industrial, commercial and residential uses. The site is zoned M2-1 (manufacturing district) which is consistent with historic land uses. There is a narrow strip of land located north of Beach Channel Drive, formerly owned by KeySpan, which is now owned by the City of New York. A few small automotive repair businesses are located on the Jamaica Bay shoreline to the northwest of the site. Directly west of the site, on the south side of Beach Channel Drive, is a gasoline service

station. All other land usage to the south of the MTA tracks is predominantly residential and commercial.

Jamaica Bay, which borders the peninsula to the north, comprises a significant portion of the Gateway National Recreation Area, which includes the Jamaica Bay Wildlife Refuge. Jacob Riis Park, also part of the Gateway National Recreation Area, is located on the northwestern shore of the peninsula.

The community of Rockaway Park is located within the Borough of Queens as a part of Community District No. 14. This District is comprised of all the communities on the peninsula from Breezy Point to Far Rockaway and the community of Broad Channel. At the time of the 1990 United States Census, Queens County was estimated to have a population of 1,951,598 residents. Queens Community District No. 14 had an estimated 100,596 residents. Of these, 27,286 were under the age of 18 (27%) and 16,842 (16%) were over the age of 65. The population of District No. 14 resided in 34,854 households with the exception of 6,173 persons who resided in group quarters. The estimated population within a 4-mile radius of the site is 63,400 and a population of 4,400 is estimated to live within a 0.25 mile radius of the site (United States Census 1990).

The history of the Rockaway peninsula dates back to 1609 when Henry Hudson and his crew encountered Rockaway peninsula while on an expedition to find the northwest passage to the Orient. At that time, Rockaway peninsula was inhabited by the Mohegan Tribe of the Mohawk Nation and was known as "Reckowacky." Several interpretations of "Reckowacky" are "the place of our own people," "neck of the land" and "place of waters bright." The Dutch purchased the Rockaway peninsula in the late 1630's, only to give up ownership to the English less than 50 years later. The Rockaways changed hands several more times before it was incorporated into the City of greater New York on July 1, 1897. By this time, the Rockaway peninsula was already a prime resort area and was very popular with New York's social elite.

1.5.2 Climate

The Long Island climate is identified as humid continental with a significant maritime influence (Soil Survey of Suffolk County, 1975). Air masses and weather systems mainly originate in the humid continental climate of North America and are tempered by maritime influences originating in the Atlantic Ocean to the south and east, and Long Island Sound to the north. As a result of these influences, Long Island's daily and annual temperatures exhibit a reduced range as compared with inland continental temperatures. Winter temperatures are milder than those of mainland areas at similar latitudes and elevations, while summer temperatures are cooler.

Monthly and yearly precipitation totals as well as wind speed and direction data were obtained from the National Climatic Data Center of the National Oceanic and Atmospheric Administration (NOAA). Measurements were collected from the John F. Kennedy Airport weather station located in Jamaica, New York, approximately 4.5 miles northeast of the former Rockaway Park MGP site. **Table 1-1** shows monthly temperature, average maximum monthly temperature, average minimum monthly temperature and precipitation values for Jamaica, New York, averaged over 30 years.

The average annual temperature for Jamaica, New York is 53.6 degrees Fahrenheit (°F), with average monthly temperatures ranging from a low of 31.2°F in January to a high of 75.5°F in July. Average annual precipitation for Jamaica, New York is 41.59 inches, with the greatest average monthly precipitation occurring in April (3.90 inches), followed by May and July (3.80 inches), June and November (3.65 inches) and March (3.59 inches). The lowest average monthly precipitation occurs in October (2.88 inches), followed by February (3.02 inches) and January (3.17 inches). Much of this precipitation occurs as rain, although in some years, snow accounts for a considerable portion of winter precipitation. Nearby, in Nassau County, annual snowfall averages 27 inches per year (Soil Survey of Nassau County, New York, USDA NRCS, 1987).

TABLE 1-1
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

MONTHLY AVERAGE TEMPERATURE AND PRECIPITATION FOR
JOHN F. KENNEDY AIRPORT, JAMAICA, QUEENS, NY

Month:	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Precipitation (inches)	3.17	3.02	3.59	3.90	3.80	3.65	3.80	3.41	3.30	2.88	3.65	3.42
Temperature (^{o} F)	31.2	32.9	41.0	50.5	60.0	69.4	75.5	74.7	67.6	57.0	47.2	36.6
Average Maximum	39.6	39.8	47.7	54.2	66.1	73.9	78.7	78.0	71.8	63.5	52.7	43.9
Average Minimum	21.9	25.0	36.2	47.1	56.8	66.9	72.2	72.2	64.1	52.4	40.7	26.6

Notes:
* Monthly average temperature (in degrees Fahrenheit) and precipitation data (in inches) from National Climatic Data Center.

Winds are predominantly from the south to south-southwest, with strong westerly to north-northwesterly components between November and April. The John F. Kennedy Airport weather station reports highest sustained wind speeds in March, when sustained wind speeds of 36 to 40 miles per hour (mph) occur 0.1% of the time and originate from the east-northeast (as based on 30 years averaged record). **Table 1-2** summarizes average wind speed for each month as a function of wind direction.

1.5.3 Topography

The Rockaway peninsula is a barrier beach which trends west to southwest into the Atlantic Ocean. The surface of the peninsula is generally flat and is about 10 feet or less above sea level, which is consistent with the topography at the Rockaway Park former MGP site (see **Figure 1-3**). The maximum elevation attained is 23 feet above mean sea level (msl) in Far Rockaway. Site elevation ranges from approximately 6.5 feet above msl in the central, eastern and southeastern portions of the site to about 9 feet msl in the northern portion of the site, and 11 feet above msl in the southern portion of the site.

1.5.4 Storm Water

The Rockaway Park former MGP Site is located directly adjacent to Jamaica Bay. The drainage pattern, indicated on the flood maps for the site and the local vicinity, indicate that storm water generally drains to the southeastern corner of the site. However, there are a few areas of lower elevation located on the central portion of the site that accumulate storm water. From the southeast corner of the site, storm water flows south along Beach 108th Street, under a right-of-way of the New York City Transit System, and then follows the New York City storm water drainage system westward adjacent to Rockaway Beach Boulevard to Beach 116th Street. At that point, storm water flows northward to Jamaica Bay. The storm water flow patterns described above is collected and conveyed within New York City storm/sewer sewers. The average 1-year 24-hour rainfall was estimated from available data to be 2.75 inches.

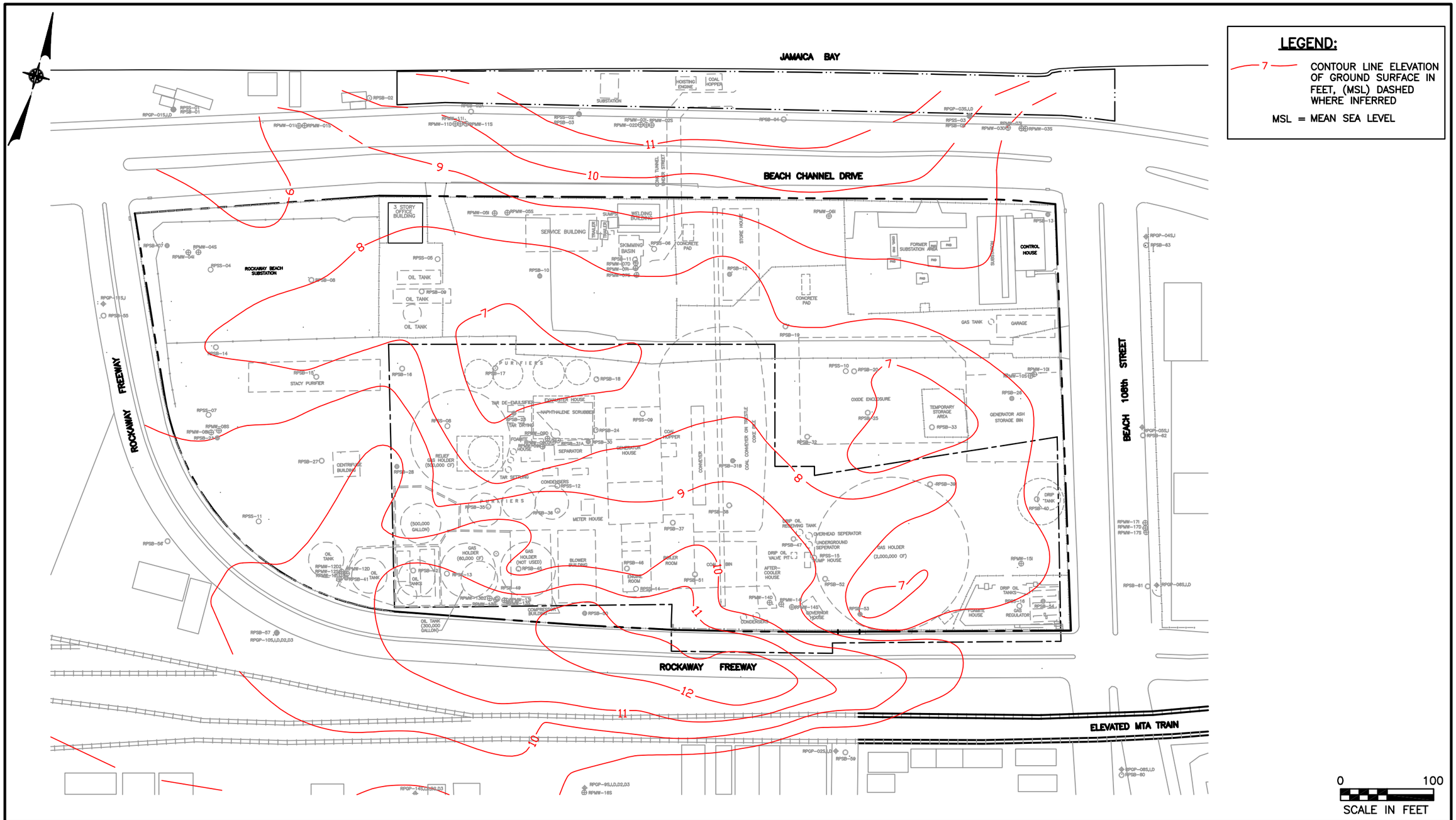
TABLE 1-2
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

AVERAGE MONTHLY WIND SPEED BY DIRECTION AND PERCENT DURATION FROM EACH DIRECTION FOR JOHN F. KENNEDY AIRPORT, JAMAICA, QUEENS, NY

Month	January		February		March		April		May		June		July		August		September		October		November		December	
Direction	(mph)	%	(mph)	%	(mph)	%	(mph)	%	(mph)	%	(mph)	%	(mph)	%	(mph)	%	(mph)	%	(mph)	%	(mph)	%	(mph)	%
N	11.5	*6.9*	13.2	*10.3*	13.4	*10.4*	12.7	*7.9*	11.6	*5.9*	11.3	*6.0*	9.3	*5.2*	10.4	*5.9*	10.5	*7.9*	11.1	*8.6*	11.6	*7.6*	12.4	*9.2*
NNE	11.2	*4.0*	11.3	*6.0*	12.1	*5.8*	11.8	*4.7*	11.0	*4.5*	10.5	*4.0*	8.9	*4.0*	9.9	*4.7*	9.7	*6.2*	10.6	*5.7*	10.7	*5.0*	11.5	*6.1*
NE	10.9	*6.4*	10.2	*6.0*	11.2	*5.3*	11.5	*5.7*	10.2	*5.5*	9.0	*4.0*	8.4	*4.2*	8.7	*6.2*	8.6	*6.6*	10.0	*5.1*	9.8	*5.3*	10.4	*5.7*
ENE	9.7	*5.4*	9.4	*5.1*	11.8	*5.0*	11.0	*5.5*	9.7	*5.4*	8.3	*3.2*	7.3	*4.1*	8.3	*5.6*	8.5	*5.9*	8.2	*4.4*	8.7	*4.3*	9.1	*4.7*
E	8.9	*3.4*	10.3	*4.9*	10.5	*5.3*	10.1	*6.1*	9.1	*6.4*	8.7	*4.8*	7.2	*5.0*	8.0	*3.6*	8.7	*4.4*	9.0	*3.9*	8.7	*3.4*	11.3	*3.7*
ESE	7.7	*1.0*	8.1	*1.5*	8.5	*3.1*	8.9	*4.0*	8.8	*4.4*	8.4	*2.9*	7.8	*3.5*	8.0	*2.6*	9.0	*2.6*	8.2	*1.9*	10.0	*2.4*	9.4	*1.0*
SE	9.9	*1.2*	8.8	*0.8*	9.5	*2.6*	9.5	*3.2*	9.2	*4.2*	8.1	*2.4*	8.5	*3.1*	9.2	*2.0*	8.9	*2.0*	9.7	*2.1*	10.8	*1.4*	9.2	*0.9*
SSE	8.7	*1.3*	9.1	*1.3*	10.7	*3.9*	10.2	*5.2*	9.3	*4.8*	8.7	*3.0*	8.9	*4.6*	9.3	*3.4*	9.4	*3.4*	10.1	*2.9*	11.7	*1.8*	10.7	*1.3*
S	10.8	*5.4*	10.6	*5.9*	12.3	*12.2*	12.1	*15.1*	11.3	*15.2*	11.6	*19.5*	10.7	*18.6*	10.9	*17.3*	10.8	*12.4*	10.8	*9.4*	11.6	*7.7*	10.4	*3.6*
SSW	10.2	*4.7*	10.4	*4.4*	10.5	*5.1*	11.0	*6.1*	10.5	*9.6*	10.8	*12.8*	10.2	*11.9*	10.4	*11.9*	10.7	*9.4*	10.4	*7.3*	10.3	*6.2*	10.5	*3.6*
SW	9.8	*4.5*	9.3	*4.3*	9.1	*3.2*	9.1	*3.5*	9.2	*4.7*	8.8	*6.8*	8.7	*7.9*	8.5	*8.8*	9.2	*7.1*	9.1	*6.7*	9.3	*6.3*	9.1	*4.0*
WSW	10.4	*8.1*	10.3	*6.9*	10.4	*4.8*	10.6	*4.7*	10.3	*6.3*	9.9	*8.4*	9.3	*9.0*	9.2	*8.5*	9.5	*7.9*	10.0	*8.5*	10.2	*9.6*	10.0	*8.6*
W	13.5	*14.3*	13.0	*10.0*	13.2	*6.3*	12.4	*5.7*	10.9	*6.6*	10.7	*6.8*	9.4	*6.5*	9.7	*6.4*	10.2	*7.1*	11.3	*9.9*	13.0	*11.9*	12.8	*13.0*
WNW	15.8	*11.2*	15.7	*9.0*	16.1	*6.0*	14.8	*5.6*	12.2	*3.1*	11.3	*3.6*	10.7	*2.7*	10.9	*3.0*	11.7	*3.7*	13.1	*6.4*	14.9	*8.9*	15.1	*10.3*
NW	15.5	*10.9*	16.0	*10.6*	15.6	*9.5*	15.2	*7.0*	13.2	*4.4*	12.4	*4.1*	11.6	*3.3*	11.7	*3.4*	11.9	*4.8*	12.4	*6.5*	15.5	*8.4*	14.9	*11.2*
NNW	13.8	*8.6*	15.5	*10.6*	14.0	*8.9*	13.8	*7.3*	13.2	*5.5*	12.8	*5.2*	11.0	*4.1*	11.2	*4.2*	11.9	*6.1*	12.3	*7.1*	13.7	*7.5*	14.4	*10.6*
Weighted Avg.	12.0	---	12.2	---	12.1	---	11.5	---	10.3	---	10.2	---	11.0	---	9.5	---	9.8	---	10.3	---	11.5	---	12.0	---
% Calm	---	*2.7*	---	*2.3*	---	*2.6*	---	*2.8*	---	*3.6*	---	*2.6*	---	*2.4*	---	*2.4*	---	*2.3*	---	*3.8*	---	*2.2*	---	*2.3*

Notes: Wind Speed given by direction in miles per hour (mph).
Percent (%) duration from each direction is in *italics.*
Summary gives average monthly wind speed (normal font) and % of time winds are calm (*italics*).

Source: National Climatic Data Center



ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

TOPOGRAPHIC MAP

1' CONTOUR INTERVALS

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 1–3

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1.5.5 Surface Water

There are no naturally occurring or manmade surface water bodies within the Rockaway Park former MGP site. However, the area is bordered to the north by Jamaica Bay and to the south by the Atlantic Ocean.

The New York State Department of Environmental Conservation (NYSDEC) surface water classification for Jamaica Bay is SB. The classification indicates that the water body can be utilized for primary and secondary contact recreation and fishing but restricts commercial shellfishing. The NYSDEC water classification for the Atlantic Ocean is SA. This classification indicates that the water body can be utilized for shellfishing, primary and secondary contact recreation and fishing. Both of these classifications are suitable for fish propagation and survival. Jamaica Bay is not utilized as a drinking water supply.

1.5.6 Regional Soil Classifications

The Natural Resources Conservation Service (former Soil Conservation Service) of the United States Department of Agriculture (USDA) classifies site soil as a combination of Bigapple and Hooksan soil map units (Soil Survey for New York City, New York, unpublished). The Bigapple soil unit consists of human made soil formed in dredge materials and contains former tidal marshes. The Hooksan soil unit consists of natural sandy (eolian) soil with natural landscapes formed by shoreline dynamics and may contain some human modifications in the surface and subsurface layers. Similar soil types are mapped for areas surrounding the site.

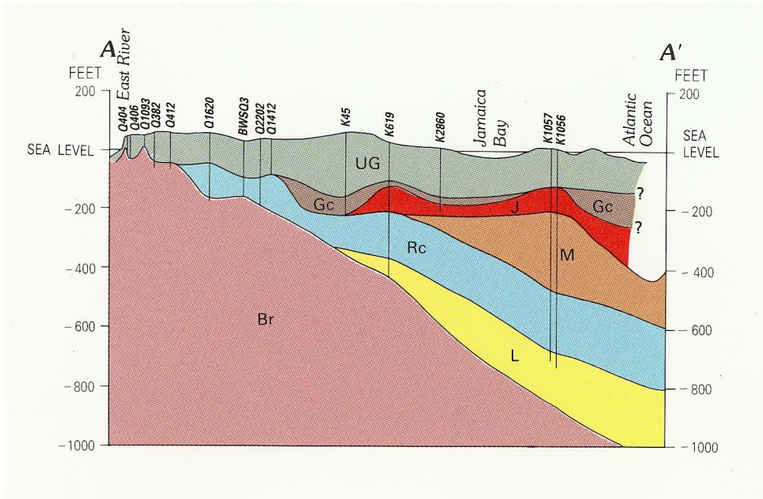
1.5.7 Regional Geology

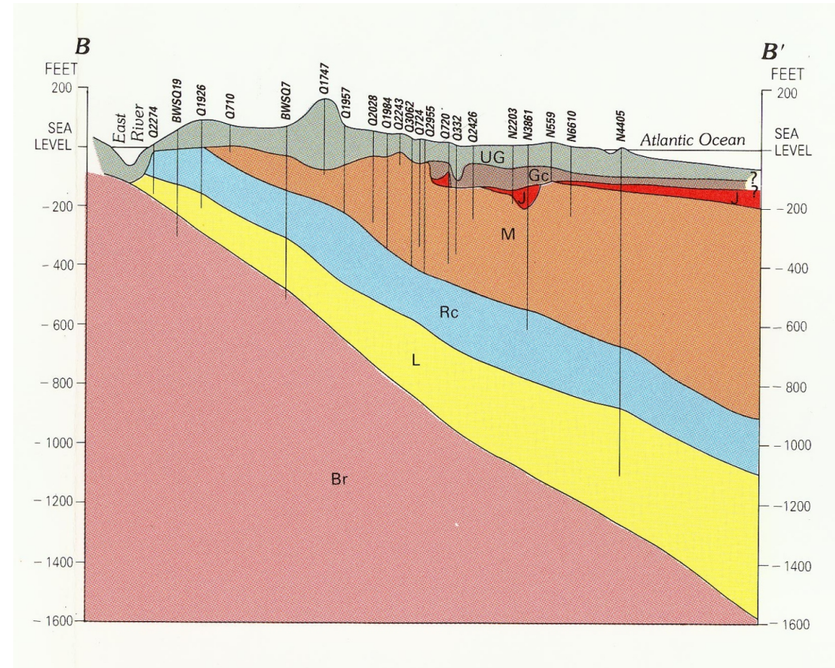
Long Island is within the Atlantic Coastal Plain geomorphic province. From youngest to oldest, geologic units comprising Long Island consist of Holocene-aged beach, pond, stream and marsh deposits, Pleistocene-aged glacio-fluvial deposits and thick sequences of unconsolidated Cretaceous-aged shallow marine and terrestrial sediments overlying a southeastward-sloping bedrock surface. Bedrock outcrops in Queens, the Bronx, Westchester, Manhattan and New

Jersey consist of mainly Cretaceous-aged sedimentary units, Triassic-aged redbeds and lava flows, and Cambrian-aged metamorphic rocks. In the vicinity of the Rockaway Park former MGP site, unconsolidated deposits overlying bedrock are approximately 980 feet thick (Smolensky, Buxton and Shernoff, 1989). **Figure 1-4** (adapted form Smolensky, Buxton and Shernoff, 1989) presents two north-south-trending geological cross sections of Long Island. The Rockaway Park former MGP site is located midway between the two section lines, near their southern extent.

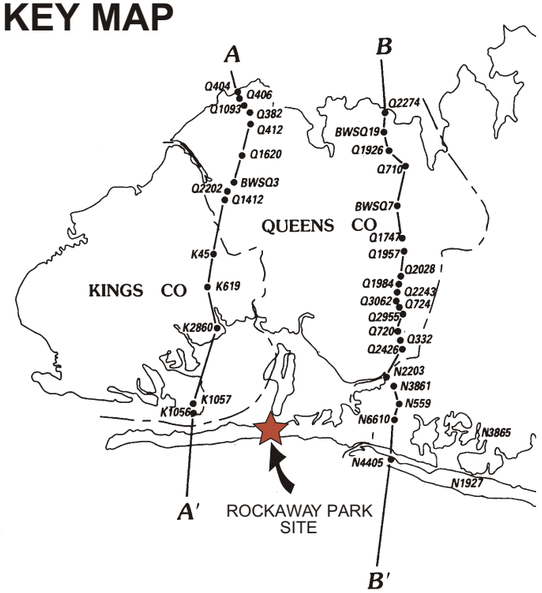
From oldest to youngest, Long Island's Cretaceous unconsolidated deposits include the Raritan formation and the overlying Matawan Group-Magothy formation. During the Cretaceous period, sediments derived from the eroding Appalachian Highlands were transported by streams to low-lying coastal areas. There they formed shallow marine, deltaic, estuarine, lacustrian, and fluvial deposits. Cretaceous sea level fluctuations resulted in parts of Long Island being alternately emergent and submergent. Sediments were generally eroded during emergent periods and deposited during submergent periods, resulting in several unconformities in the deposits. The Lloyd Sand member of the Raritan formation and the Matawan Group-Magothy formation incorporate significant sequences of sand and gravel, often interbedded with silty and/or clayey layers and lenses, with lignite and pyrite common in the Magothy deposits. Near Rockaway Park, the Lloyd Sand and the Magothy deposits are each approximately 250 feet thick. The upper clay member of the Raritan formation which separates the two units is approximately 200 feet thick.

During Pleistocene glaciation, Cretaceous deposits were intensely eroded by ice and meltwaters. The high-energy glacial environment carved an irregular surface into the older deposits, producing undulating hills and valleys over which Pleistocene glacio-fluvial deposits were veneered as till and outwash. In the vicinity of the Rockaway Park former MGP site, a narrow, approximately 150 to 200-feet deep southwest-trending valley was eroded into the top of the Magothy deposits (Smolensky, Buxton and Shernoff, 1989). This erosional trough is the southern reach of an ancient channel that extends roughly north-south through most of central and central-coastal Queens. It was subsequently filled with early Pleistocene-aged Jameco Gravel and with later Pleistocene Upper Glacial outwash deposits.





KEY MAP



LEGEND

UG	Upper Glacial Aquifer
Gc	Gardiners Clay
J	Jameco Aquifer
M	Magothy Aquifer
Rc	Raritan Confining Unit
L	Lloyd Aquifer
Br	Bedrock

N2203

WELL AND NUMBER - Vertical line indicates depth of borehole or well. Prefix letter (K, Q or N) indicates Kings, Queens or Nassau County.

Hydrogeologic Contact

0 5 10 MILES

0 5 10 KILOMETERS

VERTICAL SCALE IS GREATLY EXAGGERATED
NATIONAL GEODETIC VERTICAL DATUM OF 1929

SOURCE: USGS, HA-709

Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.
RLA/DWG/KEYSPAN/ROCKAWAYCROSSECTIONS(8/28/00)

ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

REGIONAL HYDROGEOLOGIC CROSS SECTIONS OF WESTERN LONG ISLAND, NEW YORK

FIGURE 1-4

In the vicinity of the Rockaway Park former MGP site, an approximately 50-foot thick sequence of the Pleistocene-aged Jameco Gravel directly overlies older Magothy deposits while an approximately 30 to 50-foot thick Gardiner's Clay unit overlies the Jameco Gravel. The Gardiners Clay is present along much of southern Long Island; however, in certain locales it is absent, including an area east of the site, between the Cross Bay Bridge and Far Rockaway, and west of the site, near the mouth of Jamaica Bay. Overlying the Gardiners Clay and Jameco Gravel are the Upper Glacial outwash deposits. Outwash sands and gravels are approximately 200 feet thick near the site and incorporate local layers and lenses of finer materials (Perlmutter, et al., 1959).

Near the Rockaway Park site, Holocene or recent deposits overlie the Upper Glacial materials and reach thicknesses of up to 40 feet. These include artificial fill, organic, shell-bearing mud, silt, clay, peat, and wind and wave-deposited sands, gravels and shell fragments.

Based on prior investigations conducted at the Rockaway Park former MGP site, much of the site is directly underlain by fill materials. Fill consists mostly of sand and gravel with minor occurrences of silt and clay, and varying amounts of brick, concrete, wood, cinders, clinkers, coal and ash. Coal tar has also been found in isolated areas of the fill. Additionally, a number of concrete slabs and other subsurface structures associated with the former MGP facility are located throughout the property.

1.5.8 Regional Hydrogeology

The saturated sands and gravels of the Lloyd, Magothy and lower part of the Upper Glacial deposits form Long Island's three major aquifers. Along with the locally present Jameco aquifer, these constitute Long Island's Sole Source Aquifer System, as designated by the Environmental Protection Agency (EPA) pursuant to Section 1424(e) of the Safe Drinking Water Act. However, groundwater within the Rockaway Peninsula contains relatively high concentrations of salt due to the mixing with sea water. As a result, the Upper Glacial, Magothy and Jameco aquifers are not used as water supplies in the Rockaway Park area. Due to its

extreme depth, the Lloyd aquifer remains relatively free of salt water mixing and remains suitable for use as a water supply (USGS Water Supply Paper 2498).

Within the southern portions of Queens County, groundwater flow in the Upper Glacial aquifer which is under water table conditions, is generally to the south with groundwater discharging to Jamaica Bay (USGS Water Supply Paper 2498). Specific information regarding the regional flow of groundwater within Rockaway Peninsula is not available. However, it is assumed that groundwater flows north towards Jamaica Bay within the northern portions of the Peninsula and south towards the Atlantic Ocean in the southern portions. The Gardiners Clay, where present, serves as a confining layer, separating the Upper Glacial aquifer from the underlying Magothy and/or Jameco aquifers thereby limiting vertical movement of groundwater.

The Magothy and Jameco aquifers are hydraulically connected near the Rockaway Park site. In the Jameco and upper/middle Magothy aquifers, groundwater flow is roughly horizontal, except along coastal areas where strong upward flow components predominate (Franke and Cohen, 1972). Groundwater flow at the base of the Magothy aquifer follows the slope of the underlying Raritan clay before flowing upward to discharge into the Atlantic Ocean. Below the Magothy aquifer, the thick upper clay member of the Raritan formation behaves as an aquitard, inhibiting groundwater flow between the Magothy and the underlying Lloyd aquifer.

Hydraulic conductivities within Upper Glacial outwash deposits are high, ranging from approximately 270 feet per day for horizontal flow to 27 feet per day for vertical flow. The semipermeable Gardiners Clay has an average vertical hydraulic conductivity of approximately 0.001 feet per day, and forms an aquitard, inhibiting flow from the upper Glacial aquifer into the Jameco-Magothy aquifer. The Jameco Gravel exhibits high hydraulic conductivities of 200-300 feet per day (horizontal) and 20-30 feet per day (vertical). Average hydraulic conductivities in the Magothy aquifer are approximately 50 feet per day (horizontal) and 1.4 feet per day (vertical). The Raritan Clay, separating the Magothy from the Lloyd aquifer, exhibits hydraulic conductivities of 0.01 feet per day (horizontal) and 0.001 feet per day (vertical) (N.E. McClymonds and O.L. Franke, 1972; and McClymonds and Franke, 1970). Within the Lloyd

aquifer, horizontal hydraulic conductivity is approximately 40 feet per day and vertical conductivity is approximately 4 feet per day. (Smolensky, Buxton and Shernoff, 1989).

1.5.9 Potable Water Supply

Groundwater within the Rockaway Peninsula contains relatively high concentrations of salt due to the mixing with sea water. As a result, the Upper Glacial, Magothy and Jameco aquifers are not used as water supplies in the Rockaway Park area. Due to its extreme depth, the Lloyd aquifer remains relatively free of salt water mixing and remains suitable for use as a water supply (USGS Water Supply Paper 2498). It should be noted that the Lloyd aquifer provides public water supply for parts of southeastern Queens located north of the Rockaway Park site. However, in the vicinity of Rockaway Park, public water is supplied by a series of aqueducts from a watershed located 125 miles north of New York City, and not from local groundwater resources.

Based on a review of available records at the NYSDEC, there are no public or private water supply wells, registered with the NYSDEC within a 2-mile radius of the site. In addition, representatives of the New York City Department of Environmental Protection (NYCDEP), New York City Department of Health (NYCDOH) and New York State Department of Health (NYSDOH) indicated that their records did not include any private water supply wells located in the vicinity of the Rockaway Park site.

1.6 Environmental Database Search

In order to identify other potential sources of chemical constituents with the study area that may have impacted the air, water or soil quality of the site and surrounding properties, a record search of federal and state environmental databases was conducted. The results of this search are presented in **Appendix A**. The locations of sites where environmental concerns exist within 1/4-mile of the former MGP site are presented in **Figure 1-5**. Due to the extent of the Rockaway Park site, historic contamination incidents located within 1/4-mile of the site were reviewed.

Based on the database results, 45 potential areas of environmental concern are identified within 1/4-mile of the site. **Table 1-3** summarizes information pertaining to each of these sites.

The environmental database search identified the Rockaway Park former MGP Site as a NYSDEC Inactive Hazardous Waste Site, a CERCLIS (Federal Comprehensive Environmental Response, Compensation and Liability Information System) site, a New York State Hazardous Substance Waste Disposal Site and a Hazardous Waste Generator. In addition, the site is listed as a Historic Utility Facility. Off-site areas of environmental concern located within a one quarter mile radius of the former MGP site are discussed below.

One active tank failure was identified approximately 930 feet to the west of the Rockaway Park site. On June 1, 1999, the Gaseteria gas station, located at 113-10 Beach Channel Drive, detected contamination during groundwater and soil testing. The NYSDEC found 2 gallons of a tar-like substance in the "service box" presumably located on the Gaseteria site. According to the database, a cleanup was performed at the site; however, the NYSDEC has not yet formally closed the spill number associated with this tank failure.

The Mobil gas station, located approximately 585 feet to the west-northwest of the site, at 112-01 Beach Channel Drive, reported a spill of less than 1 gallon of petroleum gasoline on October 17, 1990, due to a line test failure. Although not mentioned as part of the environmental database search, it should be noted that in 1995, the Mobil Corporation renovated its retail gasoline service station located on 112-01 Beach Channel Drive. The service station is separated from the former MGP site by Rockaway Freeway. During the renovation, subsurface contaminated material was discovered at the station. Based on observation and chemical analysis, it was determined to be consistent with coal gasification wastes. As part of the renovation, the waste material was excavated for proper off-site transportation and disposal by Mobil. The origin of the waste was not determined.

NPL/CERCLIS/NYSDEC Inactive Hazardous Waste Disposal Site

Hazardous Substance Waste Disposal Site

Chemical Storage Facility

Wastewater Discharge ***

Hazardous Material Spill

Hazardous Waste Generator, Transp.

Historic Utility Site

Petroleum Bulk Storage Facility

Railroad Tracks

Current Site Location

Waterbody

1/4 Mile Radius

SOURCE: TOXICS TARGETING, INC. AUGUST 10, 2000

RLA/KEYSPAN/ROCKENVDATAMAP(8/30/00)

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

ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

AREAS OF ENVIRONMENTAL CONCERN WITHIN ONE QUARTER MILE RADIUS OF SITE

FIGURE 1-5

TABLE 1-3
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

IDENTIFIED AREAS OF ENVIRONMENTAL CONCERN
WITHIN A ONE QUARTER MILE RADIUS OF
THE FORMER MGP SITE

Map ID and Area of Concern Address		App. Distance From Site/ Direction	NYSDEC SPILLS NO. FOR UST/LUST/SPILLS OR SITE REGISTRY/ID	NYSDEC IHWS	CER-CLIS	HSWD	ATF	ATTF	AHS	CTTF	CSS	C/P BSS	HWGT	WDF	HUF	RECORD DATE	Summary Report Findings/Key Issues
5	Gaseteria 113-10 Beach Channel Drive Rockaway Park, NY 11694	931 feet West	9904951				X									6/1/99	Petroleum product spill, 2 gallons of tar-like substance in service box; willing RP to send report of 3 borings to groundwater to NYSDEC
9	Mobil Gas Station 112-01 Beach Channel Drive Rockaway Park, NY 11694	585 feet West-Northwest	9007832					X								10/17/90	Line test failure <1.0 gallons gasoline spilled
10	107-10 Beach Channel Drive Rockaway Park, NY 11694	1295 feet Southeast	9504157					X								7/6/95	Test failure <1.0 gallons #4 fuel oil spilled
12	110th and Beach Channel Drive Rockaway Park, NY 11694	377 feet North	9708581						X							9/12/97	Reported transformer oil spill related to offline transformer
13	112-10 Beach Channel Drive Rockaway Park, NY 11694	698 feet West-Northwest	9002300						X							5/29/90	Strong gasoline odor detected in ground-water during excavation for new tank . Sample obtained for analysis. Results unreported.
14	NYDEP Rockaway Water Plant 106-21 Beach Channel Drive Rockaway Park, NY 11694	1182 feet East-Northeast	9606528						X							8/21/96	Encountered contaminated soil during an UST removal.
19	109-38 Rockaway Beach Blvd. Rockaway Park, NY 11694	390 feet South-Southeast	449														Unknown gallons of spilled petroleum Former school bus lot
22	111-14 Beach 112th Street Rockaway Park, NY 11694	1235 feet South	8705982							X						11/5/93	20K tank failed test with leak rate of .23 gallons/hour; Closed 11/5/93
24	112-10 Beach Channel Drive Rockaway Park, NY 11694	698 feet West-Northwest	9002213								X					5/25/90	Gasoline-contaminated soil and ground-water discovered during excavation at gas station. Closed 6/3/90
30	110th & Beach Channel Dr Rockaway Park, NY 11694	409 feet Northwest	9011891								X					2/12/91	Report of Sunoco personnel pumping gas into Jamaica Bay (6 buckets) Closed 3/30/95
31	112-01 Beach Channel Drive Rockaway Park, NY 11694	585 feet West-Northwest	9312513								X					1/24/94	Response to leak detector alarm Closed 9/6/94
32	Mobil Oil Corp. 112-10 Beach Channel Drive Rockaway Park, NY 11694	698 feet West-Northwest	9500205								X					4/5/95	3 gallons gasoline spilled and recovered with absorbent Closed 4/5/95
33	112-10 Beach Channel Drive Rockaway Park, NY 11694	701 feet West-Northwest	9206808								X					9/13/92	50 gallons gasoline spilled during boat over-fill. Closed 9/13/92
35	Beach Channel Dr & Beach 113 Rockaway Park, NY 11694	825 feet West	9500206								X					4/7/95	150 gal gasoline spilled into sewer during filling tank overfill at gas station Closed 4/6/95
36	Beach 113 St & Beach Channel Dr Rockaway Park, NY 11694	825 feet West	9104100								X					7/16/91	Gasoline leak from dispensing hose into water near wildlife refuge during boat fueling. Closed 7/17/91
37	Joe's Corp. 113-10 Beach Channel Drive Rockaway Park, NY 11694	931 feet West	8607261								X					2/26/87	10 gals. gasoline spilled on the ground. Not recovered. Closed 2/26/87
38	Rockaway Sewage Plant 106-21 Beach Channel Drive Rockaway Park, NY 11694	1182 feet East-Northeast	9810102								X					10/1/98	20 gallons hydraulic oil spilled and recovered. Closed 11/10/98
39	114-10 Beach Channel Drive Rockaway Park, NY 11694	1198 feet West	1370								X					5/3/00	100 gal transformer oil spilled and cleaned same day. Closed 5/8/00
40	107-10 Shore Front Parkway Rockaway Park, NY 11694	1295 feet Southeast	9404454								X					6/30/94	50 gal # 6 fuel oil leaked from RR car Closed 6/30/94
41	Public School 225 190 Beach 110th Street Rockaway Park, NY 11694	498 feet Southeast	2-353159									X					8,000 gals. Fuel Oil AST Temporarily out of service.

TABLE 1-3
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WITHIN A ONE QUARTER MILE RADIUS OF
THE FORMER MGP SITE

Map ID and Area of Concern Address		App. Distance From Site/ Direction	NYSDEC SPILLS NO. FOR UST/LUST/SPILLS OR SITE REGISTRY/ID	NYSDEC IHWS	CER-CLIS	HSWD	ATF	ATTF	AHS	CTTF	CSS	C/P BSS	HWGT	WDF	HUF	RECORD DATE	Summary Report Findings/Key Issues
42, 43, 54	Mobil Oil Corp. SS HKT 112-01 Beach Channel Drive Rockaway Park, NY 11694	589 feet West-Northwest	2-156965 2-478164 NYD986956357									X	X				7 in-service 4K gal unleaded gasoline USTs, 11 removed unleaded gas/fuel oil/ other tanks. No hazardous waste
44, 47	St. Johns Home for Boys 150 Beach 110th Street Rockaway Park, NY 11694	779 feet 984 feet South-Southeast	2-603509 2-258202									X X					1, 3K gallon fuel oil UST 3, 3K gallon fuel oil ASTs
45	Stella Maris High School Beach 112th Street Rockaway Park, NY 11694	921 feet South	2-359505									X					20,000 gallon fuel oil AST (in service)
46	113-10 Beach Channel Drive. Rockaway Park, NY 11694	929 feet West	2-349704									X					Inactive facility, 12 closed 550 gal USTs out of service
48	Rockaway Pollution Control Plant Beach Channel Dr/Beach 106 St Rockaway Park, NY 11694	1182 feet East-Northeast	2-600393									X					1, 1.1 K gal Diesel UST, 2, 15 K gal fuel oil USTs (in service) and 1 closed-in-place 1.1 K leaded gasoline UST
49	Ocean Promenade Nursing Center, Inc. 140 Beach 113th Street Rockaway Park, NY 11694	1218 feet South-Southwest	2-081906									X					1, 10K gallon, vaulted, fuel oil UST
50	Surfside Park # 1 107-10 Shore Road Rockaway Park, NY 11694	1312 feet Southeast	2-117196									X					1 vaulted, 25 K fuel oil UST
52	NYCTA 10911 Beach Channel Drive Rockaway Park, NY 11694	0 feet	NYR000046912										X				No hazardous waste activity reported 1/89-1/99
53	NYC Board of Education 190 Beach 110 St Rockaway Park, NY 11694	498 feet Southeast	NYR000011262										X				250 pounds lead generated 1995
54	Mobil Oil Corp. 112-10 Beach Channel Drive Rockaway Park, NY 11694	589 feet West-Northwest	NYD986956357										X				No hazardous waste activity reported
55	NYNEX Beach 112 St & Rockaway Beach Rockaway Park, NY 11694	603 feet South-Southwest	NYP000910562										X				165 gallons lead, 1993
56	Rockaway WPCP-Manhole W Side Beach 108 St Rockaway Park, NY 11694	644 feet East-Northeast	NYW200026221										X				No hazardous waste activity reported 1/89-1/99
57	Harbor Auto Body, Inc 112-16 Beach Channel Drive Rockaway Park, NY 11694	737 feet West	NYR000062208										X				No hazardous waste activity reported 1/89-1/99
58	Sunoco Service Station 113-10 Beach Channel Drive Rockaway Park, NY 11694	929 feet West	NYD0000707299										X				No hazardous waste activity reported
59	Bell Boy Cleaners 113-13 Beach Channel Drive Rockaway Park, NY 11694	929 feet West	NYD986900280										X				Generated: 4305 lb spent halogenated solvents 1998, 120 lb tetrachloroethylene 1994
60	NYNEX Rockaway beach Blvd & 114 St Rockaway Park, NY 11694	1037 feet Southwest	NYP000931600										X				Generated: 1200 pounds lead, 1996
61	Channel Cleaners 114-11 Beach Channel Drive Rockaway Park, NY 11694	1/8- 1/4 miles West	NYD981086648										X				Generated 780 pounds spent halogenated solvents , 1998
62	Rockaway WPCP Beach Channel Dr & 106 St	1180 feet East-Northeast	NYW000026221										X				No hazardous waste activity reported to NYS 1/89-1/1/99
63	NYDEP Rockaway Water Plant 106-21 Beach Channel Drive Rockaway Park, NY 11694	1189 feet East-Northeast	9606528										X				Generated 55 gal benzene, 1996.

TABLE 1-3
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	Map ID and Area of Concern Address	App. Distance From Site/ Direction	NYSDEC SPILLS NO. FOR UST/LUST/SPILLS OR SITE REGISTRY/ID	NYSDEC IHWS	CER-CLIS	HSWD	ATF	ATTF	AHS	CTTF	CSS	C/P BSS	HWGT	WDF	HUF	RECORD DATE	Summary Report Findings/Key Issues
64	Rockaway Water Pollution Control Plant Beach Channel Drive & 106 Street Rockaway Park, NY 11694	1189 feet East Northeast	2-00231									X					4, 6 K and 4, 12 K ASTs storing sodium hypochlorite
67	Rockaway WTP Beach Channel Drive & 106th Street Rockaway Park, NY 11694	1184 feet East-Northeast	NY0026221 EPA-NYD987010576											X			Municipal sewerage systems Discharge indicator: major
68	Mobil 112-01 Beach Channel Drive Rockaway Park, NY 11694	585 feet West-Northwest	EPA-ID; NYD986956357 State-County CDS ID: 3608100172														Potential uncontrooled emissions <100 tons/yr In compliance for VOC's

NOTES ON SOURCES/ABBREVIATIONS/DEFINITIONS:

NYSDEC	New York State Department of Environmental Conservation
NYSDEC/IHWS	NYSDEC Inactive Hazardous Waste Site
CERCLIS	Federal Comprehensive Environmental Response, Compensation and Liability Information System
NPL	National Priority List for Federal Superfund Cleanup
HSWD	Hazardous Substance Waste Disposal Site (New York State)
ATF	Active Tank Failures
ATTF	Active Tank Test Failures
AHS	Active Haz Spills
CTTF	Closed Status Tank Test Failures
CSS	Closed Status Spills
C/P BSS	Chemical/Petroleum Bulk Storage Sites
HWGT	Hazardous Waste Generators, Transporters
HUF	Historic Utility Facility
WDF	Wastewater Discharge Facilities
AST	Registered Aboveground Storage Tank
UST	Registered Underground Storage Tank
LUST	Leaking Underground Storage Tank Reports
SPILLS	NYSDEC Spills Information Database
K	Abbreviation for one thousand, preceded by multiplier
VOC	Volatile Organic Compound

In addition, the environmental database search identified that the property owner of 107-10 Shorefront Parkway, 1295 feet to the southeast of the site, reported a spill of less than 1 gallon of No. 4 fuel oil on July 6, 1995.

Three active hazardous waste spills were reported within a 1/4-mile radius of the site. The property owner of 110th Street and Beach Channel Drive, located 377 feet side-gradient of the site, reported a transformer being off-line for 13 years with possible unit failure, which may have spilled an unknown quantity of transformer oil. On May 29, 1990, strong gasoline odors were detected in groundwater during a tank excavation located at 112-10 Beach Channel Drive, 698 feet to the west-northwest of the site. The New York City Department of Environmental Protection (NYCDEP), Rockaway Wastewater Treatment Plant located 1,182 feet to the east-northeast of the site reported contaminated soil during excavation of an underground storage tank on August 21, 1996.

One closed tank failure was identified 1,812 feet west-southwest from the site on March 9, 1993. It was reported that 10 gallons of No. 2 fuel leaked from a residential aboveground storage tank at 245 Beach 117th Street. The NYSDEC confirmed cleanup and closed the investigation on March 30, 1995. One closed tank test failure was identified 1,235 feet to the south of the site on October 15, 1987. It was reported that a 20-gallon tank holding No. 2 fuel oil failed an integrity test with a rate of -0.23 gal./hr. After excavation and isolation of the tank from the piping, the tank passed retesting on September 12, 1988. The investigation was closed on November 5, 1993.

There were 11 “closed status” spills identified within a 1/4-mile radius of the site, mainly involving gasoline but also including fuel oil, transformer oil and hydraulic oil. These sites were designated “closed” between 1987 and 2000.

Nine gasoline and fuel oil bulk storage sites and one chemical (sodium hypochlorite) bulk storage site were identified within a quarter mile radius of the site. In addition, 12 hazardous waste generators and one wastewater discharge facility are located within 1/4-mile of the site. Based on a review of the database, these facilities do not appear to be associated with any current

spills or releases nor do they appear to represent significant off-site potential sources of contamination.

1.7 Previous Site Investigations

The following section provides an overview of previous site investigations undertaken at the site. Previous sample locations are shown on **Drawing 1B** which is provided in a map pocket at the end of this section of the report.

1.7.1 December 1989 Site Inspection Report
Performed By: The NUS Corporation Superfund Division

In response to a Long Island Lighting (LILCO) letter of notification dated June 9, 1981 to the United States Environmental Protection Agency (USEPA) regarding MGP sites, the USEPA conducted an on-site reconnaissance and site inspection of the Rockaway Park former MGP site. The purpose of the site reconnaissance and site inspection was to determine the previous and current potential for soil, surface water, and groundwater chemical constituents. During the site inspection (conducted by NUS Corporation for the USEPA), six surface soil samples were collected primarily at locations where previous plant operations occurred. All surface soil samples were analyzed for the chemical constituents found in the USEPA Contract Laboratory Program (CLP). As documented in the report entitled, "Site Inspection Report - Rockaway Park Gas Plant, Rockaway Park, Queens County, New York," dated December 19, 1989, on-site surface soil sample analysis indicated the presence of polycyclic aromatic hydrocarbons (PAHs). The report stated that although several inorganic constituents were detected, lead was detected in all surface soil samples at concentrations ranging from 33.6 parts per million (ppm) to 785 ppm. In addition, a pesticide (4,4-DDT) was detected at one soil surface sample at a concentration of 1.1 ppm. The report recommended that a "listing" site inspection be conducted based on documented chemical constituents present in surficial soil and the fact that the site fence was breached in several locations. The report also concluded that a threat of exposure of on-site chemical constituents exists for a portion of the adjacent resident population. Lastly, the NUS

report stated that remedial action is warranted prior to any additional site use/development activities.

1.7.2 January 1997 Phase I Site Investigation
Performed By: Atlantic Environmental Division/GEI Consultants, Inc.

A Phase I Site Investigation was initiated during October 1995 by Atlantic Environmental Division/GEI Consultants, Inc. (GEI) for LILCO. The objectives of the study, as defined by LILCO, are summarized below:

- Determine the nature/character of any on-site chemical constituents in soil and groundwater;
- Determine the generalized groundwater flow direction at the site;
- Evaluate the potential for chemical constituents to migrate off-site;
- Determine the shallow geology of the site;
- Evaluate the site conditions and determine the imminent risk to site workers and the public;
- Evaluate the potential application of an interim remedial measure (IRM) to the site; and
- Determine the environmental conditions at eight former tank locations.

As part of the field investigation, GEI collected surface and subsurface soil samples, excavated test pits, advanced soil borings, collected groundwater samples, and obtained groundwater level measurements. According to the report entitled, "Phase I Site Investigation Report for the Rockaway Park Former Manufactured Gas Plant Site," dated January 28, 1997, surface soil samples were analyzed for the full Superfund Target Compound List (TCL), Target Analyte List (TAL), physiologically available cyanide (PAC), and total cyanide. Likewise, the subsurface soil samples were analyzed for volatile and semivolatile TCL and TAL constituents. Bulk samples were collected from test pits and analyzed for BTEX and PAHs by means of a microscale solvent extraction (MSE) protocol. Three samples were also analyzed by conventional analytical methods for comparison purposes. Groundwater samples were collected

from six of the eight monitoring wells installed during the investigation and analyzed for BTEX and PAHs by MSE, PAC and total cyanide. One groundwater sample collected from monitoring well GW-04 was also analyzed for TAL and TCL chemical constituents.

As reported by GEI, the results of the Phase I Site Investigation are summarized below:

- Soil exhibited evidence of non-aqueous phase liquid (NAPL) throughout most of the site. Groundwater contained concentrations of BTEX and PAHs constituents;
- Groundwater was found to move toward the south. However, it is likely that tidal influences, buried structures, and retaining walls are impacting the overall groundwater movement at the site;
- Based on sample results along the southern boundary indicating concentrations of BTEX and PAHs, it is likely that the chemical constituents are migrating off-site;
- The shallow geology of the site is comprised of approximately 10 feet of fill consisting of dredge spoils, demolition debris, and combustion products (i.e., ash and clinker) overlaying native sand. Fill unrelated to MGP processes was found in the northwestern portion of the site;
- There was no imminent risk to site employees or the public;
- The former tar separator buried in the southern portion of the site is a likely candidate for an interim remedial measure (IRM); and
- The investigation of the former tank locations was hindered due to the presence of shallow concrete across much of the southwestern part of the site. However, GEI did state that the at-grade tank foundations appeared to be intact.

1.7.3 March 1999 Interim Remedial Measure Study
Performed By: GEI Consultants, Inc.

Most recently, GEI Consultants, Inc. (GEI) conducted an investigation at the Rockaway Park former MGP site to quantify the levels of chemical constituents that may be encountered during possible site construction activities in and around the former electric substation in the northeast area of the site. However, due to the discovery of chemical constituents in this area, the investigation evolved into a study to identify other areas of the site suitable for possible utility operations. As documented in the report entitled, “Interim Remedial Measure Study - Rockaway

Park Former Manufactured Gas Plant - Substation Area - Rockaway, New York," dated March 23, 1999, three major areas of the site were investigated: the area in and around the existing substation, the area of the former 2-Million Cubic Foot Gas Holder, and the northwestern portion of the site. The intent of the Study was to demonstrate that the relocation of the substation to the northwest corner of the site would not negatively impact future remediation of the site. As the GEI report indicates, investigation activities included surface soil sampling, test pit excavations and sampling, Geoprobe sampling, and hollow stem auger (HSA) sampling. Laboratory analysis consisted of varying combinations of BTEX, PAH, total cyanide, pesticide/PCB, grain size, TCL/TAL constituents, total organic carbon (TOC), RCRA metals, and toxicity characteristic leaching procedure (TCLP) for potential waste disposal.

As reported by GEI, the significant findings of the Interim Remedial Measure Study are summarized below:

- The eastern portion of the former MGP site contains concentrations of chemical constituents found at the water table and extends to deeper intervals under the former substation;
- The surface soil in the vicinity of the former substation contains concentrations of PAHs, arsenic, chromium, mercury, and selenium;
- Surface soil between the former substation and the driveway to the south exhibit PAHs and possibly cyanide that would exceed risk-based concentrations;
- There is a significant NAPL interval that, based on one soil sample collected from the NAPL zone, would exceed the regulatory limit for benzene and would be considered characteristically hazardous. This NAPL plume is located beneath the southwestern portion of the former substation and extends to the southwest;
- A second NAPL plume, possibly associated with drip oil or other solvent use, appears to be located in the southeastern portion of the site;
- The former 2-million Cubic Foot Gas Holder base still exists and rests over an area containing chemical constituents in soil;
- The relatively cleaner sands found in the unsaturated zone within the former substation exhibit concentrations of "weathered" PAHs;
- A review of Sanborn maps did not identify any MGP operations in the northwest portion of the site;

- Analytical results for soil samples collected in the northwest portion of the site were not consistent with those expected for a former MGP site; and
- The northwestern portion of the site is the most suitable location for the new electric substation.

1.7.4 August 2000 Substation Investigation Report and Delisting Petition
Performed By: Dvirka and Bartilucci Consulting Engineers

As part of the overall remedial investigation of the entire former MGP site, specific investigation activities were undertaken and completed by D&B in support of a new electric substation to be constructed in the northwest portion of the site. KeySpan also retained the services of Vanasse Hangen Brustlin Inc. to complete a Risk Assessment as a component of the investigation.

The Rockaway Park former MGP facility is an inactive hazardous waste site listed on the New York State Site Registry. As such, KeySpan was seeking to reclassify the northwest portion of the former MGP site in order to construct and operate a new electric substation. The new substation was needed to maintain electric system reliability on the Rockaway Peninsula. Therefore, in order to reclassify the proposed substation area, the Substation Investigation report was prepared in accordance with the site delisting process included in NYSDEC Organization and Delegation Memorandum No. 88-33.

KeySpan had previously conducted a preliminary investigation of soil and groundwater contamination associated with the Rockaway Park former MGP site. However, to fully characterize soil quality in the vicinity of the proposed substation, additional data was obtained in the northwest portion of the site. The specific objectives of the Rockaway Park Substation Investigation were to:

- Conduct an investigation of the proposed electric substation area located in the northwest portion of the site in order to assess subsurface soil conditions;
- Characterize the proposed electric substation area to support efforts to separate this portion of the former MGP site from the ongoing State Superfund Remedial Investigation by way of a Delisting Petition;

- Determine the health risk associated with constructing and operating the proposed electric substation at the Rockaway Park former MGP site; and
- Provide engineering oversight in support of advancing structural soil borings to determine if the soil beneath the proposed electric substation area is suitable for the construction of such a facility.

Field Investigation - Overview

The field program, initiated in October 1999 as part of the Rockaway Park Substation Investigation, consisted of the following:

- Collection and analysis of subsurface soil samples; and
- Advancing structural soil borings.

Subsurface Soil Samples

A total of six soil probes were completed utilizing the Geoprobe system. These soil probes were advanced to a depth of approximately 16 feet below grade surface (bgs) in order to characterize shallow subsurface soil quality beneath the site. The probes were advanced in locations generally to the south of the proposed substation in the event that the "footprint" of the substation would have to be expanded in the future. All of the samples (18 total) were analyzed for BTEX compounds, PAHs, phenols, RCRA metals and cyanide.

Advancing Structural Soil Borings

Seven soil borings were advanced by KeySpan's contractor Soil Mechanics Drilling Corporation (Soil Mechanics) utilizing a hollow stem auger rig. These soil borings were advanced to a depth of approximately 50 feet bgs in order to characterize the structural properties of the soil beneath the proposed location of the new electric substation. D&B provided engineering oversight during all soil boring activities to ensure compliance with the HASP prepared for the overall Rockaway Park former MGP Investigation. In addition, D&B screened and logged all soil samples obtained by the hollow stem auger rig for possible laboratory

analysis. One soil sample that exhibited visual presence of chemical constituents was submitted for laboratory analysis for BTEX compounds, PAHs, phenols, RCRA metals and cyanide.

Summary of Investigation Findings

Based on previous investigations conducted at the Rockaway Park former MGP site, it was determined that the northwest portion of the site was best suited for construction of the new electric substation. To further support substation construction, additional soil samples were collected and structural soil borings were advanced in and around the proposed substation area. In addition, a Risk Assessment was conducted to quantify possible human health risks that may be encountered by construction workers during substation construction.

Field observations made during previous investigations suggest that the northwest portion of the Rockaway Park former MGP site has not been impacted by coal tar and oil. The analytical results generated during these previous investigations indicate that the maximum BTEX concentration was observed in soil boring sample B-13 (8.2-8.5 feet) which exhibited a total BTEX concentration of 31.50 mg/kg. Concentrations of PAHs and CaPAHs from soil probe samples ranged from 0.015 mg/kg to 0.802 mg/kg and non-detect to 0.239 mg/kg, respectively. Similarly, the maximum PAH concentration was observed in soil boring sample B-15 (13-15 feet) which exhibited a PAH concentration of 0.405 mg/kg and a CaPAH concentration of 0.255 mg/kg.

Based on the soil data generated during this investigation program, the maximum total BTEX concentration of 0.469 mg/kg was quantified in soil sample RPSB-66 (10-12 feet). It should also be noted that sample RPSB-66 (14-16 feet) exhibited a total BTEX concentration of 0.234 mg/kg, indicating that the BTEX concentration is decreasing with depth. A maximum concentration of total PAHs of 281.24 mg/kg and a total CaPAHs concentration of 91.90 mg/kg was shown in soil sample RPSB-67 (2-4 feet). Results for soil sample RPSB-67 (10-12 feet) indicate that PAHs and CaPAHs (i.e., 0.41 and 0.21 mg/kg, respectively) decrease significantly with depth. These results suggest that the concentrations of PAHs detected in the 2 to 4-foot interval of sample RPSB-67 are limited to shallow subsurface soil.

It should be noted that the soil probes advanced during the Substation Investigation program by D&B were located in areas generally to the south of the proposed substation location. These probes were advanced to further characterize the soil in the event that the substation "foot-print" would have to be expanded to the south. Currently, KeySpan does not plan to expand the proposed substation "foot-print." Consequently, the area in which the Substation Investigation probes were advanced are currently located in the portion of the Rockaway Park former MGP site that will be fully investigated in accordance with the Order on Consent with the NYSDEC.

In order to further support the construction of the new electric substation, KeySpan Corporation retained VHB to conduct a Human Health Risk Assessment. The Risk Assessment identified chemicals of potential concern related to the former MGP activities, identified potential human pathways of exposure for on-site construction workers, and estimated the potential human health risks associated with the identified exposure pathways. The Risk Assessment conservatively utilized data generated from historical investigations as well as the soil probe data from the current substation investigation located to the south of the proposed substation area.

The Risk Assessment indicated that the average and reasonable maximum exposure case cancer risks for the on-site construction worker exposure to subsurface soil were two cases of cancer in 10 million and one case of cancer in 1 million, respectively. These risk values are at or below the lower end of EPA's cancer risk range of 1E-06 (0.000001 or one-in-one million persons) and thus do not pose a carcinogenic health threat for the construction worker. In addition, the Risk Assessment also indicated that the average and reasonable maximum exposure case noncancer hazard indices for the on-site construction worker exposure to subsurface soil were 0.005 and 0.04, respectively. Both of these noncancer hazards are well below EPA's acceptable hazard index of 1.0. The Risk Assessment concluded that the subsurface soil exposure for the construction worker at the proposed substation location of the Rockaway Park former MGP site does not pose an unacceptable carcinogenic health threat or noncancer health hazard.

It should also be noted that, in a letter dated October 13, 2000, the NYSDEC has formally approved KeySpan's request to reclassify the boundaries of the northwest portion of the Rockaway Park former MGP site on the Registry of Inactive Hazardous Waste Disposal Sites.

1.7.5 June 2000 Underground Feeder Cable Investigation
Performed By: Dvirka and Bartilucci Consulting Engineers

As part of the overall remedial investigation of the entire site, specific investigation activities were undertaken by D&B to support the installation of underground feeder cables to be constructed in the area which extends from the corner of Beach 108th Street and Rockaway Freeway, along the south side of Rockaway Freeway to the intersection of Rockaway Freeway and Beach Channel Drive and across Beach Channel Drive to the north. The underground feeder cables are required to support a new electric substation to be constructed in the northwest portion of the Rockaway Park former MGP site.

The specific objectives of the investigation were to:

- Conduct an investigation of the area proposed for the installation of the underground feeder cables to assess subsurface soil conditions;
- Characterize the soil within the proposed area of the underground feeder cables for the purposes of waste disposal and assessing general construction worker health and safety issues; and
- Characterize the soil gas within the proposed area of the underground feeder cables.

Approach

KeySpan retained D&B to perform a limited investigation at the Rockaway Park former MGP site in support of the design and construction of a new underground feeder cables along Rockaway Freeway. The scope of work for the investigation included the completion of 13 soil probes to a depth of approximately 12 feet bgs and nine soil vapor probes to assess the proposed construction area and concerns regarding soil disposal and construction worker health and safety.

The analytical results were utilized to evaluate disposal scenarios for impacted soil excavated during construction, as well as determine the level of personal protective equipment required during construction.

Field Investigation

Work performed at the area of the proposed underground feeder cables included:

- Collection and analysis of subsurface soil samples; and
- Collection and analysis of soil vapor samples.

Subsurface Soil Sampling

A total of 13 soil probes were advanced utilizing the Geoprobe system. These soil probes were advanced to a depth of approximately 12 feet bgs in order to characterize shallow subsurface soil quality.

Soil samples were collected continuously from grade using Geoprobe equipment to a depth of 12 feet bgs at all locations. Based on field observations, three soil samples were collected at each location and retained for laboratory analysis. All samples were screened utilizing a photoionization detector (PID); inspected for staining, discoloration, ash, presence of NAPL; checked for odors; and logged by a geologist.

A total of 38 soil samples were analyzed for BTEX compounds utilizing USEPA Method 8020, PAHs utilizing USEPA Method 8270, phenols utilizing USEPA Method 9065 and total cyanide utilizing USEPA Method 9012. In addition, 13 soil samples, one from each sample location, were analyzed, utilizing the TCLP procedure, for RCRA organics and inorganics.

Soil Vapor Sampling

A total of nine soil vapor probes were advanced utilizing the Geoprobe system. These soil vapor probes were advanced to a depth of approximately 3 to 4 feet bgs in order to accurately sample for potential vapors trapped within the soil matrices.

Each sample was collected by driving a decontaminated stainless steel soil vapor probe approximately 3 to 4 feet bgs. The soil vapor probes were then purged using a vacuum compressor for approximately 10 minutes. A PID was attached to the sample port for screening purposes until the readings stabilized. After the stabilization period, the probe was connected to a laboratory supplied Summa canister. Summa canisters consist of stainless steel vessels containing granular activated carbon that have been cleaned and certified contaminant free by the contract laboratory. Each Summa canister was shipped under a high vacuum to ensure that the canister remains free of contaminants prior to use. After connecting the Summa canister to the soil vapor probe, a valve on the canister was opened and a vapor sample was conveyed into the canister. After collecting the vapor sample, the valve was closed and disconnected from the soil vapor probe and the Summa canister was sent to the laboratory for analysis. A total of nine soil vapor samples were analyzed for BTEX and naphthalene by USEPA Method TO-14.

Summary of Investigation Findings

Soil Sampling – BTEX Analysis

Benzene, toluene, ethylbenzene and xylene (BTEX) compounds were detected at concentrations ranging from 0.001 mg/kg to 136.2 mg/kg (total BTEX) in 12 of 38 collected soil samples. The maximum concentrations of BTEX of 136.2 mg/kg and 1.18 mg/kg were observed in soil samples RPSB-80 (8-10 feet) and RPSB-80 (6-8 feet), respectively. A review of the boring log for soil boring RPSB-80 indicated that the recovered samples exhibited slight staining and petroleum-like odors. The 8 to 10-foot interval exhibited a maximum PID reading of approximately 2,000 ppm.

Soil Sampling – PAH Analysis

Thirteen of 38 collected soil samples exhibited detectable levels of PAHs. PAH compounds were detected at concentrations ranging from 0.079 mg/kg to 87.78 mg/kg at soil samples RPSB-81 (6-8 feet) and RPSB-76 (6-8 feet), respectively. The highest PAH concentrations were observed in soil samples collected from soil borings RPSB-76, RPSB-79 and RPSB-80. A review of the boring logs for soil borings RPSB-76, RPSB-79 and RPSB-80 indicated that the recovered samples exhibited some black staining and mild petroleum-like odors. A maximum PID reading of approximately 2,000 ppm was detected from the 8 to 10-foot interval from soil boring RPSB-80.

Soil Sampling – Cyanide and Phenols Analysis

Cyanide was detected in 30 of the 38 collected samples ranging in concentration from 0.13 mg/kg to 9.3 mg/kg at locations RPSB-73 (8-10 feet) and RPSB-70 (4-6 feet), respectively. Phenols were not detected in any of the soil samples collected.

Soil Sampling – TCLP RCRA Organics and Inorganics Analysis

Concentrations of targeted TCLP RCRA organics were not detected in any of the 13 samples collected and analyzed with the exception of benzene detected at 17 ug/l in soil sample RPSB-80 (6-8 feet). At least one of the eight targeted TCLP RCRA inorganic constituents were exhibited in all 13 collected samples. Barium was detected in all the collected samples ranging from 9.6 ug/l to 129 ug/l. Lead and selenium were detected in 9 of the 13 collected soil samples. Cadmium and mercury were not detected in any of the collected soil samples. It is important to note that while numerous inorganic constituents were quantified during the analysis, all were detected at concentrations greater than the instrument detection limit (IDL), but less than the contract required detection limit (CRDL).

Soil Vapor Analysis – BTEX and Naphthalene

All soil vapor samples collected exhibited detectable concentrations of total BTEX ranging from 1.5 parts per billion by volume (ppbv) to 342.8 ppbv at locations RPSV-17 and RPSV-20, respectively. Toluene was detected at all sample locations ranging from 1.4 ppbv to 98 ppbv at locations RPSV-18 to RPSV-20, respectively. Naphthalene was not detected in any of the nine soil vapor samples collected. It should be noted that soil vapor probe RPSV-16, initially proposed as a component of the Underground Feeder Cable Investigation program, was replaced by RPSV-10 since this point was installed during the remedial investigation at essentially the same location as the proposed sample point.

Summary of Findings

Soil sample analytical data generated during the Underground Feeder Cable investigation suggests that the maximum concentrations of total BTEX and PAHs in subsurface soil were 136.2 mg/kg and 87.78 mg/kg, respectively. The maximum concentrations of chemical constituents were found along approximately 300 feet of Rockaway Freeway between soil probe RPSB-79 and soil vapor probe RPSV-20.

1.8 Cut and Plug Interim Remedial Measure

A total of 11 trenches were excavated at the Rockaway Park former MGP site between January 12 and 25, 1999 as part of the Cut and Plug Interim Remedial Measure (IRM) Program. The objective of the IRM program was to locate underground piping associated with historic MGP operations so that each pipe could be cut, drained of any fluids and plugged in order to limit the potential for off-site migration of MGP-derived waste materials. A backhoe was utilized to excavate the trenches. The excavated soil was stockpiled at ground level adjacent to each excavation. The visually clean excavated material was segregated from the visually stained material. The excavated soil was placed on polyethylene sheeting and covered with the same to limit exposure. Observations of the excavated soil were recorded with respect to the presence of staining, indications of chemical constituents, and odors. The location of each excavation is

shown on **Drawing 1C**. **Drawing 1C** is provided in a map pocket at the end of this section of the report. Visually clean excavated soil was used for backfilling of the trenches. The visually stained soil was temporarily stockpiled on site and properly disposed of off-site at a later date. Non-native clean fill was used to complete the backfilling requirements at those locations where stained soil was encountered.

The 11 trenches excavated at the Rockaway Park site, included Excavations 1 through 8 and 11, located along the northern site boundary, and excavations 9 and 10, located along the southern site boundary. Ten pipes ranging in diameter from 2 inches to 20 inches were exposed in excavations. Pipes were cut, drained of any liquid contents and plugged with concrete by Coastal Environmental Technologies (Coastal). Coastal contained any contents drained from piping and transported the material off-site for proper disposal. After completing this operation, the excavations were backfilled. Pipes were not found within excavation Nos. 3 and 8.

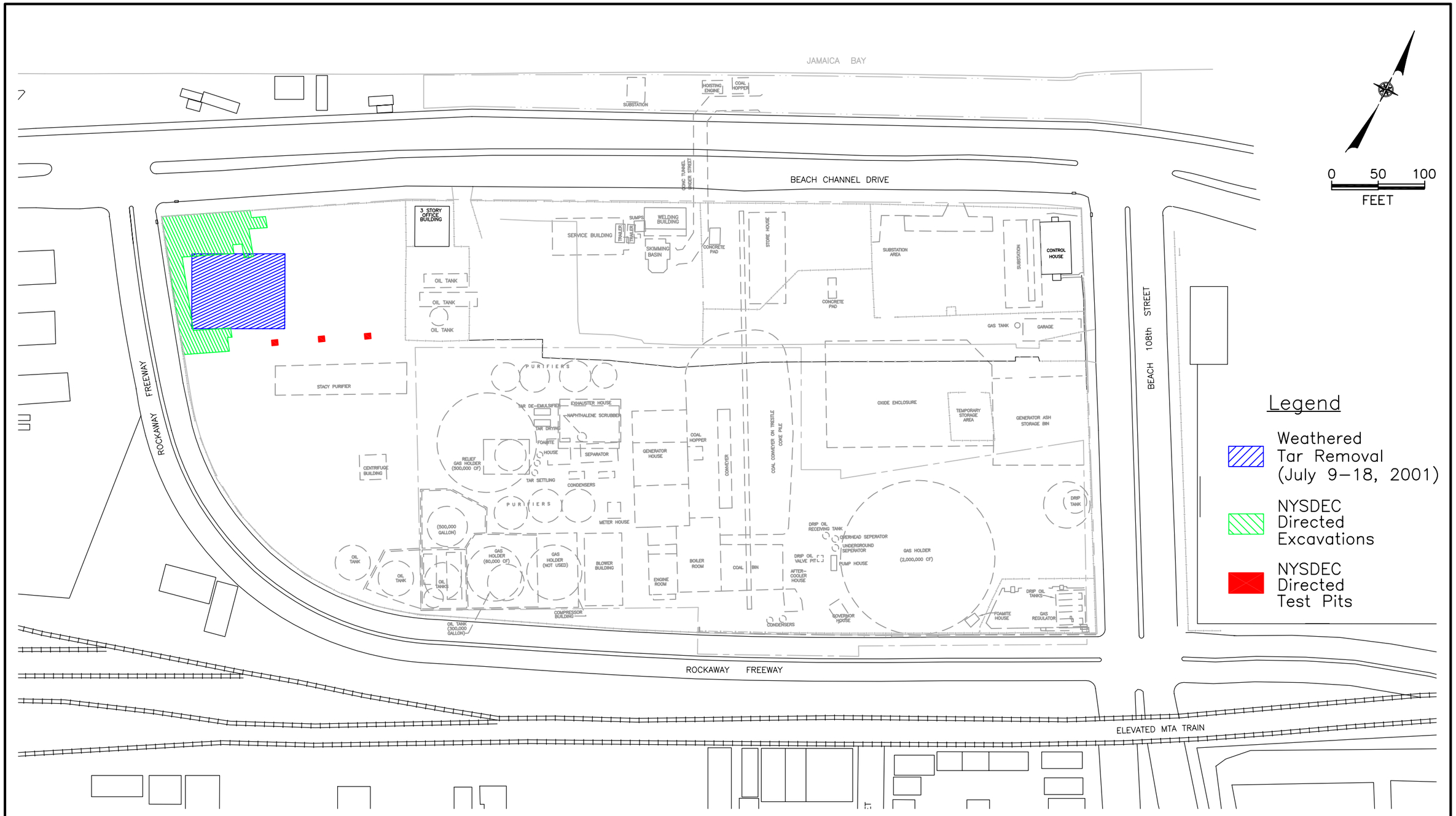
During the cut and plug IRM, a total of eight soil samples were collected during the completion of selected trenches and analyzed for BTEX compounds by Method 8020, PAHs by Method 8270, RCRA metals by Methods 6010/7471 and total cyanide by Method 9012. The samples selected for analysis were collected from excavations where visible staining or MGP-impacted materials were noted. Soil samples RPCP-01, RPCP-02, RPCP-05, RPCP-06, RPCP-07, RPCP-08, RPCP-09 and RPCP-10 were collected from excavations 1, 2, 5, 6, 7, 8, 9 and 10, respectively. Soil samples were generally collected from the middle of the excavations based on visual observations and PID readings. The analytical results for these samples are provided in **Appendix B**.

Section 2.7 provides details of the field activities completed as part of this IRM.

1.9 Electric Substation Construction Support Activities

Foster Wheeler Environmental Corporation (FWEC) conducted excavation and oversight activities in support of the construction of the electric substation located in the northwest portion of the site. As documented in the report entitled, "Rockaway Park Former Manufactured Gas

Plant Site – New Substation Construction Support Activities," prepared by FWEC in September 2002, approximately 527 tons of solidified coal tar/bituminous material was excavated from the northwest portion of the site. This material was excavated across an area of approximately 70 feet by 100 feet to a depth of about 10 inches below grade as shown on **Figure 1-6**. In addition, as directed by the NYSDEC, further surface soil excavation and test pitting was conducted by FWEC along the northern and western perimeters of the new substation as shown on **Figure 1-6**. All excavated areas were backfilled with certified clean sand and compacted with a ten ton vibratory roller to match existing conditions. FWEC also provided oversight of the substation trenching operations conducted by KeySpan's contractor Asplundh. As part of the trenching operation, FWEC also removed visually impacted material from the excavation for proper off-site transportations and disposal. As documented in FWEC's report, a total of 750 cubic yards of soil were transported for proper off-site disposal at Clean Earth of New Castle, Inc. of New Castle, Delaware.



ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

CONSTRUCTION SUPPORT EXCAVATION LIMITS

FIGURE 1–6

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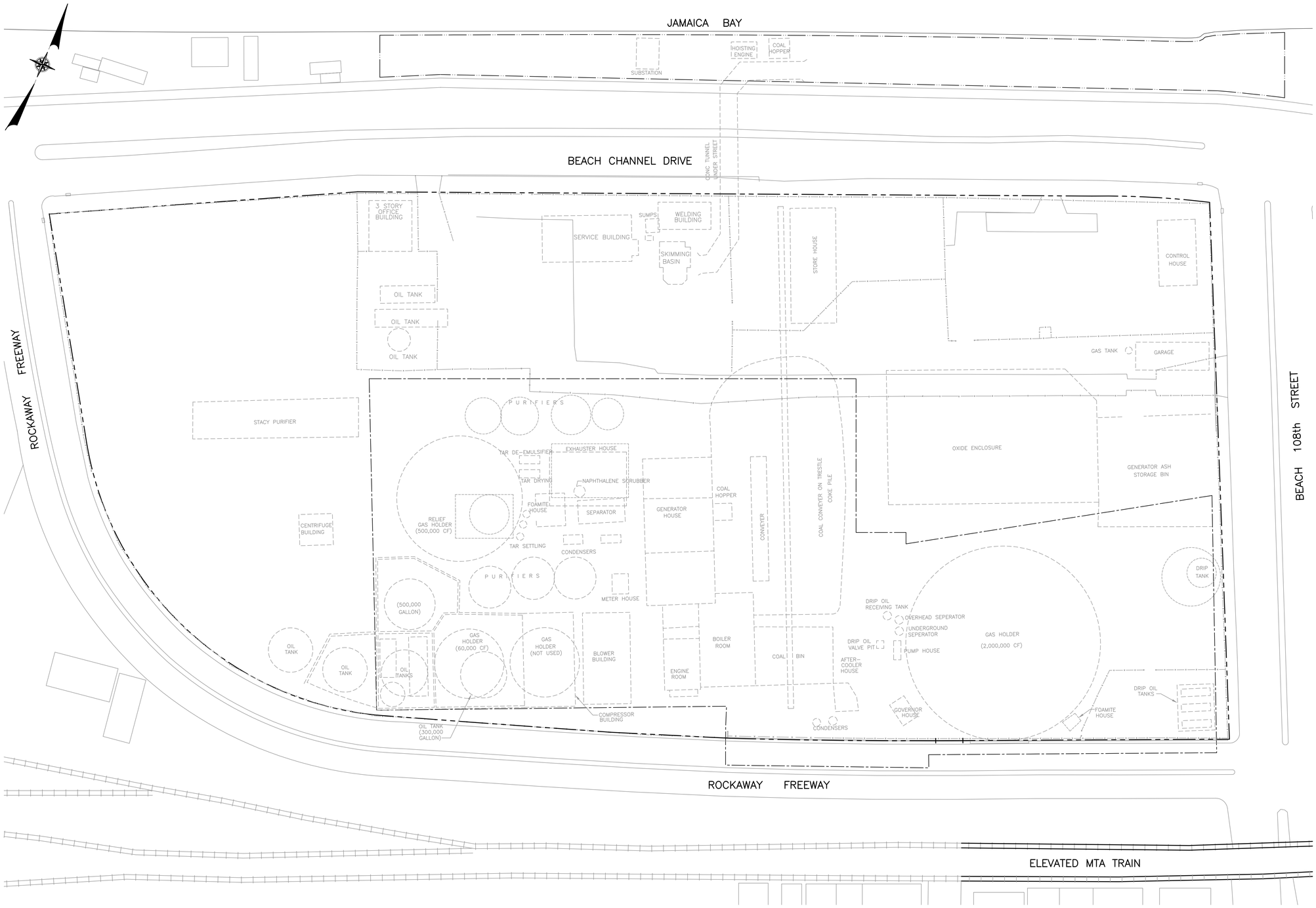

LEGEND:

- APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
- APPROXIMATE 1912 SITE BOUNDARY
- CURRENT SITE BOUNDARY
- FORMERLY OWNED PROPERTY
- FENCE

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
– PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

NOTE: SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS.

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SCALE IN FEET

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DESIGNED BY: XXXX	CHECKED BY: XXXX

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CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

HISTORIC STRUCTURES

PROJECT NO. 1620–C
DATE: OCTOBER 2002
SCALE: AS SHOWN
DRAWING NO. **1A**

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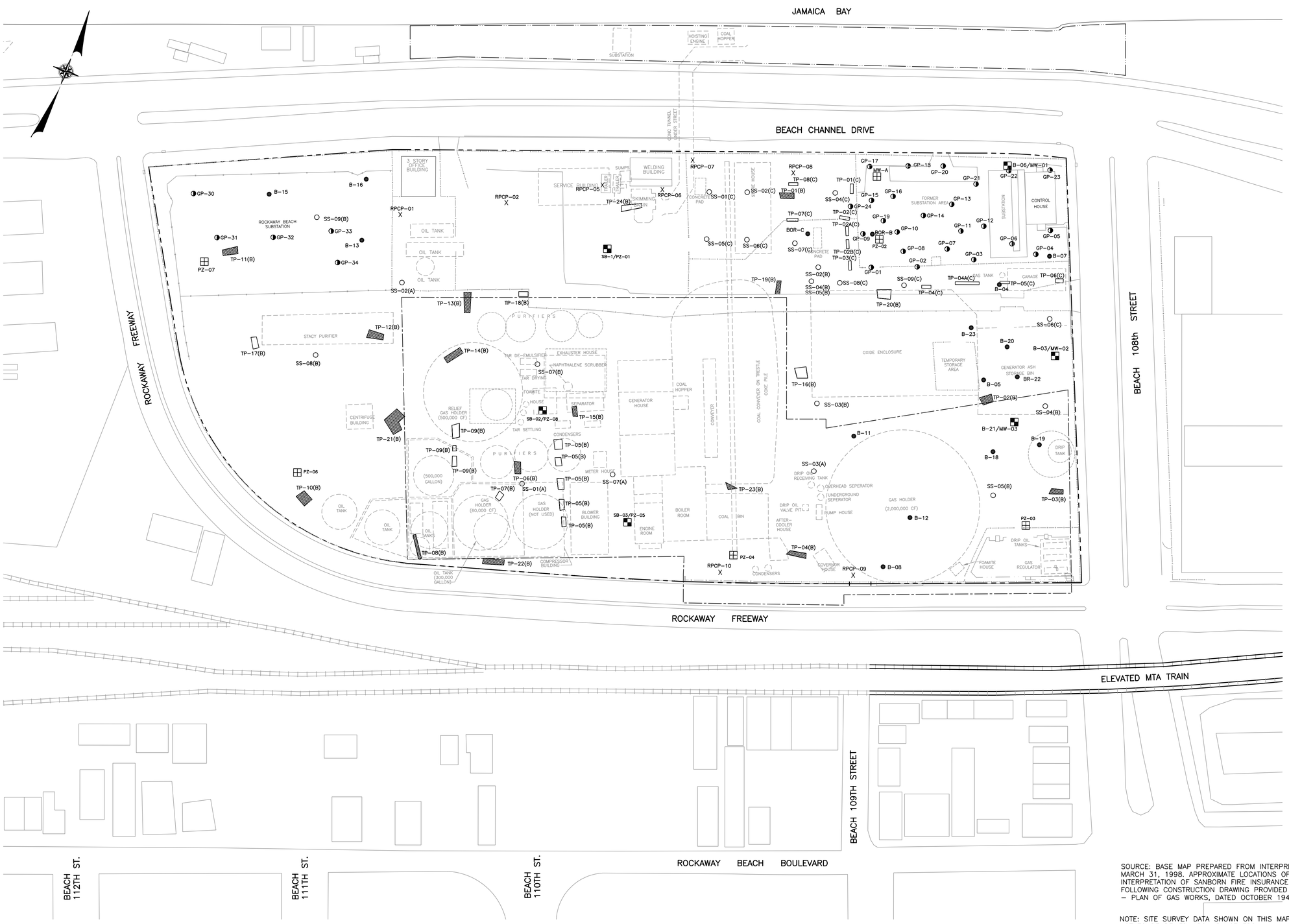

LEGEND:

PZ-01	PIEZOMETER/WELL LOCATION FROM GEI PHASE I INVESTIGATION–FEBRUARY 1997
MW-01/ MW-A	PIEZOMETER/WELL LOCATION FROM GEI SUBSTATION INVESTIGATION–FEBRUARY 1999
SB-01/ PZ-01	SOIL BORING CONVERTED TO PIEZOMETER/MONITORING WELL FROM GEI PHASE I INVESTIGATION–JANUARY 1997
B-01/ MW-01	SOIL BORING CONVERTED TO PIEZOMETER/MONITORING WELL FROM GEI SUBSTATION INVESTIGATION–FEBRUARY 1999
TP-01(B)	TEST PIT EXCAVATION FROM GEI PHASE I INVESTIGATION–JANUARY 1997
TP-01(B)	GRAB SOIL SAMPLE FROM TEST PIT EXCAVATION FROM GEI PHASE I INVESTIGATION–JANUARY 1997
TP-01(C)	TEST PIT EXCAVATION FROM GEI SUBTATION INVESTIGATION–FEBRUARY 1999
SS-01(A)	APPROXIMATE SURFACE SOIL SAMPLING LOCATION FROM NUS INVESTIGATION–DECEMBER 1989
SS-01(B)	SURFACE SOIL SAMPLING LOCATION FROM GEI PHASE I INVESTIGATION–JANUARY 1997
SS-01(C)	SURFACE SOIL SAMPLING LOCATION FROM GEI SUBSTATION INVESTIGATION–FEBRUARY 1999
B-01/ BR-01/ BOR-A	SOIL BORING SAMPLING LOCATION FROM GEI SUBSTATION INVESTIGATION–FEBRUARY 1999
GP-01	GEOPROBE SOIL SAMPLING LOCATION FROM GEI SUBSTATION INVESTIGATION–FEBRUARY 1999
RPCP-01	APPROXIMATE LOCATION OF GRAB SOIL SAMPLE FROM "CUT AND PLUG" PROGRAM EXCAVATION–FEBRUARY 1999
	APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
	LOCATION OF EXISTING STRUCTURE
	APPROXIMATE 1912 SITE BOUNDARY
	CURRENT SITE BOUNDARY
	FORMERLY OWNED PROPERTY
	FENCE

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
– PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

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FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

PREVIOUS SAMPLE LOCATIONS

PROJECT NO. 1620–C
DATE: OCTOBER 2002
SCALE: AS SHOWN
DRAWING NO. 1B

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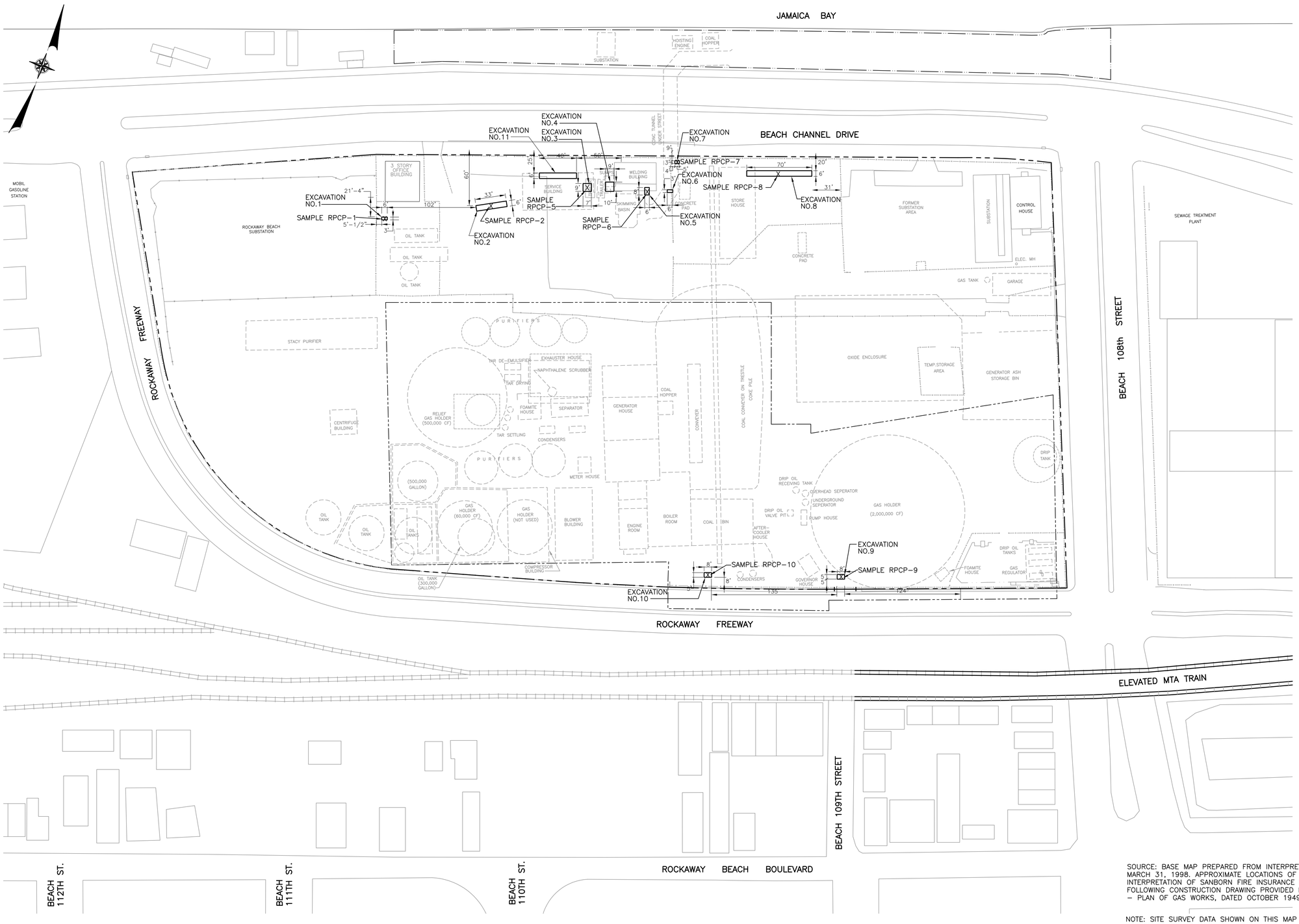

LEGEND:

- RPCP-1 X — APPROXIMATE LOCATION OF GRAB SOIL SAMPLE FROM "CUT & PLUG" PROGRAM EXCAVATION
- FORMER MGP STRUCTURE
- EXISTING BUILDING
- APPROXIMATE 1912 SITE BOUNDARY
- CURRENT SITE BOUNDARY
- FORMALLY OWNED PROPERTY
- FENCE

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
– PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

NOTE: SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS.

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DESIGNED BY: XXXX	CHECKED BY: E.S.K.

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CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

CUT AND PLUG EXCAVATION AND SOIL SAMPLE LOCATION MAP

PROJECT NO. 1620–C
DATE: OCTOBER 2002
SCALE: AS SHOWN
DRAWING NO. 1c

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2.0 FIELD INVESTIGATION PROGRAM

2.1 Organization and Overview of Field Investigation Program

Environmental samples collected from on-site locations have been grouped into what is referred to as the on-site Field Investigation Program. The on-site Field Investigation includes sampling activities conducted as part of the Substation Investigation Report and Delisting Petition (discussed in **Section 1.7**) as well as a portion of the Transmission Cable Investigation. Off-site sample locations, located upgradient, adjacent (lateral) and downgradient relative to the site, have been grouped into what is referred to as the off-site Field Investigation Program. The off-site Field Investigation includes sampling activities conducted as part of the Underground Feeder Cable Investigation (discussed in **Section 1.7**), as well as a portion of the Transmission Cable Investigation and the Bulkhead Investigation.

The field investigation program was conducted in order to define the nature and extent of chemical constituents in soil, groundwater and air attributable to past operations at the site. It considered on-site and off-site conditions and included the following activities:

- Soil vapor sampling;
- Surface soil sampling;
- Subsurface soil sampling;
- Monitoring point inventory, assessment and initial groundwater sampling;
- Groundwater probe installation and sampling;
- Groundwater monitoring well installation and sampling;
- Air sampling;
- Test pits;
- Perimeter and location-specific air monitoring; and
- Surveying and mapping.

The completed field investigation scope of work and sampling program are presented in this section. Descriptions of drilling and sampling methods and procedures are discussed in **Section 2.2**. Environmental samples collected as part of the field investigation program were analyzed for various chemical constituents. The media sampled, chemical constituents analyzed and the laboratory methods for these analyses are summarized in **Table 2-1**. More specific information is provided in the Generic Work Plan for the project. On-site and off-site sample locations are shown on **Drawing 2**. **Drawing 2** is provided in the map pocket at the end of this section of the report.

2.2 Field Methods/Procedures

Drilling and sampling methodologies and procedures are generally described in this section. Further, detailed descriptions of methodologies and procedures are provided in the Generic Work Plan for the project entitled, "Rockaway Park Former MGP Site, Investigation Work Plan," Volume II: Generic Work Plan, dated November 1999.

Surface Soil Sampling

Surface soil samples were collected from depths of 0 to 6 inches utilizing a dedicated polyethylene scoop and placed into laboratory supplied glass bottles. In areas where a recent layer of crushed rock or other cover material was placed on the ground surface, the material was removed prior to sample collection. All samples were screened utilizing a PID for the presence of VOCs.

Subsurface Soil Sampling

Subsurface soil samples were collected using either a direct push soil probe (Geoprobe) sampling technique with a decontaminated probe sampler or through using a decontaminated split spoon sampler in conjunction with a conventional hollow stem-auger drill rig. The samples were screened for VOCs utilizing a PID; inspected for staining, discoloration, non-aqueous phase

TABLE 2-1

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SAMPLE MEDIA, CHEMICAL CONSTITUENTS AND ANALYTICAL METHODS

Chemical Constituents	SAMPLE MEDIA AND ANALYTICAL METHOD			
	Soil	Groundwater	Soil Vapor	Air
BTEX	USEPA Method 8020	USEPA Method 8020	--	--
BTEX and Naphthalene	--	--	USEPA Modified Method T0-14	USEPA Modified Method T0-14
PAHs	USEPA Method 8270	USEPA Method 8270	--	--
Total Phenols	USEPA Method 9065	--	--	--
VOCs	--	USEPA Method 8260	--	--
RCRA Metals	USEPA Methods 6010/7471	--	--	--
Total Cyanide	USEPA Method 9012	USEPA Method 9012	--	--
Free Cyanide	--	Method SM4500-CN1	--	--
PCBs	USEPA Method 8082	USEPA Method 8082	--	--
Full NYSDEC TCL Organics	USEPA Methods 8260, 8270 and 8080	--	--	--
Full NYSDEC TAL Metals	USEPA Methods 6010/7471	USEPA Methods 6010/7471	--	--
Iron and Manganese	--	USEPA Method 6010	--	--
Total Organic Carbon (TOC)	USEPA SW-846 Method 9060	USEPA Method 415.1	--	--
Vertical Permeability	ASTM Method 5084	--	--	--
Grain Size	ASTM Method D422-63	--	--	--
Bulk Density	ASTM Method D2937-94	--	--	--
Specific Gravity	ASTM Method D854-92	--	--	--
Moisture Content	ASTM Method D2216-92	--	--	--
Chloride	--	USEPA Method 325.3	--	--
Total Dissolved Solids (TDS)	--	USEPA Method 160.2	--	--

liquid (NAPL); checked for odors; and logged by a geologist using the Unified Soil Classification system. Boring logs are included in **Appendix C**.

Before commencement of soil probing and drilling activities and between boring locations, all "down-hole" drilling equipment (i.e., augers, split spoon samplers, probe rods, etc.) were decontaminated using a steam cleaner/pressure washer at the decontamination pad. Split spoon and soil probe samplers were also decontaminated between each use by thoroughly washing with alconox and water, using a brush to remove particulate matter or surface film, followed by a thorough rinsing with tap water.

During soil probe/boring installation, a PID was used to monitor VOCs in the breathing zone and at the probe holes and boreholes. The PID was calibrated on at least a daily basis, using isobutylene gas at a concentration of 100 parts per million (ppm) in air. Equipment calibration was documented in the project field book. In addition, during on-site hollow stem auger drilling activities, the breathing zone was monitored for hydrogen cyanide (HCN) using a Drager MiniWarn Multi-Gas Monitor.

During hollow stem auger boring activities, upwind and downwind air monitoring was performed in accordance with the procedures outlined in **Section 2.5**.

Upon completion of hollow stem auger borings, visibly clean soil that did not exhibit elevated PID measurements was placed back into the borehole and the borehole was allowed to collapse naturally. Soil that exhibited obvious visible staining or discoloration, odors and/or elevated PID readings was placed into new Department of Transportation (DOT)-approved 55-gallon drums (or suitable alternative) for subsequent proper off-site transportation and disposal by KeySpan.

Groundwater Probes

Groundwater probe samples were collected by driving probe rods to the designated sample depth and retracting 4 feet to expose a decontaminated stainless steel screen. Dedicated

polyethylene tubing and a decontaminated stainless steel check valve were inserted into the rod assembly and manually oscillated to purge approximately three casing volumes of groundwater from the screen and rod assembly. The screen, check valve and rods were decontaminated and new tubing was used between each interval. Water quality parameters including pH, conductivity, turbidity, dissolved oxygen, temperature and salinity were monitored utilizing a calibrated Horiba U-10 multiple parameter instrument. Additionally, any evidence of odors, sheens or the presence of free product were noted. All observations and results were logged in a bound field book. Groundwater samples were then collected from the tubing/check valve assembly into laboratory-supplied glass bottles.

Upon completion, each probe hole was allowed to naturally collapse onto itself. All probe holes were restored at grade with the same material that was originally in place as described previously.

Groundwater Monitoring Well Installation

The number of wells and the depth and location of each well was determined based on the results of the groundwater probe sampling program and the direction of groundwater flow. In general, depending on topography and the depth to the water table, shallow wells were advanced to a depth of 17 feet bgs, intermediate wells were advanced to 47 feet bgs, deep wells were advanced to a depth of 77 feet bgs, and very deep wells were advanced to a depth of 107 feet bgs.

Before commencement of drilling activities and between well locations, all "down-hole" drilling equipment (i.e., augers, split spoon samplers, rods, etc.) were decontaminated using a steam cleaner/pressure washer at the decontamination pad. Spit spoon samplers were also decontaminated between uses by a thorough washing with alconox and water, using a brush to remove particulate matter or surface film, followed by a thorough rinsing with tap water.

Monitoring wells were constructed with 2-inch diameter Schedule 40, flush-jointed, threaded, polyvinyl chloride (PVC) well screen and casing. The wells were fitted with 10 feet of

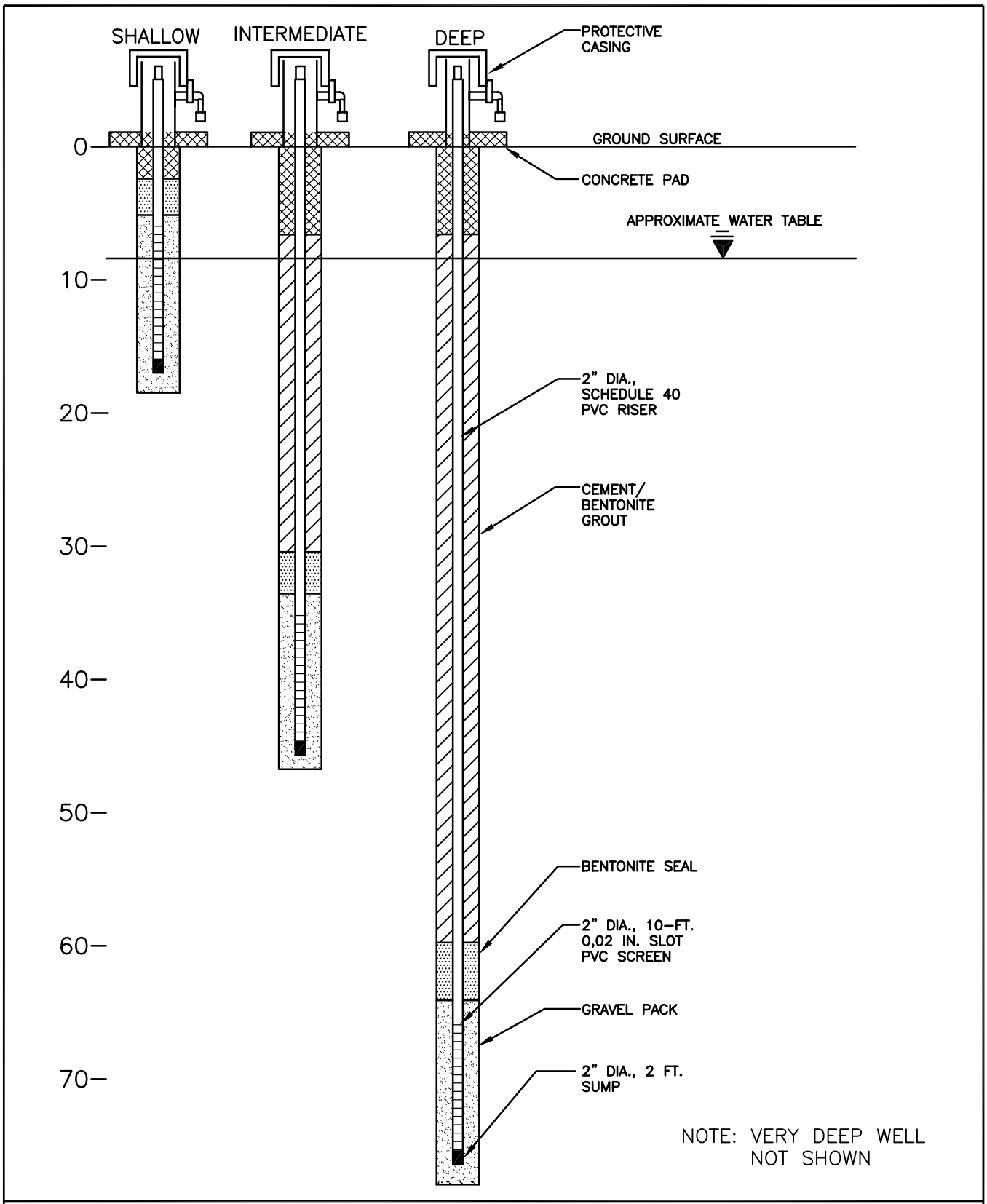
well screen, having 0.020-inch, slotted openings. Below the monitoring well screens, a 2-foot sump was installed. Solid 2-inch diameter, PVC well casing extended from the screen to approximately 3.5 feet above grade. All on-site wells were fitted with an above grade locking steel protective casing. **Figure 2-1** shows the typical construction of a new monitoring well cluster installed as part of this field investigation program. **Table 2-2** summarizes the completed well construction details. In addition, the boring logs for these monitoring wells are included in **Appendix C**.

A Number 2 graded gravel was set from about 1-foot below the bottom of the monitoring well sump to a point approximately 3 feet above the top of the well screen. A slurry composed of bentonite clay and water was pumped into the annulus via tremie pipe above the gravel pack. Typically this seal was at least 2 feet thick. For the deep and intermediate groundwater monitoring wells, a cement and bentonite mix was pumped into the annulus, via tremie pipe, from the top of the bentonite seal to the surface. For the shallow monitoring wells, bentonite "chips" were placed in the annulus from the top of the gravel pack to land surface.

The gravel pack, bentonite seal and cement grout were placed into the annulus in a manner that ensured complete placement, free of any voids or drill cuttings that may jeopardize the integrity of the groundwater monitoring well.

Soil generated during the installation of on-site monitoring wells which appeared to be visibly clean and did not exhibit elevated PID measurements was spread on the ground near the well cluster. Soil that exhibited obvious visible staining or discoloration, odors and/or elevated PID readings was placed into new DOT-approved 55-gallon drums (or suitable alternative) for subsequent proper off-site transportation and disposal by KeySpan.

The new monitoring wells were developed after installation. The well development protocol included pumping the wells with a submersible or centrifugal pump while monitoring the flow rate, pH, conductivity, turbidity, dissolved oxygen, temperature, salinity and depth to water. During the development process, the submersible pump or suction pipe was rapidly moved up and down in the groundwater column. This surging action loosens up any fine material



ROCKAWAY PARK FORMER MGP SITE INVESTIGATION
ROCKAWAY PARK, NEW YORK

TYPICAL CONSTRUCTION OF NEW MONITORING WELL CLUSTERS

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 2-1

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TABLE 2-2
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL CONSTRUCTION SUMMARY

MONITORING WELL	WELL DEPTH (feet bgs)	TOTAL DEPTH (feet bgs)	GROUND SURFACE ELEVATION (feet)	MEASURING POINT ELEVATION (feet) (1)	CASING DIAMETER (inches)	SCREENED DEPTHS (feet bgs)		ANNULAR FILLS (feet bgs)		
						INTERVAL	DESCRIPTION	INTERVAL	TYPE	MATERIALS
MW-01	16.00	25.00	8.98	8.53	2.00	6.00-16.00	Slotted PVC	0.00-1.00	Seal	Concrete
								1.00-3.50	Seal	Grout
								3.50-5.00	Seal	Bentonite
								5.00-16.00	Filter	Sand Pack
MW-03	14.00	14.00	7.31	7.01	2.00	4.00-14.00	Slotted PVC	0.00-1.00	Seal	Concrete
								1.00-2.00	Seal	Grout
								2.00-3.00	Seal	Bentonite
								3.00-14.00	Filter	Sand Pack
MW-A	30.00	30.00	9.63	9.05	0.00	6.00-16.00	Slotted PVC	0.00-1.00	Seal	Concrete
								1.00-3.50	Seal	Grout
								3.50-5.00	Seal	Bentonite
								5.00-16.00	Filter	Sand Pack
PZ-01	40.00	40.00	7.95	7.57	2.00	2.00-12.00	Slotted PVC	0.00-0.90	Seal	Grout
								0.90-1.50	Seal	Bentonite
								1.50-12.00	Filter	Sand Pack
								12.00-40.00	Backfill	Fill
PZ-02	12.00	12.00	8.75	8.25	2.00	2.00-12.00	Slotted PVC	0.00-0.90	Seal	Grout
								0.90-1.50	Seal	Bentonite
								1.50-12.00	Filter	Sand Pack
PZ-03	12.00	12.00	7.32	7.03	2.00	2.00-12.00	Slotted PVC	0.00-0.90	Seal	Grout
								0.90-1.50	Seal	Bentonite
								1.50-12.00	Filter	Sand Pack
PZ-04	12.00	12.00	9.92	9.66	2.00	2.00-12.00	Slotted PVC	0.00-0.90	Seal	Grout
								0.90-1.50	Seal	Bentonite
								1.50-12.00	Filter	Sand Pack
PZ-05	40.00	40.00	9.88	9.76	2.00	2.00-12.00	Slotted PVC	0.00-0.90	Seal	Grout
								0.90-1.50	Seal	Bentonite
								1.50-12.00	Filter	Sand Pack
								12.00-40.00	Backfill	Fill
PZ-06	12.00	12.00	9.52	9.37	2.00	2.00-12.00	Slotted PVC	0.00-0.90	Seal	Grout
								0.90-1.50	Seal	Bentonite
								1.50-12.00	Filter	Sand Pack
PZ-07	12.00	12.00	8.13	7.68	2.00	2.00-12.00	Slotted PVC	0.00-0.90	Seal	Grout
								0.90-1.50	Seal	Bentonite
								1.50-12.00	Filter	Sand Pack
PZ-08	40.00	40.00	7.52	7.18	2.00	2.00-12.00	Slotted PVC	0.00-0.90	Seal	Grout
								0.90-1.50	Seal	Bentonite
								1.50-12.00	Filter	Sand Pack
								12.00-40.00	Backfill	Fill
RPMW-01I	47.00	47.50	8.69	8.06	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-27.00	Backfill	Bentonite Grout
								27.00-29.00	Seal	Bentonite
								29.00-47.50	Filter	Gravel Pack
RPMW-01S	17.00	17.50	8.68	8.24	2.00	5.00-15.00	Slotted Schedule 40 PVC	0.00-1.00	Seal	Cement
								3.00-17.50	Filter	Gravel Pack
RPMW-02D	76.00	76.00	12.05	11.09	2.00	64.00-74.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-56.00	Backfill	Bentonite Grout
								56.00-58.00	Seal	Bentonite
								58.00-76.00	Filter	Gravel Pack
RPMW-02I	47.00	48.00	11.68	10.94	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-30.00	Backfill	Bentonite Grout
								30.00-32.50	Seal	Bentonite
								32.50-48.00	Filter	Gravel Pack
RPMW-02S	17.00	18.00	11.71	11.17	2.00	5.00-15.00	Slotted Schedule 40 PVC	0.00-1.00	Seal	Cement
								1.00-2.50	Seal	Bentonite Chips
								2.50-18.00	Filter	Gravel Pack
RPMW-03D	77.00	78.00	8.43	8.03	2.00	65.00-75.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-56.00	Backfill	Bentonite Grout
								56.00-58.00	Seal	Bentonite
								58.00-78.00	Filter	Gravel Pack
RPMW-03I	47.00	48.00	8.19	7.32	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-30.00	Backfill	Bentonite Grout
								30.00-32.00	Seal	Bentonite
								32.00-48.00	Filter	Gravel Pack
RPMW-03S	17.00	18.00	7.36	7.13	2.00	5.00-15.00	Slotted Schedule 40 PVC	0.00-1.00	Seal	Cement
								1.00-3.00	Seal	Bentonite Chips
								3.00-18.00	Filter	Gravel Pack
RPMW-04I	47.00	48.00	8.56	10.70	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-28.00	Backfill	Bentonite Grout
								28.00-30.00	Seal	Bentonite
								30.00-48.00	Filter	Gravel Pack

TABLE 2-2
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL CONSTRUCTION SUMMARY

MONITORING WELL	WELL DEPTH (feet bgs)	TOTAL DEPTH (feet bgs)	GROUND SURFACE ELEVATION (feet)	MEASURING POINT ELEVATION (feet) (1)	CASING DIAMETER (inches)	SCREENED DEPTHS (feet bgs)		ANNULAR FILLS (feet bgs)		
						INTERVAL	DESCRIPTION	INTERVAL	TYPE	MATERIALS
RPMW-04S	17.00	18.00	8.48	11.48	2.00	5.00-15.00	Slotted	0.00-1.00	Seal	Cement
							Schedule 40	1.00-3.00	Seal	Bentonite Grout
							PVC	3.00-18.00	Filter	Gravel Pack
RPMW-05I	46.00	48.00	8.58	11.70	2.00	35.00-45.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-31.00	Backfill	Bentonite Grout
							PVC	31.00-33.00	Seal	Bentonite
								33.00-48.00	Filter	Gravel Pack
RPMW-05S	17.00	18.00	8.76	11.30	2.00	5.00-15.00	Slotted	0.00-1.00	Seal	Cement
							Schedule 40	1.00-3.00	Seal	Bentonite Grout
							PVC	3.00-18.00	Filter	Gravel Pack
RPMW-06I	47.00	48.00	9.70	12.49	2.00	35.00-45.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-30.00	Backfill	Bentonite Grout
							PVC	30.00-33.00	Seal	Bentonite
								33.00-48.00	Filter	Gravel Pack
RPMW-07D	77.00	77.00	8.16	7.82	2.00	65.00-75.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-59.00	Backfill	Bentonite Grout
							PVC	59.00-61.00	Seal	Bentonite
								61.00-77.00	Filter	Gravel Pack
RPMW-07I	47.00	48.00	8.17	7.86	2.00	35.00-45.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-30.00	Backfill	Bentonite Grout
							PVC	30.00-33.00	Seal	Bentonite
								33.00-48.00	Filter	Gravel Pack
RPMW-07S	13.50	17.00	8.13	7.89	2.00	1.50-11.50	Slotted	0.00-0.50	Seal	Cement
							Schedule 40	0.50-1.00	Seal	Bentonite
							PVC	1.00-17.00	Filter	Gravel Pack
RPMW-08I	47.00	48.00	8.78	11.79	2.00	35.00-45.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-28.00	Backfill	Bentonite Grout
							PVC	28.00-30.00	Seal	Bentonite
								30.00-48.00	Filter	Gravel Pack
RPMW-08S	17.00	18.00	8.78	11.84	2.00	5.00-15.00	Slotted	0.00-1.00	Seal	
							Schedule 40	1.00-3.00	Seal	
							PVC	3.00-18.00	Filter	Gravel Pack
RPMW-09D	78.00	78.00	7.36	10.08	2.00	66.00-76.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-56.00	Backfill	Bentonite Grout
							PVC	56.00-58.00	Seal	Bentonite
								58.00-78.00	Filter	Gravel Pack
RPMW-09D2	107.00	135.00	7.10	10.20	2.00	95.00-105.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-87.00	Backfill	Bentonite Grout
							PVC	87.00-89.00	Seal	Bentonite
								89.00-110.00	Filter	Gravel Pack
RPMW-09I	47.00	48.00	7.36	10.16	2.00	35.00-45.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-30.00	Backfill	Bentonite Grout
							PVC	30.00-32.00	Seal	Bentonite
								32.00-48.00	Filter	Gravel Pack
RPMW-10I	47.00	48.00	8.05	11.18	2.00	35.00-45.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-29.00	Backfill	Bentonite Grout
							PVC	29.00-31.00	Seal	Bentonite
								31.00-48.00	Filter	Gravel Pack
RPMW-10S	17.00	18.00	8.19	11.14	2.00	5.00-15.00	Slotted	0.00-1.00	Seal	Cement
							Schedule 40	1.00-3.00	Seal	Bentonite Grout
							PVC	3.00-18.00	Filter	Gravel Pack
RPMW-11D	77.00	78.00	9.93	9.57	2.00	65.00-75.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-63.00	Backfill	Bentonite Grout
							PVC	63.00-65.00	Seal	Bentonite
								65.00-78.00	Filter	Gravel Pack
RPMW-11I	47.00	47.50	9.99	9.65	2.00	35.00-45.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-27.00	Backfill	Bentonite Grout
							PVC	27.00-29.00	Seal	Bentonite
								29.00-47.50	Filter	Gravel Pack
RPMW-11S	17.00	17.50	10.02	9.63	2.00	5.00-15.00	Slotted	0.00-1.00	Seal	Cement
							Schedule 40	1.00-3.00	Seal	Bentonite Grout
							PVC	3.00-17.50	Filter	Gravel Pack
RPMW-12D	77.00	77.25	9.94	12.71	2.00	65.00-75.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-59.00	Backfill	Bentonite Grout
							PVC	59.00-61.00	Seal	Bentonite
								61.00-77.00	Filter	Gravel Pack
RPMW-12D2	107.00	108.00	9.94	12.81	2.00	95.00-105.00	Slotted	0.00-1.50	Seal	Cement
							Schedule 40	1.50-89.00	Backfill	Bentonite Grout
							PVC	89.00-91.00	Seal	Bentonite
								91.00-108.00	Filter	Gravel Pack

TABLE 2-2
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL CONSTRUCTION SUMMARY

MONITORING WELL	WELL DEPTH (feet bgs)	TOTAL DEPTH (feet bgs)	GROUND SURFACE ELEVATION (feet)	MEASURING POINT ELEVATION (feet) (1)	CASING DIAMETER (inches)	SCREENED DEPTHS (feet bgs)		ANNULAR FILLS (feet bgs)		
						INTERVAL	DESCRIPTION	INTERVAL	TYPE	MATERIALS
RPMW-12I	47.00	48.00	10.26	13.34	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-28.00	Backfill	Bentonite Grout
								28.00-30.00	Seal	Bentonite
								30.00-48.00	Filter	Gravel Pack
RPMW-12S	17.00	18.00	10.24	13.46	2.00	5.00-15.00	Slotted Schedule 40 PVC	0.00-1.00	Seal	Cement
								1.00-3.00	Seal	Bentonite Grout
								3.00-18.00	Filter	Gravel Pack
RPMW-13D	77.00	78.00	12.28	14.10	2.00	65.00-75.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-56.35	Backfill	Bentonite Grout
								56.35-58.35	Seal	Bentonite
								58.35-78.00	Filter	Gravel Pack
RPMW-13D2	107.50	108.00	11.57	14.20	2.00	95.00-105.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-85.00	Backfill	Bentonite Grout
								85.00-87.00	Seal	Bentonite
								87.00-108.00	Filter	Gravel Pack
RPMW-13I	47.00	48.00	11.22	13.96	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-31.00	Backfill	Bentonite Grout
								31.00-33.00	Seal	Bentonite
								33.00-48.00	Filter	Gravel Pack
RPMW-13S	17.00	18.00	11.18	13.78	2.00	5.00-15.00	Slotted Schedule 40 PVC	0.00-1.00	Seal	Cement
								1.00-3.00	Seal	Bentonite Grout
								3.00-18.00	Filter	Gravel Pack
RPMW-14D	78.00	78.00	9.68	12.41	2.00	66.00-76.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-57.00	Backfill	Bentonite Grout
								57.00-59.00	Seal	Bentonite
								59.00-78.00	Filter	Gravel Pack
RPMW-14I	47.00	48.00	9.25	12.04	20.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-31.00	Backfill	Bentonite Grout
								31.00-33.00	Seal	Bentonite
								33.00-48.00	Filter	Gravel Pack
RPMW-14S	17.00	18.00	8.33	11.38	20.00	5.00-15.00	Slotted Schedule 40 PVC	0.00-1.00	Seal	Cement
								1.00-2.50	Seal	Bentonite Grout
								2.50-18.00	Filter	Gravel Pack
RPMW-15I	47.00	48.00	7.13	10.22	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-30.00	Backfill	Bentonite Grout
								30.00-32.00	Seal	Bentonite
								32.00-48.00	Filter	Gravel Pack
RPMW-16I	47.00	48.00	8.64	8.34	2.00	30.00-45.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-30.00	Backfill	Bentonite Grout
								30.00-32.50	Seal	Bentonite
								32.50-48.00	Filter	Gravel Pack
RPMW-16S	17.00	18.00	8.81	8.29	2.00	5.00-15.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-3.00	Seal	Bentonite Chips
								3.00-18.00	Filter	Gravel Pack
RPMW-17D	78.00	78.00	7.89	7.57	2.00	65.00-75.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-59.00	Backfill	Bentonite Grout
								59.00-61.00	Seal	Bentonite
								61.00-78.00	Filter	Gravel Pack
RPMW-17I	47.00	48.00	7.84	7.59	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-1.50	Seal	Cement
								1.50-30.00	Backfill	Bentonite Grout
								30.00-33.00	Seal	Bentonite
								33.00-48.00	Filter	Gravel Pack
RPMW-17S	17.00	18.00	7.91	7.45	2.00	5.00-15.00	Slotted Schedule 40 PVC	0.00-1.00	Seal	Cement
								1.00-3.00	Seal	Bentonite Chips
								3.00-18.00	Filter	Gravel Pack

NOTES:
(1) Top of casing elevation.
NA: Information not available.
For monitoring wells constructed during the course of this investigation:
Seal: Uppermost seal consits of cement
Lowermost seal consists of bentonite
Backfill : Consists of cement/bentonite grout
Filter: Consists of gravel pack

adjacent to the gravel pack in the screen zone and permits more water to enter the well. The development process continued until the turbidity readings were 50 NTUs or less and stabilization of the measured field parameters was achieved. All development water was temporarily containerized in several 10,000-gallon storage tanks located on-site. After waste characterization, all containerized liquids were removed for proper off-site transportation and disposal by KeySpan.

The submersible pump used for well development was decontaminated with an alconox wash followed by a rinse with potable water. The suction pipe for the centrifugal pump was discarded after each use and a new length was used prior to development of the next monitoring well.

Groundwater Sampling

Subsequent to installation and development, groundwater samples were collected from the monitoring wells. Prior to sampling, the total depth and depth to water at each well was measured and recorded in order to estimate purge volumes. An oil/water interface probe was used to determine if any NAPL was present within each well.

Monitoring wells were sampled using either disposable plastic bailers or dedicated polyethylene tubing after purging the equivalent of three to five well volumes of groundwater from each well. Each well was purged using a 12-volt submersible pump or peristaltic pump. During purging, groundwater was pumped through a 4-inch diameter tube or flow cell. The groundwater entered through the bottom of the flow cell and exited through a tube near the top. The probes from the Horiba-U10 and the oxidation reduction potential (ORP) meter were placed in the flow cell so that the parameters for pH, specific conductance, temperature, turbidity, salinity, dissolved oxygen and ORP could be monitored, and recorded using field instrumentation. Groundwater was carefully poured from the bailers or siphoned from tubing into laboratory-supplied glass bottles.

After completing sampling activities, the weighted bailer used in sampling the monitoring well was slowly lowered to the bottom of the well in an effort to determine if DNAPL has accumulated within the well sump. All purge water was temporarily containerized in DOT-approved 55-gallon drums and transferred into the on-site storage tanks for subsequent off-site disposal by KeySpan.

Air Sampling

Air samples were collected in Summa canisters as 8-hour composites under low barometric pressure conditions. The following atmospheric conditions/parameters were measured and recorded during sample collection: barometric pressure, temperature, relative humidity and wind direction and speed. In addition, total particulates were measured using a mini-ram digital dust indicator during the collection of the outdoor ambient air samples.

Soil Vapor Sampling

Using a hand operated slide hammer, each soil vapor sample was collected by driving a decontaminated stainless steel soil gas probe approximately 3 to 4 feet bgs. The soil gas probes were then purged using a vacuum pump. After purging each probe for approximately 5 minutes and recording the PID measurement, the probe was then capped and allowed to stabilize for approximately 5 minutes. After the stabilization period, the probe was connected to a laboratory-supplied Summa canister. Summa canisters are stainless steel vessels that have been cleaned and certified contaminant-free by the contract laboratory. Each Summa canister was shipped to the sampling site under a high vacuum (<1 m Torr) to ensure that the canister remained free of contaminants prior to use. After connecting the Summa canister to the soil gas probe, a valve on the canister was opened and the vacuum slowly drew the sample into the canister over a period of approximately 10 minutes. After collecting the gas sample, the valve was closed and disconnected from the soil gas probe.

2.3 Existing Monitoring Well Inventory and Sampling

At the beginning of the field investigation, an existing groundwater monitoring well inventory was undertaken to locate existing wells and assess their suitability for sampling. The well inventory/assessment focused on wells installed during the 1997 investigation completed by Atlantic Environmental/GEI Consultants, Inc. (discussed under **Section 1.7**) and the 1999 investigation completed by GEI Consultants, Inc. (also discussed under **Section 1.7**).

Table 2-3 provides a summary of information obtained during the survey with regard to the existence and condition of each monitoring well. Monitoring well locations are shown on **Drawing 2**. A total of 12 on-site wells were located within the Rockaway Park former MGP site. As shown in **Table 2-3**, monitoring well MW-02 was damaged and could not be sampled. Consequently, monitoring well MW-02 was replaced with RPMW-10S which was installed during this remedial investigation.

Each of the existing wells located as part of this effort was measured for depth to water, total depth and the presence of free product using an oil/water interface probe. Each well was redeveloped using a centrifugal or submersible pump to remove any accumulated silt and reduce the turbidity of the water. A goal of achieving turbidity of 50 Nephelometric Turbidity Units (NTUs) or less was utilized. As indicated in **Table 2-3**, the majority of wells yielded water with a turbidity of 50 NTUs or less.

Approximately one week after development, each existing well was sampled. Purging and sampling procedures were consistent with the procedures described under **Section 2.2**. The groundwater samples were analyzed for TAL metals by USEPA Methods 6010 and 7471, TCL VOCs by USEPA Method 8260, TCL SVOCs by USEPA Method 8270, total cyanide by USEPA Method 9012 and free cyanide by Standard Method SM4500-CN1*;* total dissolved solids (TDS) USEPA by Method 160.1; and chlorides by USEPA Method 325.3. The analytical results of the groundwater samples are presented and discussed in **Sections 4.2.3** and **4.3.3**.

TABLE 2-3
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
EXISTING MONITORING WELL INVENTORY

MONITORING WELL IDENTIFICATION	LOCATION	DIAMETER (Inches)	DEPTH BELOW SURFACE (feet)		MEASURED DEPTH TO WATER (feet)	FINAL TURBIDITY AFTER WELL DEVELOPMENT (NTUs)	FREE PRODUCT IDENTIFIED	REMARKS
			Measured	Documented				
MW-A	Substation Area	2	16.24	16	8.1	0	NO	Strong Hydrogen-Sulfide odor
MW-01	Substation Area	2	16.1	16	7.55	0	NO	Strong Hydrogen-Sulfide odor
MW-02	Former generator ash storage bin	2	N/A	15	N/A	N/A	N/A	Well damaged and could not sample
MW-03	South of former generator ash storage bin	2	13.4	14	5.48	29	NO	Hydrocarbon/Naphthalene-like odor
PZ-01	South of former service building	2	8.9	12	6.11	10	NO	
PZ-02	Substation Area	2	12.1	12	6.8	2	NO	
PZ-03	North of former drip oil tanks	2	11.9	12	5.81	4	NO	Hydrocarbon/Naphthalene-like odor
PZ-04	South of former coal bin	2	11.9	12	7.3	13	NO	Hydrocarbon-like odor and sheen on purge water
PZ-05	West of former engine room	2	11.95	12	7.35	10	NO	
PZ-06	Southwest portion of site	2	12.05	12	7.62	0	NO	
PZ-07	Northwest portion of site	2	12.05	12	8.72	0	NO	
PZ-08	Center of former gas works area	2	11.82	12	5.1	4	YES	

Notes:
N/A: Not Applicable.

2.4 On-site Field Investigation Program

The investigation activities completed as part of the On-site Field Investigation Program are summarized in **Table 2-4**. The on-site (and off-site) sample locations are shown on **Drawing 2** found at the end of this section of the report.

Surface Soil

A total of 13 surface soil samples were collected at the Rockaway Park site. Surface soil samples were located at former MGP structures and operations areas considered to be potential sources of chemical constituents. The analytical results of the surface soil samples are presented and discussed in **Section 4.2.1**.

Subsurface Soil

Forty-nine soil borings were advanced on the Rockaway Park site. A majority of the subsurface soil samples were collected utilizing a split spoon sampler in conjunction with a conventional hollow stem auger drilling rig. Due to space limitations or the presence of overhead power lines, the direct push (Geoprobe) sampling technique was utilized at four sampling locations along the eastern site boundary. The majority of the borings were completed to a depth of approximately 50 feet bgs. However, nine of the borings were advanced to depths of between 82 and 151 feet bgs. Consistent with the approved Work Plan, soil samples were collected continuously from certain soil borings from the ground surface to a depth of 25 feet bgs and then at 5-foot intervals to the end of the boring. Other soil borings were sampled continuously over the entire soil boring depth. Similarly, other soil borings identified by the Work Plan were sampled at 5-foot intervals over the entire soil boring depth.

Four samples were selected for laboratory analysis from each boring advanced within the former Gas Works area including: one sample from the unsaturated zone; a sample at the groundwater interface; a sample of visually clean soil; and a sample at the termination depth of the borehole. In general, three soil samples per subsurface soil boring location were collected in

TABLE 2-4
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF ON-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS											Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	Pesticides & PCBs	VOCs & SVOCs	TAL Metals	Chloride and TDS	BTEX and Naphthalene	
Rockaway Park Site	Soil Boring	---	49	49	RPSB-07	41	RPSB-07 (15-17)	■	■	■	■	--	■	--	--	--	--	--	--
	Soil Boring Samples	Soil	171	171			RPSB-07 (27-29)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-07 (39-41)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-08	42	RPSB-08 (15-17)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-08 (30-32)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-08 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-09	42	RPSB-09 (2-4)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-09 (20-22)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-09 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-10	67	RPSB-10 (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-10 (18-20)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-10 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-10 (65-67)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-11	47	RPSB-11 (15-17)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-11 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-11 (45-47)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-12	52	RPSB-12 (2-4)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-12 (14-16)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-12 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-13	40	RPSB-13 (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-13 (30-32)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-13 (38-40)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-14	42	RPSB-14 (0-2)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-14 (6-8)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-14 (30-32)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-14 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-15	42	RPSB-15 (3-5)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-15 (7-9)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-15 (25-27)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-15 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-16	52	RPSB-16 (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-16 (6-8)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-16 (30-32)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-16 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-17	52	RPSB-17 (5-7)	■	--	■	■	--	■	--	--	--	--	--	--
							RPSB-17 (35-37)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-17 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-18	87	RPSB-18 (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-18 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-18 (80-82)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-18 (85-87)	■	■	■	■	--	■	--	--	--	--	--	--

TABLE 2-4
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF ON-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS											Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	Pesticides & PCBs	VOCs & SVOCs	TAL Metals	Chloride and TDS	BTEX and Naphthalene	
Rockaway Park Site (Cont.)					RPSB-19	47	RPSB-19 (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-19 (30-32)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-19 (45-47)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-20	42	RPSB-20 (2-4)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-20 (25-27)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-20 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-21	41	RPSB-21 (7-9)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-21 (23-25)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-21 (39-41)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-22	82	RPSB-22 (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-22 (8-10)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-22 (60-62)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-22 (80-82)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-23	50	RPSB-23 (2-4)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-23 (12-14)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-23 (36-38)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-23 (48-50)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-24	52	RPSB-24 (3-5)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-24 (5-7)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-24 (30-32)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-24 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-25	52	RPSB-25 (4-6)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-25 (6-8)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-25 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-25 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-26	40	RPSB-26 (4-6)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-26 (13-15)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-26 (38-40)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-27	52	RPSB-27 (2-4)	■	■	--	■	--	■	■	■	■			
							RPSB-27 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-27 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-28	50	RPSB-28 (2-4)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-28 (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-28 (38-40)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-28 (48-50)	■	■	■	■	--	■		--	--	--	--	--
					RPSB-29	136	RPSB-29 (5-7)	■	■	■	■	--	■		--	--	--	--	--
							RPSB-29 (7-9)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-29 (35-37)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-29 (55-57)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-29 (134-136)	■	■	--	■	--	■	--	--	--	--	--	--

TABLE 2-4
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF ON-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS											Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	Pesticides & PCBs	VOCs & SVOCs	TAL Metals	Chloride and TDS	BTEX and Naphthalene	
Rockaway Park Site (Cont.)					RPSB-30	62	RPSB-30 (9-11)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-30 (19-21)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-30 (60-62)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-31A	135	RPSB-31A (2-4)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-31A (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-31A (35-37)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-31A (133-135)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-31B	50	RPSB-31B (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-31B (6-8)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-31B (22-24)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-31B (48-50)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-32	42	RPSB-32 (2-4)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-32 (25-27)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-32 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-33	47	RPSB-33 (2-4)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-33 (15-17)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-33 (45-47)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-34	82	RPSB-34 (8-10)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-34 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-34 (80-82)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-35	82	RPSB-35 (0-2)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-35 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-35 (60-62)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-35 (80-82)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-36	57	RPSB-36 (5-7)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-36 (7-9)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-36 (35-37)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-36 (55-57)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-37	52	RPSB-37(10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-37 (35-37)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-37 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-38	52	RPSB-38 (4-6)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-38 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-38 (30-32)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-38 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-39	44	RPSB-39 (2-4)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-39 (25-27)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-39 (42-44)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-40	40	RPSB-40 (19-21)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-40 (26-28)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-40 (38-40)	■	■	■	■	--	■	--	--	--	--	--	--

TABLE 2-4
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF ON-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS											Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	Pesticides & PCBs	VOCs & SVOCs	TAL Metals	Chloride and TDS	BTEX and Naphthalene	
Rockaway Park Site (Cont.)					RPSB-41	47	RPSB-41 (7-9)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-41 (9-11)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-41 (45-47)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-42	126	RPSB-42 (5-7)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-42 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-42 (35-37)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-42 (124-126)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-43	97	RPSB-43 (5-7)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-43 (9-11)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-43 (45-47)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-43 (95-97)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-44	151	RPSB-44 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-44 (65-67)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-44 (149-151)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-45	52	RPSB-45 (6-8)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-45 (25-27)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-45 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-45 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-46	52	RPSB-46 (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-46 (8-10)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-46 (35-37)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-46 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-47	42	RPSB-47 (5-7)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-47 (25-27)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-47 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-48	47	RPSB-48 (4-6)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-48 (22-24)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-48 (45-47)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-49	52	RPSB-49 (2-4)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-49 (8-10)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-49 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-49 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-50	57	RPSB-50 (5-7)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-50 (7-9)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-50 (39-41)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-50 (55-57)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-51	52	RPSB-51 (5-7)	■	■	--	■	--	■	■	■	■	--	--	--
							RPSB-51 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-51 (40-42)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-51 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--

TABLE 2-4
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF ON-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS											Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	Pesticides & PCBs	VOCs & SVOCs	TAL Metals	Chloride and TDS	BTEX and Naphthalene	
Rockaway Park Site (Cont.)					RPSB-52	44	RPSB-52 (6-8)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-52 (30-32)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-52 (42-44)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-53	41	RPSB-53 (5-7)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-53 (25-27)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-53 (39-41)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-54	52	RPSB-54 (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-54 (12-14)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-54 (50-52)	■	■	■	■	--	■	--	--	--	--	--	--
	Surface Soil	Soil	13	13	RPSS-04 thru RPSS-16	0.5	RPSS-04 thru RPSS-16	■	■	■	■	--	■	--	--	--		--	--
	Monitoring Wells	Soil	19	27 (see note 1)	RPMW-04S	17	RPMW-04S	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-04I	47	RPMW-04I	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-05S	17	RPMW-05S	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-05I	47	RPMW-05I	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-06I	47	RPMW-06I	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-07S	13.5	RPMW-07S	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-07I	47	RPMW-07I	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-07D	77	RPMW-07D	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-08S	17	RPMW-08S	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-08I	47	RPMW-08I	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-09I	47	RPMW-09I	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-09D	78	RPMW-09D	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-09D2	107	RPMW-09D2	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-10S	17	RPMW-10S	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-10I	47	RPMW-10I	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-12S	17	RPMW-12S	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-12I	47	RPMW-12I	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-12D	77	RPMW-12D	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-12D2	107	RPMW-12D2	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-13S	17	RPMW-13S	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-13I	47	RPMW-13I	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-13D	77	RPMW-13D	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-13D2	107.5	RPMW-13D2	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-14S	17	RPMW-14S	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-14I	47	RPMW-14I	--	--	--	--	--	--	--	--	--	--	--	■
					RPMW-14D	78	RPMW-14D	--	--	--	--	--	--	--	--	--	--	--	--
					RPMW-15I	47	RPMW-15I	--	--	--	--	--	--	--	--	--	--	--	■
	Groundwater Monitoring Well Samples	Water	31	38 (see note 2)	RPMW-04S	17	RPMW-04S	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-04I	47	RPMW-04I	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-05S	17	RPMW-05S	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-05I	47	RPMW-05I	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-06I	47	RPMW-06I	■	■	--	■	■	--	--	■	■	■	--	--

TABLE 2-4
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF ON-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS											Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	Pesticides & PCBs	VOCs & SVOCs	TAL Metals	Chloride and TDS	BTEX and Naphthalene	
Rockaway Park Site (Cont.)					RPMW-07S	13.5	RPMW-07S	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-07I	47	RPMW-07I	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-07D	77	RPMW-07D	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-08S	17	RPMW-08S	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-08I	47	RPMW-08I	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-09I	47	RPMW-09I	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-09D	78	RPMW-09D	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-09D2	107	RPMW-09D2	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-10S	17	RPMW-10S	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-10I	47	RPMW-10I	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-12S	17	RPMW-12S	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-12I	47	RPMW-12I	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-12D	77	RPMW-12D	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-12D2	107	RPMW-12D2	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-13S	17	RPMW-13S	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-13I	47	RPMW-13I	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-13D	77	RPMW-13D	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-13D2	107.5	RPMW-13D2	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-14S	17	RPMW-14S	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-14I	47	RPMW-14I	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-14D	78	RPMW-14D	■	■	--	■	■	--	--	■	■	■	--	--
					RPMW-15I	47	RPMW-15I	■	■	--	■	■	--	--	■	■	■	--	--
					MW-A	30	MW-A	■	■	--	■	■	--	--	■	■	■	--	--
					MW-01	16	MW-01	■	■	--	■	■	--	--	■	■	■	--	--
					MW-03	14	MW-03	■	■	--	■	■	--	--	■	■	■	--	--
					PZ-01	40	PZ-01	■	■	--	■	■	--	--	■	■	■	--	--
					PZ-02	12	PZ-02	■	■	--	■	■	--	--	■	■	■	--	--
					PZ-03	12	PZ-03	■	■	--	■	■	--	--	■	■	■	--	--
					PZ-04	12	PZ-04	■	■	--	■	■	--	--	■	■	■	--	--
					PZ-05	40	PZ-05	■	■	--	■	■	--	--	■	■	■	--	--
					PZ-06	12	PZ-06	■	■	--	■	■	--	--	■	■	■	--	--
					PZ-07	12	PZ-07	■	■	--	■	■	--	--	■	■	■	--	--
					PZ-08	12	PZ-08	■	■	--	■	■	--	--	■	■	■	--	--
	Ambient Air	Air	4	4	RPAA-01 thru RPAA-04	--	RPAA-01 thru RPAA-04	--	--	--	--	--	--	--	--	--	--	■	--
SubStation Investigation/Delisting Petition	Soil Probes	---	6	6	RPSB-64	16	RPSB-64 (4-6)	■	■	■	■	--	■	--	--	--	--	--	--
	Soil Probe Samples	Soil	18	19 (see note 3)			RPSB-64 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-64 (14-16)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-65	16	RPSB-65 (6-8)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-65 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-65 (14-16)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-66	16	RPSB-66 (6-8)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-66 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--

TABLE 2-4
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF ON-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS											Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	Pesticides & PCBs	VOCs & SVOCs	TAL Metals	Chloride and TDS	BTEX and Naphthalene	
SubStation Investigation/Delisting Petition (Cont.)							RPSB-66 (14-16)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-67	16	RPSB-67 (2-4)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-67 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-67 (12-14)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-68	16	RPSB-68 (6-8)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-68 (8-10)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-68 (14-16)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSB-69	16	RPSB-69 (6-8)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-69 (10-12)	■	■	■	■	--	■	--	--	--	--	--	--
							RPSB-69 (14-16)	■	■	■	■	--	■	--	--	--	--	--	--
					RPSM-03	52	RPSM-03 (7-9)	■	■	■	■	--	■	--	--	--	--	--	--
Transmission Cable Investigation	Soil Borings	---	3	3	RPSB-89	61	RPSB-89 (7-9)	■	■	--	■	--	--	--	--	--	--	--	--
	Soil Boring Samples	Soil	8	8			RPSB-89 (49-51)	■	■	--	■	--	--	--	--	--	--	--	--
							RPSB-89 (59-61)	■	■	--	■	--	--	--	--	--	--	--	--
					RPSB-92A	100	RPSB-92A (98-100)	■	■	--	■	--	--	--	--	--	--	--	--
					RPSB-97	59	RPSB-97 (5-7)	■	■	--	■	--	--	--	--	--	--	--	--
							RPSB-97 (31-33)	■	■	--	■	--	--	--	--	--	--	--	--
							RPSB-97 (47-49)	■	■	--	■	--	--	--	--	--	--	--	--
							RPSB-97 (57-59)	■	■	--	■	--	--	--	--	--	--	--	--
	Soil Vapor/Gas Probes	Soil Vapor	1	1	RPSV-25	3	RPSV-25	--	--	--	--	--	--	--	--	--	--	■	--

Notes:

(1) Eight additional groundwater monitoring wells were installed to characterize deep and very deep groundwater intervals. As part of the eight wells, monitoring well MW-10S was installed due to the fact that existing well MW-2 could not be sampled.

(2) Groundwater samples were collected from eight additional groundwater monitoring wells. The proposed sample count includes well MW-2 that was replaced with well MW-10S.

(3) One additional sample was collected from structural boring SM-1.

-- : not applicable.

Geotechnical Sampling includes vertical permeability, grain size, bulk density, specific gravity and moisture content.

the areas outside of the former Gas Works area. The first soil sample was collected at the groundwater interface. The second sample was collected from the middle of the borehole or when visually clean soil was encountered. The third sample was collected at the termination depth of the borehole.

In areas where deep borings were advanced beyond the planned depth, additional soil samples were selected for chemical analysis in order to define soil conditions vertically. The determination of the sample collection depths were dependent on the field observations of the soil sample collected. Consistent with the approved Work Plan, if soil staining, an apparent hydrocarbon odor or elevated PID reading were observed, the boring was advanced until 10 feet of visibly "clean" sand was encountered and low PID readings were noted before the final soil sample was collected. Boring logs are included in **Appendix C**.

As discussed in **Section 1.7**, six soil probes were advanced to a depth of approximately 16 feet as part of the Substation Investigation Program. Three soil samples were collected from each soil probe for laboratory analysis. In addition, one soil sample was collected for laboratory analysis from a structural boring. Boring logs are included in **Appendix C**.

In addition, three soil borings were advanced to depths of 61, 100 and 59 feet bgs as part of the Transmission Cable Investigation completed in November 2001. Soil samples were collected from each probe for laboratory analysis. Boring logs are included in **Appendix C**.

The analytical results of the subsurface soil samples collected from soil borings are presented and discussed in **Section 4.2.2**

Groundwater Monitoring Wells

A total of 27 new groundwater monitoring wells were installed at the Rockaway Park site. The screen intervals for the shallow, newly installed groundwater monitoring wells were based on the depth to groundwater. Consequently, the shallow groundwater monitoring wells were screened from 5 to 15 feet bgs. The intermediate groundwater monitoring wells were

screened at a depth of "water table plus 30 feet" or 35 to 45 feet bgs. The deep groundwater monitoring wells were screened at a depth of "water table plus 60 feet" or 65 to 75 feet bgs. Similarly, the very deep groundwater monitoring wells were screened at a depth of "water table plus 90 feet" or 95 to 105 feet bgs. In addition, because the lithology at the site is uniform, there was no geologic reason to target the well screens to specific changes in lithology.

Monitoring well clusters RPMW-12(S,I,D,D2) and RPMW-13(S,I,D,D2) each consisting of four wells, were installed immediately south of the former Gas Works area of the Rockaway Park site. In addition, Monitoring well cluster RPMW-09(I,D,D2) was installed in the center of the former Gas Works area. A shallow monitoring well was not installed as part of the well cluster RPMW-09, due to the close proximity of existing monitoring well PZ-08 which was screened from 2 to 12 feet bgs. Monitoring well cluster RPMW-14(S,I,D) was installed to the southwest of the former 2-Million Cubic Foot Gas Holder. Monitoring well cluster RPMW-07(S,I,D) was installed on the north side of the site in the area of the former Skimming Basin. Similarly, monitoring well clusters RPMW-04(S,I), RPMW-05(S,I), RPMW-08(S,I) and RPMW-10(S,I) each consisting of two wells, were installed around the perimeter of the Rockaway Park site. Monitoring wells RPMW-06(I) and RPMW-15(I) were installed in the vicinity of existing wells MW-A and PZ-03, respectively.

Subsurface soil samples were collected at nine of the monitoring well locations in order to provide additional geological information. Continuous subsurface soil sampling was conducted at monitoring wells RPMW-05I, RPMW-06I, RPMW-10I and RPMW-15I to a depth of 47 feet bgs. Subsurface soil sampling was conducted at monitoring well RPMW-07D between 50 and 77 feet bgs and at monitoring well RPMW-14D between 40 and 77 feet bgs. In addition, subsurface soil sampling was conducted between 85 and 105, 45 and 105, and 50 to 105 feet bgs at the three very deep monitoring wells, RPMW-09D2, RPMW-12D2 and RPMW-13D2, respectively.

As part of the groundwater monitoring well installation and sampling program, soil samples from select wells were submitted for geotechnical analysis. One set of soil samples was collected from the unsaturated zone of the intermediate wells above the groundwater table at a

depth of approximately 2 to 7 feet bgs. The second set of samples consisted of a composite of three samples collected from the top, middle and bottom of the screened interval of the intermediate monitoring well from a depth of 35 to 45 feet bgs. In addition, another set of samples were collected from the top, middle and bottom of the screened interval from a depth of 95 to 105 feet bgs of the very deep monitoring wells RPMW-09D2, RPMW-12D2 and RPMW-13D2. The laboratory composited these three samples for analysis. All geotechnical soil samples were analyzed for total organic carbon by USEPA SW-846 Method 9060, grain size by ASTM Method D422-63, bulk density by ASTM D2937-94, specific gravity by ASTM D854-92 and moisture content by ASTM D2216-92. Since a deep continuous confining layer was not encountered across the site, Shelby tube samplers were not utilized as part of this investigation.

The analytical results of the groundwater samples are presented and discussed in **Section 4.2.3**.

Air

Three indoor air samples were collected at sample locations RPAA-01, RPAA-02 and RPAA-03. Air sampling location RPAA-01 was collected within the on-site office building, RPAA-02 was collected within the one story structure along the northern property boundary designated as the welding building. Air sampling location RPAA-03 was collected within the electrical substation control house. In addition, one outdoor ambient air sample, RPAA-04, was collected at a location within the former Gas Works area. The analytical results of the air samples are presented and discussed in **Section 4.2.4**.

Soil Vapor

One soil vapor sample was collected as part of the Transmission Cable Investigation completed in November 2001. The analytical results of the soil vapor sample is presented and discussed in **Section 4.2.5**.

Test Pits

Six test pits (RPTP-01, RPTP-02, RPTP-03, RPTP-04, RPTP-05 and RPTP-06) were excavated to characterize the soil quality within the western portion of the site. Similarly, two additional test pits (RPTP-07 and RPTP-08) were excavated within the confines of the former Oxide Enclosure.

The test pits were excavated utilizing a backhoe to a depth of 7.5 to 10 feet bgs. The excavated material was temporarily stockpiled adjacent to the excavation. The soil in the excavation was characterized by an on-site geologist following the Unified Soil Classification System, and the excavated soil was screened for the presence VOCs and HCN using a PID and a HCN meter, respectively. The presence of visible staining or odors were also noted. All observations, PID and HCN measurements, and soil descriptions were recorded in a bound field book and on a test pit log form by the on-site geologist. During the excavation activities, upwind and downwind air monitoring was conducted in accordance with the procedures outlined in **Section 2.5**. Following the completion of the test pit excavation, the stockpiled soil was backfilled into the excavation and compacted utilizing the backhoe.

2.5 Perimeter and Location-Specific Air Monitoring

During the completion of on-site field activities, perimeter air monitoring was conducted at the site boundary. A photoionization detector (PID) and a dust monitoring instrument were used to detect any potential off-site migration of volatile organic compounds (VOCs) or dust emanating from the on-site field operations. Readings were taken at established air monitoring stations located at approximately 200-foot intervals around the site perimeter and recorded in a project field book.

During field activities involving the use of hollow stem auger drilling and other intrusive activities such as test pits, calibrated air monitoring instruments were also employed to monitor for potential releases of VOCs and/or dust. Upwind and downwind air monitoring stations were established at the location of each intrusive field activity. Each monitoring station contained a

data logging PID and a data logging dust meter. In addition, a PID was used to monitor the air quality within the worker's breathing zone and to qualitatively measure any VOCs being emitted from the borehole or drill cuttings.

A weather station which recorded wind direction, wind speed, temperature, humidity and precipitation was maintained throughout the duration of the field program. The recorded weather data assisted in determining the proper location of air monitoring stations relative to the activity being monitored. This information would also be critical in the event a report of a suspected release emanating from the site had to be substantiated.

All air monitoring instruments were calibrated on a daily basis prior to the start of field work. The calibration records are maintained in the project files. All data from the stationary air monitoring stations were electronically downloaded to the on-site computer at the conclusion of the day's work. This information is also available in the project files.

2.6 Off-site Field Investigation Program

The off-site field investigation program was completed to delineate and assess the presence of chemical constituents that may have migrated off the site and to identify potential exposure pathways. The investigation activities completed as part of the Off-site Field Investigation Program are summarized in **Table 2-5**. Off-site sample locations are shown on **Drawing 2**.

Surface Soil

A total of three surface soil samples were collected from off-site locations between Beach Channel Drive and the fence to the south of the bulkhead area. In addition, eight surface soil samples were collected from the New York City-owned Bulkhead area as part of the Bulkhead Investigation completed in April 2002.

TABLE 2-5

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS															Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	VOC & SVOC	TAL Metals	Full TCL/TAL	TCLP Organics	TCLP Inorganics	Chloride & TDS	BTEX and Naphthalene	
Rockaway Park Site	Soil Borings	---	14	15 (see note 1)	RPSB-01	40	RPSB-01 (5-7)	■	--	■	--	■	--	■	■	■	■	--	--	--	--	--	--
	Soil Boring Samples	Soil	28	31 (see note 2)			RPSB-01 (38-40)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-02	42	RPSB-02 (20-22)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-02 (40-42)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-02A	57	RPSB-02A (30-32)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-02A (55-57)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-03	57	RPSB-03 (5-7)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-03 (30-32)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-04	47	RPSB-04 (25-27)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-04 (45-47)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-05	67	RPSB-05 (4-6)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-05 (24-26)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-05 (65-67)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-55	42	RPSB-55 (10-12)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-55 (40-42)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-56	42	RPSB-56 (5-7)	■	■*	■	--	■	--	■	--	■	■	--	--	--	--	--	--
							RPSB-56 (40-42)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-57	42	RPSB-57 (15-17)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-57 (40-42)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-58	42	RPSB-58 (4-6)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-58 (40-42)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-59	45	RPSB-59 (5-7)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-59 (40-42)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-60	42	RPSB-60 (15-17)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-60 (40-42)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-61	57	RPSB-61 (10-12)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-61 (55-57)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-62	42	RPSB-62 (5-7)	■	■*	■	--	■	--	■	■	■	■	--	--	--	--	--	--
							RPSB-62 (40-42)	■	■*	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-63	47	RPSB-63 (15-17)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-63 (45-47)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
	Surface Soil	Soil	3	3	RPSS-01 thru RPSS-03	0.5	RPSS-01 thru RPSS-03	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
	Soil Vapor/Gas Probes	Soil Vapor	12	12	RPSV-01 thru RPSV-12	3	RPSV-01 thru RPSV-12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--
	Groundwater Probes	---	16	16 (see note 3)	RPGP-01	50	RPGP-01 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
	Groundwater Probe Samples	Water	32	53 (see note 3)			RPGP-01 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-01 (46-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-02	50	RPGP-02 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-02 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-02 (46-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-03	50	RPGP-03 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2-5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS														Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	VOC & SVOC	TAL Metals	Full TCL/TAL	TCLP Organics	TCLP Inorganics	Chloride & TDS	BTEX and Naphthalene	
Rockaway Park Site (Cont.)							RPGP-03 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-03 (46-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-04	30	RPGP-04 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-04 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-05	30	RPGP-05 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-05 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-06	50	RPGP-06 (6-10)	■	--	■	--	--	--	--	--	■*	--	--	--	--	--	--	--
							RPGP-06 (26-30)	■	--	■	--	--	--	--	--	■*	--	--	--	--	--	--	--
							RPGP-06 (46-50)	■	--	■	--	--	--	--	--	■*	--	--	--	--	--	--	--
					RPGP-07	30	RPGP-07 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-07 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-08	50	RPGP-08 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-08 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-08 (46-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-09	90	RPGP-09 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-09 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-09 (46-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-09 (66-70)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-09 (86-90)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-10	90	RPGP-10 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-10 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-10 (46-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-10 (66-70)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-10 (86-90)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-11	30	RPGP-11 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-11 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-12	50	RPGP-12 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-12 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-12 (46-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-13	50	RPGP-13 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-13 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-13 (46-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-14	90	RPGP-14 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-14 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-14 (46-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-14 (66-70)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-14 (86-90)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-15	90	RPGP-15 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-15 (26-30)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-15 (46-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2-5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS														Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	VOC & SVOC	TAL Metals	Full TCL/TAL	TCLP Organics	TCLP Inorganics	Chloride & TDS	BTEX and Naphthalene	
Rockaway Park Site (Cont.)							RPGP-15 (66-70)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-15 (86-90)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-16	75	RPGP-16 (11-15)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-16 (31-35)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-16 (51-55)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-16 (71-75)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
	Groundwater Monitoring Wel Samples	Water	12	16 (see note 4)	RPMW-01S	17	RPMW-01S	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-01I	47	RPMW-01I	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-02S	17	RPMW-02S	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-02I	47	RPMW-02I	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-02D	76	RPMW-02D	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-03S	17	RPMW-03S	■	--	■	--	■	■	--	--	■	■	--	--	--	--	--	--
					RPMW-03I	47	RPMW-03I	■	--	■	--	■	■	--	--	■	■	--	--	--	--	--	--
					RPMW-03D	77	RPMW-03D	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-11S	17	RPMW-11S	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-11I	47	RPMW-11I	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-11D	77	RPMW-11D	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-16S	77	RPMW-16S	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-16I	47	RPMW-16I	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-17S	17	RPMW-17S	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW-17I	47	RPMW-17I	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
					RPMW17D	78	RPMW17D	■	--	■	--	■	■	--	--	■	■	--	--	--	■	--	--
Underground Feeder Cable Investigation	Soil Borings	---	13	13	RPSB-70	12	RPSB-70 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
	Soil Boring Samples	Soil	38	38			RPSB-70 (6-8)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-70 (8-10)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-71	12	RPSB-71 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-71 (6-8)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-71 (8-10)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-72	12	RPSB-72 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-72 (6-8)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-72 (8-10)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-73	14	RPSB-73 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-73 (8-10)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-73 (12-14)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-74	12	RPSB-74 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-74 (8-10)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-74 (10-12)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-75	12	RPSB-75 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-75 (6-8)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--

TABLE 2-5

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS															Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	VOC & SVOC	TAL Metals	Full TCL/TAL	TCLP Organics	TCLP Inorganics	Chloride & TDS	BTEX and Naphthalene	
Underground Feeder Cable Investigation (Cont.)							RPSB-75 (8-10)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-76	12	RPSB-76 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-76 (6-8)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-76 (8-10)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-77	12	RPSB-77 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-77 (6-8)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-77 (8-10)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-78	12	RPSB-78 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-78 (6-8)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-78 (8-10)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-79	12	RPSB-79 (8-10)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-79 (10-12)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-80	12	RPSB-80 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-80 (6-8)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-80 (8-10)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-81	12	RPSB-81 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-81 (6-8)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-81 (8-10)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-82	12	RPSB-82 (4-6)	■	--	■	--	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-82 (6-8)	■	--	■	--	■	--	■	--	--	--	--	■	■	--	--	--
							RPSB-82 (8-10)	■	--	■	--	■	--	■	--	--	--	--			--	--	--
	Soil Vapor/Gas Probes	Soil Vapor	9	8 (see note 5)	RPSV-13 thru RPSV-15 and RPSV-17 thru RPSV-21	3	RPSV-13 thru RPSV-15 and RPSV-17 thru RPSV-21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--
Transmission Cable Investigation	Soil Borings	---	24	24	RPSB-88	10	RPSB-88 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
	Soil Boring Samples	Soil	35	35	RPSB-90	20	RPSB-90 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
							RPSB-90 (16-18)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-91	30	RPSB-91 (6-8)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
							RPSB-91 (28-30)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-92	56	RPSB-92 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-93	30	RPSB-93 (6-8)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-94	20	RPSB-94 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-95	40	RPSB-95 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
							RPSB-95 (36-38)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-96	40	RPSB-96 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
							RPSB-96 (38-40)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-98	40	RPSB-98 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
							RPSB-98 (38-40)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-98A	20	RPSB-98A (6-8)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
							RPSB-98A (18-20)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-99	40	RPSB-99 (6-8)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--

TABLE 2-5

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS															Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	VOC & SVOC	TAL Metals	Full TCL/TAL	TCLP Organics	TCLP Inorganics	Chloride & TDS	BTEX and Naphthalene	
Transmission Cable Investigation (Cont.)							RPSB-99 (38-40)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-100	40	RPSB-100 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
							RPSB-100 (36-38)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-101	41	RPSB-101 (5-7)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
							RPSB-101 (15-17)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
							RPSB-101 (39-41)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-102	31	RPSB-102 (5-7)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
							RPSB-102 (29-31)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-103	10	RPSB-103 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-104	10	RPSB-104 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-105	10	RPSB-105 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-106	10	RPSB-106 (6-8)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-107	10	RPSB-107 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-108	10	RPSB-108 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-109	10	RPSB-109 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-110	10	RPSB-110 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-111	11	RPSB-111 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
					RPSB-112	10	RPSB-112 (4-6)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	--	--
	Soil Vapor/Gas Probes	Soil Vapor	3	3	RPSV-22 thru RPSV-24	3	RPSV-22 thru RPSV-24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--
	Groundwater Probes	---	3	3	RPGP-17	10	RPGP-17 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
	Groundwater Probe Samples	Water	3	3	RPGP-18	12	RPGP-18 (8-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-19	10	RPGP-19 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
Bulkhead Investigation	Soil Borings	---	5	12 (see note 6)	RPSB-IRM-01	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Soil Boring Samples	Soil	20	23 (see note 6)	RPSB-IRM-02	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPSB-83	44	RPSB-83 (4-6)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-83 (9-11)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-83 (40-41)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-84	42	RPSB-84 (4-5)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-84 (24-26)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-84 (36-37)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-85	50	RPSB-85 (0-2)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-85 (24-25.5)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-85 (36-38)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-86	46	RPSB-86 (4-6)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-86 (21-22)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-86 (40-41)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-87	42	RPSB-87 (4-6)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-87 (21-23)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-87 (37-39)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-87A	60	RPSB-87A (38-40)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--

TABLE 2-5

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

SITE/INVESTIGATION	ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH (feet)	SAMPLE ID	ANALYTICAL PARAMETERS															Geotechnical Sampling
			PROPOSED	ACTUAL				BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	VOC & SVOC	TAL Metals	Full TCL/TAL	TCLP Organics	TCLP Inorganics	Chloride & TDS	BTEX and Naphthalene	
Bulkhead Investigation (Cont.)							RPSB-87A (58-60)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-113	12	RPSB-113 (0-2)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-114	12	RPSB-114 (4-6)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-115	12	RPSB-115 (8-10)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
					RPSB-116	70	RPSB-116 (44-46)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-116 (54-56)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
							RPSB-116 (66-68)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
	Surface Soil	Soil	5	8 (see note 7)	RPSS-17 thru RPSS-24	0.5	RPSS-17 thru RPSS-24	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
	Groundwater Probes	---	5	5	RPGP-20	56	RPGP-20 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
	Groundwater Probe Samples	Water	22	22			RPGP-20 (22-26)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-20 (40-44)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-20 (52-56)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-21	94	RPGP-21 (8-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-21 (22-26)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-21 (52-56)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-21 (80-84)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-21 (90-94)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-22	94	RPGP-22 (8-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-22 (22-26)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-22 (52-56)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-22 (80-84)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-22 (90-94)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-23	56	RPGP-23 (8-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-23 (22-26)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-23 (40-44)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-23 (53-56)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					RPGP-24	56	RPGP-24 (8-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-24 (22-26)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-24 (40-44)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
							RPGP-24 (52-56)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

(1) One additional soil boring (RPSB-02A) was advanced along Beach Channel Drive to characterize subsurface soil.

(2) Two additional soil samples were collected from soil boring RPSB-02A and one additional soil sample was collected from soil boring RPSB-05.

(3) Although the number of groundwater probes remained the same, the number of groundwater probe samples increased from 32 to 53.

(4) Groundwater samples were collected from four additional groundwater monitoring wells.

(5) One soil vapor sample (RPSV-16) was eliminated from the Feeder Cable Investigation because its location was in the vicinity of sample RPSV-10 which was analyzed as part of the Remedial Investigation.

(6) Seven additional soil borings and three additional soil samples were added to the Bulkhead Investigation by the NYSDEC.

(7) Three additional surface soil samples were added to the Bulkhead Investigation by the NYSDEC.

* Analytical parameter added subsequent to Final Work Plan.

-- : not applicable.

The analytical results of the surface soil samples are presented and discussed in **Section 4.3.1**.

Subsurface Soil

Fifteen soil probes were advanced at off-site locations, during the Rockaway Park former MGP remedial investigation. The Geoprobe system was utilized at soil borings RPSB-01, RPSB-02, RPSB-02A, RPSB-03, RPSB-04, RPSB-05, RPSB-55, PRSB-56, RPSB-57, and RPSB-63. The hollow stem auger drilling method was utilized at soil borings RPSB-58, RPSB-59, RPSB-60, RPSB-61, and RPSB-62. Off-site subsurface soil sampling was conducted along the northern boundary of Beach Channel Drive, along the east side of Beach 108th Street, along the south side of Rockaway Freeway and at three locations south of the Metropolitan Transit Authority (MTA) elevated railroad tracks. The soil probes were advanced to depths ranging between 40 feet bgs and 67 feet bgs. Consistent with the approved Work Plan, soil samples were collected continuously from certain soil borings while other soil borings were sampled at 5-foot intervals over the entire soil boring depth.

Two subsurface soil samples were collected at all of the subsurface soil sampling locations with the exception of soil boring RPSB-05, where three samples were collected and submitted for laboratory analysis. Boring logs are included in **Appendix C**.

As discussed in **Section 1.7**, a total of 13 soil probes were advanced to a depth of approximately 12 feet bgs in order to characterize shallow subsurface soil quality as part of the Underground Feeder Cable Investigation. Continuous soil samples were collected from each soil probe and based on field observations, three soil samples were collected at each location and retained for laboratory analysis. Boring logs are included in **Appendix C**.

In addition, 22 soil borings were advanced to varying depths as part of the Transmission Cable Investigation completed in November 2001. Soil samples were collected at each location for laboratory analysis. Boring logs are included in **Appendix C**. Similarly, 12 soil borings

were advanced to varying depths as part of the Bulkhead Investigation that was completed in April 2002.

The analytical results of the subsurface soil samples are presented and discussed in **Section 4.3.2**.

Groundwater Probes

A total of 16 groundwater probes were advanced off-site. Two of these probes were advanced off-site and downgradient of the site in order to further characterize the horizontal and vertical extent of chemical constituents in groundwater downgradient (to the north along Beach Channel Drive) of the site. Three of the groundwater probes were advanced at off-site, side-gradient (east) locations to define groundwater quality, and two groundwater probes were advanced at off-site, side-gradient (west) locations to define groundwater quality. In addition, eight groundwater probes were advanced at off-site, upgradient (south) locations to define upgradient groundwater quality. The number of probes and the sampling depths and location of each were determined based on the nature and extent of chemicals in groundwater, as defined through prior investigations, as well as the estimated direction of groundwater flow.

In general, depending upon topography, drilling conditions and depth to the water table, the probes were advanced to the following target depths: shallow interval of 6 to 10 feet bgs (water table); intermediate interval of approximately 26 to 30 feet bgs; deep interval of 46 to 50 feet bgs, second deep interval of 66 to 70 feet bgs and the third deep interval of 86 to 90 feet bgs. A total of 53 groundwater samples were collected for analysis.

In addition, three groundwater probes were advanced to a depth of 10 feet bgs as part of the Transmission Cable Investigation completed in November 2001. Groundwater probe samples were collected from 6 to 10 feet bgs for laboratory analysis.

Five groundwater probes were also advanced to depths of 56 and 94 feet bgs as part of the Bulkhead Investigation completed in April 2002. Groundwater probes were collected from various intervals for laboratory analysis.

The analytical results of the groundwater probe samples are presented and discussed in **Section 4.3.3**.

Groundwater Monitoring Wells

A total of 16 monitoring wells were installed at six off-site locations in order to characterize off-site groundwater. The number of wells and the depth and location of each well were determined based on the results of the initial round of groundwater sampling, the results of the groundwater probe sampling program and the direction of groundwater flow. The wells were located and installed as follows: four well clusters, each comprised of shallow, intermediate and deep wells; and two well clusters consisting of shallow and intermediate wells. The construction of the off-site groundwater monitoring wells was consistent with the procedures and practices for the on-site monitoring wells, as described in **Section 2.2**. All of the groundwater monitoring wells were completed at grade with flush-mounted manhole covers.

The depth of each well depended upon topography and the depth to the water table. Shallow wells are approximately 17 feet bgs in depth, intermediate wells are approximately 47 bgs in depth and deep wells are approximately 77 feet bgs in depth. **Figure 2-1** shows the typical construction of a new monitoring well cluster. Well depths and construction details for all installed off-site wells are summarized in **Table 2-3**. Boring logs for the monitoring wells are included in **Appendix C**.

In general, soil cuttings generated during the installation of off-site groundwater monitoring wells exhibited no visible evidence of staining, odors or elevated PID measurements. Therefore, the soil was transported back to the Rockaway Park site and stockpiled in one central location on the site.

Upon completion, all wells were developed in accordance with the procedures described under **Section 2.3**. All development water was containerized and transported back to the Rockaway Park site and pumped into the on-site storage tanks.

Groundwater samples were collected from the 16 newly installed monitoring wells. The analytical results of the groundwater samples are presented and discussed in **Section 4.3.4**.

Soil Vapor

A total of 20 soil vapor probe samples were collected from off-site locations around the perimeter of the site. Eight of the 20 soil vapor probes were advanced as part of the Underground Feeder Cable Investigation. Soil vapor probe samples were collected in order to assess the potential for off-site migration of any vapors.

In addition, three soil vapor probe samples were collected along the south side of Beach Channel Drive as part of the Transmission Cable Investigation completed in November 2001.

The analytical results of the soil vapor samples are presented and discussed in **Section 4.3.5**.

2.7 Cut and Plug Interim Remedial Measure

As stated previously in **Section 1.8**, the Cut and Plug IRM was undertaken to locate and cap underground piping associated with historic MGP operations in an effort to limit the potential for off-site migration of any residual MGP-related materials. In January 1999, Foster Wheeler was retained by KeySpan to conduct this IRM. A total of 11 trenches were excavated at the site between January 12 and 25, 1999. **Drawing 1C** shows the location of each completed excavation and is provided in a map pocket at the end of **Section 1.0**.

Pipes suspected of containing natural gas were first tapped and tested before cut and plug activities took place. The 11 trenches excavated at the Rockaway Park site, included Excavations

1 through 8 and 11, located along the northern site boundary, and excavations 9 and 10, located along the southern site boundary. Ten pipes ranging in diameter from 2 inches to 20 inches were exposed in excavations. Pipes were cut, drained of any liquid contents and plugged with concrete by Coastal Environmental Technologies (Coastal). Coastal contained any contents drained form piping and transported the material off-site for proper disposal. After completing this operation, the excavations were backfilled. No pipes were uncovered at excavation Nos. 3 and 8.

During the cut and plug IRM, a total of eight soil samples were recovered during the completion of selected trenches and analyzed for BTEX compounds by Method 8020, PAHs by Method 8270, RCRA metals by Methods 6010/7471 and total cyanide by Method 9012. The samples selected for analysis were collected from excavations where visible staining or MGP-related materials were noted. Soil samples RPCP-01, RPCP-02, RPCP-05, RPCP-06, RPCP-07, RPCP-08, RPCP-09 and RPCP-10 were collected from excavations 1, 2, 5, 6, 7, 8, 9, and 10, respectively. Soil samples were generally collected from the middle of the excavations based on visual observations and PID readings. The analytical results for these samples are provided in **Appendix B**.

2.8 Water Level Measurements

Groundwater level measurements were recorded during the groundwater sampling conducted between March 3 and 20, 2000. An additional round of groundwater levels were recorded on March 21, 2000, over a 4.5 hour period. The groundwater levels of the existing and newly installed, on-site and off-site groundwater monitoring wells were measured. Groundwater level measurements were taken utilizing a Solinist TM water level indicator to an accuracy of 0.01 foot. The presence of free product was measured in the groundwater monitoring wells that did not contain a pressure transducer for the tidal study. A Solinist TM interface meter was utilized to check for the presence and measurement of the free product thickness in the groundwater monitoring wells. The groundwater level data is summarized in **Table 2-6**.

TABLE 2-6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER ELEVATIONS - MARCH 21, 2000

MONITORING WELL ID	MEASURING POINT ELEVATION (feet above msl) (1)	DEPTH TO WATER (feet)	WATER ELEVATION (feet above msl)
MW-01	8.53	6.82	1.71
MW-03	7.01	5.15	1.86
MW-A	9.05	7.39	1.66
PZ-01	7.57	5.48	2.09
PZ-02	8.25	6.23	2.02
PZ-03	7.03	5.09	1.94
PZ-04	9.66	7.45	2.21
PZ-05	9.76	7.47	2.29
PZ-06	9.37	7.05	2.32
PZ-07	7.68	5.47	2.21
PZ-08	7.18	6.52	0.66
RPMW-01I	8.06	5.33	2.73
RPMW-01S	8.24	6.06	2.18
RPMW-02D	11.09	6.14	4.95
RPMW-02I	10.94	8.57	2.37
RPMW-02S	11.17	9.54	1.63
RPMW-03D	8.03	6.06	1.97
RPMW-03I	7.32	5.43	1.89
RPMW-03S	7.13	5.89	1.24
RPMW-04I	10.7	10.33	0.37
RPMW-04S	11.48	9.54	1.94
RPMW-05I	11.7	10.48	1.22
RPMW-05S	11.3	9.58	1.72
RPMW-06I	12.49	11.35	1.14
RPMW-07D	7.82	6.80	1.02
RPMW-07I	7.86	6.05	1.81
RPMW-07S	7.89	5.86	2.03
RPMW-08I	11.79	9.72	2.07
RPMW-08S	11.84	9.66	2.18
RPMW-09D	10.08	9.13	0.95
RPMW-09D2	10.2	9.44	0.76
RPMW-09I	10.16	8.37	1.79
RPMW-10I	11.18	10.62	0.56
RPMW-10S	11.14	9.45	1.69
RPMW-11D	9.57	7.42	2.15
RPMW-11I	9.65	7.05	2.6
RPMW-11S	9.63	5.89	3.74
RPMW-12D	12.71	11.21	1.5
RPMW-12D2	12.81	11.74	1.07
RPMW-12I	13.34	10.96	2.38
RPMW-12S	13.46	11.11	2.35
RPMW-13D	14.1	12.52	1.58
RPMW-13D2	14.2	13.06	1.14
RPMW-13I	13.96	11.61	2.35
RPMW-13S	13.78	11.46	2.32
RPMW-14D	12.41	11.03	1.38
RPMW-14I	12.04	9.77	2.27
RPMW-14S	11.38	9.15	2.23
RPMW-15I	10.22	8.28	1.94
RPMW-16I	8.34	5.48	2.86
RPMW-16S	8.29	5.63	2.66
RPMW-17D	7.57	5.67	1.9
RPMW-17I	7.59	5.65	1.94
RPMW-17S	7.45	5.80	1.65

NOTES:
(1) Top of casing elevation.

In addition, groundwater levels were recorded on November 30, 2001 during high and low tides as part of the Bulkhead Investigation. The groundwater levels of all on-site and off-site monitoring wells were measured. A Solinist TM interface meter was utilized to check for the presence and measurement of free product. The groundwater levels recorded on November 30, 2001 are summarized in **Table 2-7**.

2.9 Surveying and Mapping

All existing and new monitoring well locations, soil borings, casing elevations, groundwater probes, test pits, and groundwater probes were surveyed by a licensed surveyor and located on a base map. Top of casing measurements for wells were utilized in determining water table elevations. Surveyed locations for completed sample points are shown on **Drawing 2** provided in the map pocket at the end of this section of the report.

2.10 Tidal Study

A tidal study was performed at the Rockaway Park former MGP site between March 20, 2000, and March 22, 2000, during the spring tides immediately following the full moon of March 20th. Spring tides occur with full and dark moons when strong gravitational forces resulting from solar-lunar alignment produce the earth's highest high and lowest low tides. Nine shallow wells, including RPMW-04S, RPMW-07S, RPMW-10S, RPMW-12S, RPMW-13S, RPMW-14S, MW-A, PZ-03 and PZ-04; two intermediate wells, RPMW-07I and RPMW-09I; and deep well RPMW-07D were selected for water level monitoring during the approximately 48 hour long tidal survey. The tidal study was conducted in order to identify how and/or if tidal influences affect shallow groundwater flow at the site. Additionally, data collected from the intermediate and deep wells was used to examine generalized tidal response of intermediate and deep groundwater at the site.

MiniTROLL pressure transducer/data loggers, manufactured by In-Situ, Inc. of Laramie, Wyoming, were deployed in each of the selected monitoring wells to depths of 10.5 to 17.5 feet below the tops of casings. In addition, a MiniTROLL transducer/data logger was deployed in

TABLE 2-7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER ELEVATIONS - NOVEMBER 30, 2001

MONITORING WELL ID	MEASURING POINT ELEVATION (feet above msl) (1)	TIDAL STAGE	TIME (hh:mm)	DEPTH TO WATER (feet)	WATER ELEVATION (feet above msl)
MW-01	8.53	High	07:52	6.55	1.98
MW-01	8.53	Low	14:10	7.00	1.53
MW-03	7.01	High	07:46	4.58	2.43
MW-03	7.01	Low	14:11	5.45	1.56
MW-A	9.05	High	07:51	6.86	2.19
MW-A	9.05	Low	14:10	7.54	1.51
PZ-01	7.57	High	07:38	5.06	2.51
PZ-01	7.57	Low	13:55	5.82	1.75
PZ-02	8.25	High	07:50	6.10	2.15
PZ-02	8.25	Low	14:07	6.57	1.68
PZ-03	7.03	High	07:48	4.74	2.29
PZ-03	7.03	Low	14:13	5.20	1.83
PZ-04	9.66	High	07:51	7.01	2.65
PZ-04	9.66	Low	14:11	7.58	2.08
PZ-05	9.76	High	07:40	6.94	2.82
PZ-05	9.76	Low	13:58	7.86	1.90
PZ-06	9.37	High	07:25	6.65	2.72
PZ-06	9.37	Low	13:45	7.21	2.16
PZ-08	7.18	High	07:42	4.51	2.67
PZ-08	7.18	Low	14:05	5.46	1.72
RPMW-01I	8.06	High	07:37	4.15	3.91
RPMW-01I	8.06	Low	14:07	7.89	0.17
RPMW-01S	8.24	High	07:36	4.55	3.69
RPMW-01S	8.24	Low	14:06	7.40	0.84
RPMW-02D	11.09	High	07:32	7.52	3.57
RPMW-02D	11.09	Low	14:02	11.63	-0.54
RPMW-02I	10.94	High	07:31	7.04	3.90
RPMW-02I	10.94	Low	14:01	11.10	-0.16
RPMW-02S	11.17	High	07:30	9.08	2.09
RPMW-02S	11.17	Low	14:00	9.60	1.57
RPMW-03D	8.03	High	07:26	4.61	3.42
RPMW-03D	8.03	Low	13:49	7.95	0.08
RPMW-03I	7.32	High	07:27	4.11	3.21
RPMW-03I	7.32	Low	13:48	7.25	0.07
RPMW-03S	7.13	High	07:28	5.14	1.99
RPMW-03S	7.13	Low	13:47	5.92	1.21
RPMW-04I	10.70	High	07:31	8.20	2.50
RPMW-04I	10.70	Low	13:49	10.70	0.00
RPMW-04S	11.48	High	07:32	8.96	2.52
RPMW-04S	11.48	Low	13:50	9.64	1.84
RPMW-05I	11.70	High	07:34	8.02	3.68
RPMW-05I	11.70	Low	13:52	11.13	0.57
RPMW-05S	11.30	High	07:35	9.36	1.94
RPMW-05S	11.30	Low	13:54	9.37	1.93
RPMW-06I	12.49	High	07:47	9.33	3.16
RPMW-06I	12.49	Low	14:02	11.79	0.70
RPMW-07D	7.86	High	07:41	4.68	3.18
RPMW-07D	7.86	Low	13:57	7.69	0.17
RPMW-07I	7.89	High	07:43	5.27	2.62
RPMW-07I	7.89	Low	14:00	6.89	1.00
RPMW-07S	7.82	High	07:45	5.36	2.46
RPMW-07S	7.82	Low	13:59	6.11	1.71
RPMW-08I	11.79	High	07:27	8.83	2.96
RPMW-08I	11.79	Low	13:48	9.96	1.83

TABLE 2-7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER ELEVATIONS - NOVEMBER 30, 2001

MONITORING WELL ID	MEASURING POINT ELEVATION (feet above msl) (1)	TIDAL STAGE	TIME (hh:mm)	DEPTH TO WATER (feet)	WATER ELEVATION (feet above msl)
RPMW-08S	11.84	High	07:28	9.13	2.71
RPMW-08S	11.84	Low	13:47	9.81	2.03
RPMW-09D	10.08	High	07:45	7.81	2.27
RPMW-09D	10.08	Low	14:02	9.36	0.72
RPMW-09D2	10.20	High	07:46	8.01	2.19
RPMW-09D2	10.20	Low	14:03	9.73	0.47
RPMW-09I	10.16	High	07:48	7.06	3.10
RPMW-09I	10.16	Low	14:03	8.55	1.61
RPMW-10I	11.18	High	07:45	8.70	2.48
RPMW-10I	11.18	Low	14:10	9.97	1.21
RPMW-10S	11.14	High	07:44	9.14	2.00
RPMW-10S	11.14	Low	14:09	9.50	1.64
RPMW-11D	9.57	High	07:35	6.24	3.33
RPMW-11D	9.57	Low	14:05	10.37	-0.80
RPMW-11I	9.65	High	07:34	5.58	4.07
RPMW-11I	9.65	Low	14:04	9.81	-0.16
RPMW-11S	9.63	High	07:33	7.03	2.60
RPMW-11S	9.63	Low	14:03	8.50	1.13
RPMW-12D	12.71	High	07:25	10.52	2.19
RPMW-12D	12.71	Low	13:43	11.38	1.33
RPMW-12D2	12.81	High	07:23	10.89	1.92
RPMW-12D2	12.81	Low	13:45	11.93	0.88
RPMW-12I	13.34	High	07:28	10.49	2.85
RPMW-12I	13.34	Low	13:46	11.18	2.16
RPMW-12S	13.46	High	07:27	10.68	2.78
RPMW-12S	13.46	Low	13:47	11.15	2.31
RPMW-13D	14.10	High	07:32	11.89	2.21
RPMW-13D	14.10	Low	13:51	12.65	1.45
RPMW-13D2	14.20	High	07:33	12.31	1.89
RPMW-13D2	14.20	Low	13:49	13.26	0.94
RPMW-13I	13.96	High	07:35	11.11	2.85
RPMW-13I	13.96	Low	13:52	11.84	2.12
RPMW-13S	13.78	High	07:37	11.02	2.76
RPMW-13S	13.78	Low	13:53	11.59	2.19
RPMW-14D	12.41	High	07:53	10.46	1.95
RPMW-14D	12.41	Low	14:15	11.24	1.17
RPMW-14I	12.04	High	07:54	9.31	2.73
RPMW-14I	12.04	Low	14:14	10.04	2.00
RPMW-14S	11.38	High	07:56	8.74	2.64
RPMW-14S	11.38	Low	14:13	9.29	2.09
RPMW-15I	10.22	High	07:47	7.78	2.44
RPMW-15I	10.22	Low	14:12	8.56	1.66
RPMW-17D	7.57	High	07:22	5.29	2.28
RPMW-17D	7.57	Low	13:45	6.07	1.50
RPMW-17I	7.59	High	07:23	5.24	2.35
RPMW-17I	7.59	Low	13:46	5.97	1.62
RPMW-17S	7.45	High	07:21	5.61	1.84
RPMW-17S	7.45	Low	13:44	6.09	1.36
RPTG-02	7.91	High	07:29	3.61	4.30
RPTG-02	7.91	Low	13:59	10.00	-2.09

NOTES:
(1) Top of casing elevation.

Jamaica Bay off the bulkhead of the Wharf Restaurant, located approximately 200 feet west of the site in order to measure tidal range in the Bay during the survey period. When the transducers were installed, data loggers were set to convert the pressure head of the water column above each transducer to elevation head, or height of the water column above each MiniTROLL. All data loggers were recording pressure head data by March 20, 2000, at 17:24 hours and continued to record pressure head until March 22, 2000, at 15:00 hours. On March 21, 2000, field personnel measured water depths in each well and recorded the time at which each measurement was made. Win-Situ™ software was used to convert pressure head to elevation head in feet of water above the MiniTROLLs. Groundwater elevations calculated from these water level measurements were correlated with head measurements from the data loggers. Head data was normalized relative to mean sea level elevation using Win-Situ™ software and elevation values derived from field measurements.

2.11 Laboratory Analysis and Data Management

The data collected as part of and in support of the field investigations for the site and surrounding areas was managed using the GIS/Key Data Management System.

GIS/Key was utilized for the management of both geological and chemical data. Boring logs, test pit logs and monitoring well construction logs were entered into GIS/Key in order to establish a geological database and produce geologic cross-sections across the site.

The analytical data was transmitted by the laboratory, Mitkem Corporation, in both hard copy and electronic disk deliverable (EDD) format. The EDD was submitted in a data base file (dbf) format for direct import into GIS/Key. Once the data was imported into GIS/Key, reports were generated and checked against the hard copy data packages to ensure data integrity and completeness.

2.12 Data Validation/Data Usability

All analytical data packages submitted by both laboratories, Mitkem Corporation (Mitkem) and Air Toxics Ltd. (Air Toxics), were validated in accordance with NYSDEC 10/95 Analytical Services Protocol (ASP) Quality Assurance/Quality Control (QA/QC) requirements. Data validation was performed by D&B's QA/QC officer who has the qualifications required by NYSDEC to perform data validation.

The data packages were reviewed for transcription errors, as well as compliance with analytical methods and QA/QC requirements.

2.12.1 Sample Collection and Analysis

The field program consisted of collecting samples from various environmental media, including surface soil, subsurface soil, Geoprobe groundwater, monitoring well groundwater, ambient air and soil vapor. Sample collection was performed in accordance with the procedures set forth in the Work Plan for the site, dated November 1999. The water and soil samples were analyzed by Mitkem, a subcontractor to D&B, in accordance with the USEPA SW-846 methods stipulated in the work plan, as well as NYSDEC ASP QA/QC requirements. The ambient air and soil vapor samples were analyzed by Air Toxics, a subcontractor to D&B, in accordance with a modified EPA Method TO-14 in order to include naphthalene in the volatile compound list.

The environmental samples were primarily analyzed for the following parameters:

Sample Type	Analytical Parameters
Geoprobe Groundwater	BTEX and PAHs
Monitoring Well Groundwater	TAL Metals, TCL VOCs and SVOCs, total and free cyanide, total dissolved solids and chlorides
Soil Borings, Test Pits (Subsurface Soil)	BTEX, PAHs, RCRA metals, total cyanide and phenols

Sample Type	Analytical Parameters
Surface Soil	BTEX, PAHs, RCRA metals and total cyanide
Ambient Air	BTEX and naphthalene
Soil Vapor	BTEX and naphthalene

In addition to the above analyses, select environmental samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals, pesticides and PCBs. Analytical methods and detection limits are provided in **Appendix D**.

2.12.2 Data Quality Objectives

The primary objective for this investigation was to obtain valid, defensible data to be used to determine the nature, extent and sources of chemical constituents at the site, prepare a risk assessment and identify, evaluate and recommend a cost effective, environmentally sound long-term remedial action plan. The data was also utilized to monitor for the health and safety of workers at the site and potential receptors off-site. This objective was achieved by designing a sampling program to encompass the entire site and surrounding area. The laboratory selected for analysis needed to be both New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified for organic and inorganic parameters and NYSDOH Contract Laboratory Program (CLP) certified.

To ensure data quality, several types of quality control (QC) measures were taken. QC samples were collected (field blanks, spikes and duplicates) at a rate of 1 per 20 environmental samples. Trip blanks accompanied all shipments of water samples which required volatile organic or BTEX analysis. All samples for organic analyses were spiked with surrogate and/or internal standard compounds in order to determine the integrity/reliability of the sample results.

To determine the comparability of the sample results, matrix spikes and matrix spike duplicates were analyzed for the organic parameters and spikes and duplicates were run for inorganic parameters. In addition, the analytical methods also require that specific laboratory

QA/QC measures be taken during analysis (i.e., calibrations, blanks, control samples, spiked blanks, etc.).

2.12.3 Data Quality and Usability

In order to determine the quality and usability of the sample results, the data packages, submitted by the laboratories, were validated. Data validation was performed in accordance with NYSDEC 10/95 ASP QA/QC requirements. A validation report was prepared for each sample delivery group (SDG) or data package. Copies of these reports are maintained in the project files.

All of the environmental sample results, as well as all QA/QC results, were reviewed to yield a "100% validation," as required by the work plan. Overall, the quality of the data was acceptable and the results were determined to be usable for environmental assessment purposes. The findings of the validation process are summarized below.

General Findings

All sample analyses were performed within the method specified holding times.

The PAH fraction of sample RPSB-17 (5-7) was not analyzed due to a laboratory accident. The chromatogram of this sample exhibited a significant amount of late-eluting peaks which could be associated with PAH compounds.

The pesticide fraction for soil sample RPSB-25 (4-6) contained a large interference peak, which the laboratory assumed to be elemental sulfur. The pesticide results for this sample have been qualified as "estimated" with possible false positives being reported.

Several samples required reanalysis due to surrogate recoveries or internal standard area counts being outside QC limits. The data summary tables contain the "best set" of data that were deemed to be most contractually compliant.

Several samples required reanalysis at secondary dilutions due to compound concentrations exceeding the instrument calibration range. The results for the compounds which required the additional dilution have been qualified with "D" on the data summary tables.

The acetone and methylene chloride results which are flagged with "B" on the data summary tables have been qualified as non-detect. The method blank associated with these samples also contained these compounds and the sample concentration was less than five times the concentration detected in the method blank.

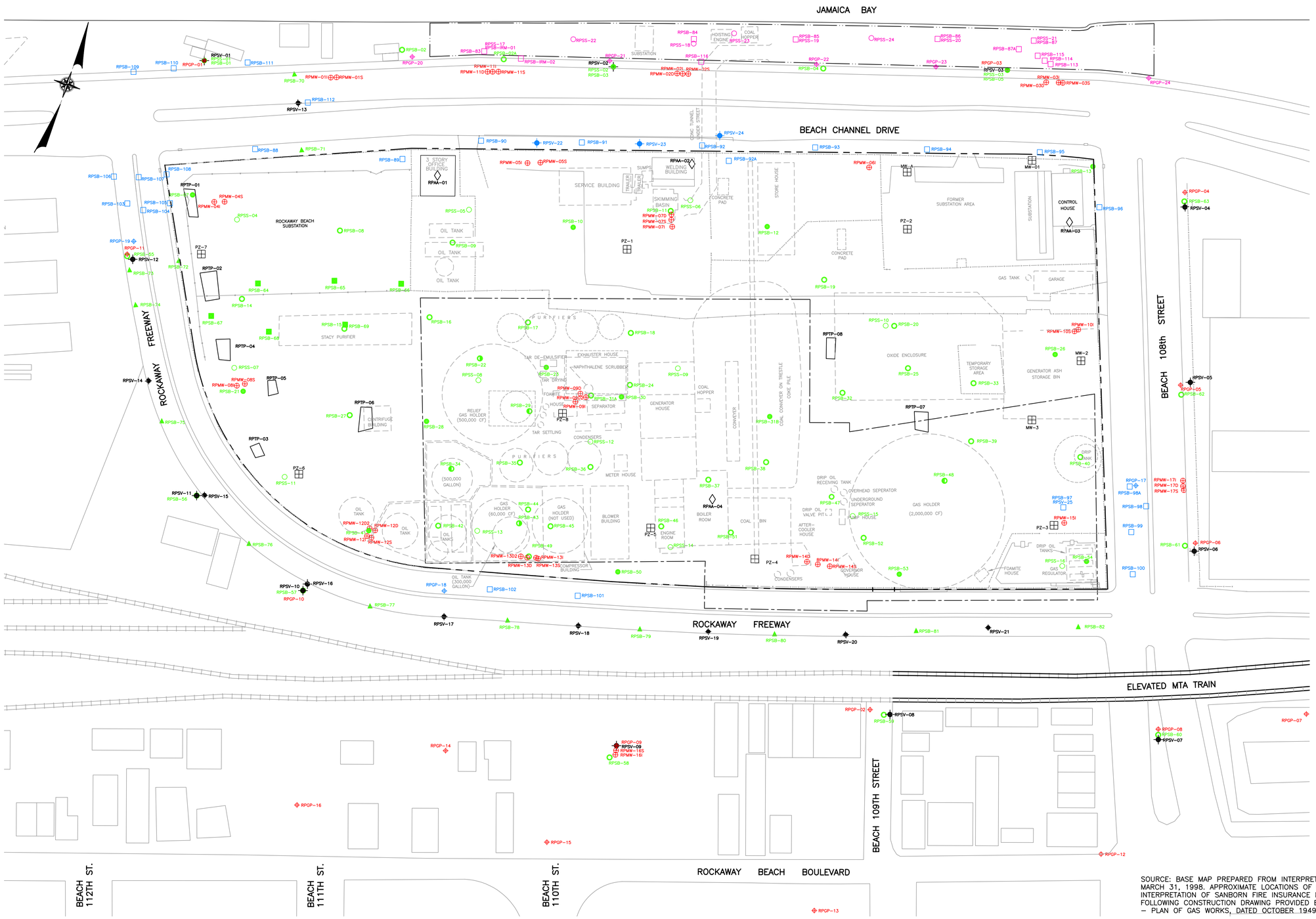
All sample analyses were performed in accordance with the methods stipulated in the project-specific work plan.

Several BTEX samples analyzed as part of the Underground Feeder Cable Investigation required reanalysis due to surrogate recoveries being outside QC limits. The reanalyses yielded similar results proving matrix interference. No further action was required by the laboratory. The "best set" of data has been included on the data summary tables.

Subsurface soil samples were collected from six soil borings (RPSB-64 through RPSB-69) as part of the Substation Investigation at the former Rockaway Park MGP site. The samples were analyzed for BTEX, PAH compounds, RCRA metals and phenols. Sample analysis was performed by Mitkem Corporation, a subcontractor to D&B. All sample analyses were performed in accordance with the USEPA SW-846 methods stipulated in the project-specific work plan.

Several samples collected as part of the Transmission Cable and Bulkhead Investigations required reanalysis at a secondary dilution due to compound concentrations exceeding the instrument calibration range. The data for these compounds were taken from the diluted runs and are included on the summary tables flagged with a "D."

No problems were found with the sample results and all data is deemed valid and usable for environmental assessment purposes as qualified above.



LEGEND:

PZ-01/ MW-01	EXISTING PIEZOMETER/WELL LOCATION FROM PREVIOUS INVESTIGATION
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING)
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (SAMPLING AT 5-FOOT INTERVALS)
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING 0-25 FEET BGS., SAMPLING AT 5-FOOT INTERVALS THEREAFTER)
RPSS-01	SURFACE SOIL SAMPLING LOCATION
RPMW-01S	GROUNDWATER MONITORING WELL LOCATION (SHALLOW ZONE)
RPMW-01I	GROUNDWATER MONITORING WELL LOCATION (INTERMEDIATE ZONE)
RPMW-01D	GROUNDWATER MONITORING WELL LOCATION (DEEP ZONE)
RPMW-01D2	GROUNDWATER MONITORING WELL LOCATION (VERY DEEP ZONE)
RPGP-01	GROUNDWATER PROBE LOCATION
RPSV-01	SOIL VAPOR/GAS PROBE LOCATION
RPAA-01	AMBIENT AIR SAMPLING LOCATION
RPTP-01	TEST PIT EXCAVATION LOCATION
RPSV-13	SOIL VAPOR/GAS PROBE LOCATION FROM D&B FEEDER CABLE INVESTIGATION-MARCH 2000
RPSB-74	SOIL SAMPLE LOCATION FROM D&B FEEDER CABLE INVESTIGATION-MARCH 2000
RPSB-64	SOIL SAMPLE LOCATION FROM D&B SUBSTATION INVESTIGATION AND DELISTING PETITION-AUGUST 2000
RPSB-88	SOIL SAMPLE LOCATION FROM D&B TRANSMISSION CABLE INVESTIGATION-NOVEMBER 2001
RPGP-17	GROUNDWATER PROBE LOCATION FROM D&B TRANSMISSION CABLE INVESTIGATION-NOVEMBER 2001
RPSV-22	SOIL VAPOR/GAS PROBE LOCATION FROM D&B TRANSMISSION CABLE INVESTIGATION-NOBEMVER 2001
RPSB-83	SOIL SAMPLE LOCATION FROM D&B BULKHEAD INVESTIGATION-APRIL 2002
RPGP-20	GROUNDWATER PROBE LOCATION FROM D&B BULKHEAD INVESTIGATION-APRIL 2002
RPSS-17	SURFACE SOIL SAMPLING LOCATION FROM D&B BULKHEAD INVESTIGATION-APRIL 2002
	APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
	LOCATION OF EXISTING STRUCTURE
	APPROXIMATE 1912 SITE BOUNDARY
	CURRENT SITE BOUNDARY
	FORMERLY OWNED PROPERTY
	FENCE

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
- PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

NOTE: SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS.

0 50
SCALE IN FEET

NO.	DATE	REVISION	INT.

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DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

SAMPLE LOCATION MAP

PROJECT NO. 1620-C
DATE: OCTOBER 2002
SCALE: AS SHOWN
DRAWING NO. 2

\\N4\CADwork\1620\ROCKAWAY\PARK\SAMPLE LOC. MAP.dwg, 10/09/02 09:42:50 AM, JPadgyn

3.0 SITE GEOLOGY AND HYDROGEOLOGY

3.1 Introduction

The following section presents the findings, as well as a discussion and interpretation of geologic and hydrogeologic data collected during the field investigation. Data generated as part of this field investigation and utilized in this evaluation included the following:

- Logs from completed borings and monitoring wells;
- Geotechnical analysis of selected soil samples;
- Available boring logs from previously completed site investigations;
- Hydraulic head measurements from existing and newly installed monitoring wells; and
- Tidal water level measurements obtained during a 48-hour tidal survey that measured water levels in selected monitoring wells and surface water levels at a tidal gauging station established on Jamaica Bay located within the study area.

This data was evaluated and interpreted in conjunction with the regional geology and hydrogeology characterization of the study area, as presented in **Sections 1.5.7** and **1.5.8**, respectively.

Based on the information described above, a number of geologic cross-sections of the site were generated, which are depicted on **Drawings 3A** and **3B** located in map pockets at the end of this section of the report. The locations of probes, borings and monitoring wells referenced in this section are shown on **Drawing 2**, and boring logs and test pit logs are included in **Appendix C**.

3.2 Recent (Post Glacial) Geologic and Fill Deposits

Three stratigraphic units within the Rockaway Park former MGP site can be considered recent/post glacial or Holocene-aged geologic units including: a recent fill unit, a Holocene-aged

barrier island deposit and what appears to be an early-Holocene-aged, fine grained transitional unit immediately underlying the barrier island deposits. The following is a detailed description of each unit.

Fill Material

Fill material is distributed throughout most of the Rockaway Park site and was placed in a series of bayward expansions that occurred between at least the late 1800s and the 1930s. Several sub-parallel buried retaining walls and wall remnants mark former bulkheads that supported this expansion. According to information presented in the 1997 Phase I Site Investigation report, the 1894 Sanborn Fire Insurance map indicates that Jamaica Bay extended across approximately the northern two thirds of the current site configuration. The 1913 Sanborn map illustrates an extension of the northwest portion of the site into the Bay. A 1924 aerial photograph of the site depicted filling of the area between the landing and the gas plant and a 1933 Sanborn map indicates that additional filling expanded into the Bay, between 108th and 116th Streets (GEI, 1997).

A wooden wall was described in the 1997 Phase I Site Investigation Report (GEI, 1997) as trending east west, approximately 180 feet south of the current northern site boundary and as being located between depths of 0.5 feet and at least 4 feet below ground surface (bgs). This wall coincides with the northern site boundary illustrated on the 1913 Sanborn map. To the south of this wall, fill was described as consisting of fairly clean sand while fill to the north of the wall mainly consisted of gray-stained clinkers. A concrete retaining wall was discovered during the same investigation along the site's southern boundary, near the southwest corner, and extended to a depth of 7 feet bgs. The concrete retaining wall generally corresponds to the 1912 southern site boundary which is depicted in **Drawing** 1A. Fill materials in the vicinity of the southwest corner of the site were described as consisting of demolition debris (sand, bricks, concrete) and as dredge spoils.

The fill materials encountered throughout the Rockaway Park site during the course of the current investigation are highly variable in character and thickness. Fill is mostly colored

gray, brown, black and tan, but yellow, red and orange colors also occur. The fill consists primarily of sand but also includes minor amounts of silt, clay, gravel and cobbles. Incorporated anthropogenic materials found on-site include varying amounts of coal, tar, coke, clinker, slag, crushed shale fragments, wood, concrete, brick and isolated ash and broken glass. Fill was delineated based upon the presence of these human-made (or modified) materials. Organic materials, primarily shells and some vegetative remains, are also present. It is presumed that some of the fill was obtained from dredge spoils removed from Jamaica Bay. Because the fill includes materials similar in texture and composition to native barrier island deposits, differentiating between the two strata was difficult in areas where the fill material lacked the described anthropogenic materials. As shown on **Drawing 3B**, geologic cross section D-D' trends west to east, north of the site in an area that was filled when the modern-day bulkhead was constructed. Similarly, cross-section E-E' traverses areas across the northern portion of the site for which historic accounts indicate infilling of near shore shallows. Cross-section F-F' traverses the central portion of the site from west to east.

In the area north of the former Gas Works, fill was encountered in several borings to a depth of approximately 15 feet bgs as shown on cross-section E-E'. This area extends from Beach Channel Drive to the 1912 site boundary. Much of the fill in this area consists of sandy, silty dredge spoils and includes clinkers and construction debris such as concrete.

Fill was identified to depths of approximately 5 to 10 feet bgs in the eastern portion of the former Gas Works. In this area, fill consisted mainly of dredge spoils and frequently included construction debris such as bricks, concrete and wood, as well as tar, clinkers and crushed rock. The depth of fill decreases to the west within the former Gas Works, and was either not identified or found only within the upper 5 feet of the subgrade in the western half of the former Gas Works.

North of the site, between the current bulkhead and the northern site boundary, fill was identified to depths ranging from less than 5 feet to approximately 30 feet bgs as shown on cross-section D-D'. The thickest section of fill encountered in this area reached a depth of

approximately 30 feet bgs in soil boring RPSB-02A. Fill materials encountered north of the site were similar in composition and texture to fill encountered within the northern portion of the site.

Given the historic expansion of the site into Jamaica Bay, it was anticipated that fill would underlie the ground surface to depths of greater than 15 feet bgs across much of the site. Because of the similarity between dredge spoils and native barrier beach deposits, it is likely that fill may have been placed to somewhat greater depths than those identified on the basis of incorporated anthropogenic materials.

Eleven soil samples were collected from shallow depths in order to characterize geotechnical properties of fill materials present at the water table. The results of the geotechnical analyses of these samples are presented in **Table 3-1**.

As shown on **Table 3-**1, total organic content (TOC) of fill materials varied considerably. TOC for fill ranged between 0.1% and 9.9%, and averaged 2.29%. The fraction of organic content within a soil is the dominant characteristic affecting the adsorption capacity of nonionic organic compounds such as BTEX and PAHs (S.S. Suthersan, 1996) onto the soil matrix. A soil with a very low fraction of organic content will have a limited ability to adsorb, and therefore, immobilize such organic contaminants.

Table 3-1 indicates that the fill contains relatively low quantities of silt and finer material, with the percentage of silt-sized particles passing through the Number 200 sieve (0.074 mm) ranging from 1 to 6%. Additionally, the effective grain size (d_{10}) of each sample, or the diameter at which 10% of the particles are finer and 90% are coarser, ranges from 0.14 to 0.17 mm. The average effective diameter of 0.155 mm for the fill material is consistent with a medium sand (Lamb and Whitman, 1969). Since 90% of the fill is coarser than medium sand, the material is expected to exhibit relatively high permeability and excellent water transmitting properties.

TABLE 3-1

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
GEOTECHNICAL ANALYSES RESULTS FOR
SHALLOW FILL AND NATIVE SAND DEPOSITS
COLLECTED IN THE VICINITY OF THE WATER TABLE

Sample Identification		RPMW-04I	RPMW-05I	RPMW-06I	RPMW-07I	RPMW-08I	RPMW-09I	RPMW-10I
Depth Below Grade (feet)		3-5 ft.	2-4 ft.	6-8 ft.	5-7 ft.	5-7 ft.	4-6 ft.	4-6 ft.
Date Collected		2/7/00	2/8/00	2/9/00	2/14/00	2/8/00	2/11/00	2/22/00
CHARACTERISTIC	UNIT							
w	%	3.4	13.9	4.4	21.0	5.8	10.8	5.5
Sieve	%	2	4	1	6	3	1	2
TOC	%	0.2	3.0	0.3	9.9	3.4	2.5	0.1
G_s	none	2.67	2.61	2.68	2.38	2.54	2.63	2.70
d_{10}	mm	0.155	0.155	0.15	0.15	0.17	0.155	0.165

w - Water content
Sieve - % sample particles passing 200 sieve (0.074 mm)
TOC - Total Organic Carbon
Gs - Specific Gravity
d_{10} - Effective grain size : diameter at which 10% of sample particles are finer and 90% are coarser
% - Percent
mm - Millimeters

TABLE 3-1

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
GEOTECHNICAL ANALYSES RESULTS FOR
SHALLOW FILL AND NATIVE SAND DEPOSITS
COLLECTED IN THE VICINITY OF THE WATER TABLE

Sample Identification		RPMW-12I	RPMW-13I	RPMW-14I	RPMW-15I	AVERAGE CHARACTERISTICS
Depth Below Grade (feet)		5-7 ft.	6-8.5 ft.	4-6 ft.	3-5 ft.	FOR FINE TO COARSE SANDS OF
Date Collected		2/9/00	2/10/00	2/14/00	2/16/00	SHALLOW FILL AND NATIVE DEPOSITS
CHARACTERISTIC	UNIT					
w	%	2.8	10.4	7.2	15.5	9.15
Sieve	%	2	6	3	3	3.00
TOC	%	0.2	2.9	1.2	1.5	2.29
G_s	none	2.66	2.60	2.63	2.63	2.61
d_{10}	mm	0.16	0.14	0.15	0.15	0.155

w - Water content
Sieve - % sample particles passing 200 sieve (0.074 mm)
TOC - Total Organic Carbon
Gs - Specific Gravity
d_{10} - Effective grain size : diameter at which 10% of sample particles are finer and 90% are coarser
% - Percent
mm - Millimeters

Barrier Island Deposits

Underlying the fill unit throughout much of the site are sandy, shell-bearing deposits interpreted as recent (i.e., post-glacial) near shore and beach and dune deposits. The *Surficial Geologic Map of New York, Lower Hudson Sheet* (Cadwell, ed., 1989) identifies surficial deposits at the site as barrier island deposits. Barrier island deposits are identified as consisting of sand, gravel and shells characteristic of the near shore and shoreline environments, as well as fine, aeolian or wind-blown sands characteristic of dune deposits.

The barrier island deposits at the Rockaway Park site consist primarily of grayish colored fine to medium sand with minor amounts of clay, silt and gravel. Silt and clay generally occur in thin (<0.5 foot thick), discontinuous lenses. The barrier island deposits include shell bearing horizons ranging from approximately 2 feet to greater than 20 feet thick. The shell bearing units are sometimes occurring with gravel. The barrier island deposits begin at or close to the ground surface (except where buried by the fill material) and extend throughout the depths of most borings. Eleven deep borings located within the southwestern portion of the site were drilled through the barrier beach deposits and into underlying glacial deposits providing information on the estimated thickness of this strata.

Shell fragments were generally found in three distinct zones within the barrier island deposits. The first zone is shallow and extends to depths of approximately 30 feet bgs in most borings. In some borings, an intermediate-depth shell zone was also identified, mainly between depths of approximately 38 and 45 feet bgs. A third, deep shell horizon was identified in 8 of the 11 deep borings, generally between depths of 55 and 77 feet bgs. The tops of shell-bearing units usually exhibited shell fragments within a matrix of gravelly sand underlain by finer sand. The base of the deepest shell-bearing horizon generally occurs either immediately above or within a few feet of a distinct color change observed in recovered samples. Within approximately 0 to 5 feet of the deepest shell units, soil color changes from gray to a predominantly brown to yellow brown/orange brown colored sediment. This color change is used to differentiate the barrier island deposits from the underlying transitional zone unit described below. Based on this

boundary, it is estimated that the barrier island deposits are a approximately 55 to 70 feet thick throughout the site.

Eleven soil samples were collected from intermediate depths in order to characterize geotechnical properties of the barrier island deposits. The results of the geotechnical analyses of these samples are presented in **Table 3-2**.

As shown on **Table 3-2**, the barrier island deposits are relatively poor in organic matter, having an average TOC content of less than 0.12%.

Table 3-2 indicates that the barrier island deposits contain very low quantities of silt and finer material, with the percentage of silt-sized particles passing through the Number 200 sieve (0.074 mm) ranging from 1 to 3% and averaging 2%. Additionally, the effective grain size (d_{10}) of each sample ranges from 0.14 to 0.16 mm. The average d_{10} for the barrier beach deposits is 0.147 mm, which is consistent with medium sand (Lamb and Whitman, 1969). Since 90% of the barrier beach deposits are coarser than medium sand, the material is expected to exhibit very high permeability and excellent water transmitting properties similar to the overlying fill material.

Early Holocene/Late Pleistocene Transitional Unit

As discussed above, 11 soil borings that were completed in the southwestern portion of the site fully penetrated the barrier island deposits and projected into the underlying stratigraphic units. Based on the soil samples recovered from these borings, there appears to be a transitional zone between 55 and 77 feet bgs in this area of the site which is characterized by a distinct color change in the sediment from a uniformly gray color characteristic of the barrier island deposits to a predominantly brown to yellow brown/orange brown color sediment. In addition, a number of the deep borings completed in this area encountered several distinctive silty sand strata between 65 and 95 feet bgs. Geologic cross-sections A-A' and B-B' provided on **Drawing 3A** depict these silty sand strata.

TABLE 3-2

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
GEOTECHNICAL ANALYSES RESULTS FOR
INTERMEDIATE DEPTH BARRIER ISLAND DEPOSITS

Sample Identification		RPMW-04I	RPMW-05I	RPMW-06I	RPMW-07I	RPMW-08I	RPMW-09I	RPMW-10I
Depth (feet)		35-45 ft.	36-44 ft.	38-44 ft.	35-47 ft.	35-45 ft.	35-45 ft.	36-44 ft
Date Collected		2/7/00	2/8/00	2/9/00	2/14/00	2/8/00	2/11/00	2/22/00
CHARACTERISTIC	UNIT							
w	%	20.5	23.7	21.4	20.6	24.1	22.3	22.1
Sieve	%	2	2	2	2	2	3	1
TOC	%	0.1 *	0.1 *	0.1 *	0.1 *	0.1 *	0.3	0.1
G_s	none	2.61	2.67	2.65	2.65	2.69	2.68	2.68
d_{10}	mm	0.15	0.145	0.14	0.145	0.15	0.148	0.16

w - Water content
Sieve - % sample particles passing 200 sieve (0.074 mm)
TOC - Total Organic Carbon
Gs - Specific Gravity
d_{10} - Effective grain size : diameter at which 10% of sample particles are finer and 90% are coarser
% - Percent
mm - millimeters
* - TOC for these samples < 0.1%
** - Average TOC < 0.12%

TABLE 3-2

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
GEOTECHNICAL ANALYSES RESULTS FOR
INTERMEDIATE DEPTH BARRIER ISLAND DEPOSITS

Sample Identification		RPMW-12I	RPMW-13I	RPMW-14I	RPMW-15I	AVERAGE CHARACTERISTICS
Depth (feet)		35-45 ft.	35-46 ft.	35-45 ft.	35-45 ft.	FOR FINE TO COARSE SANDS OF
Date Collected		1/22/00	2/10/00	2/14/00	2/16/00	BARRIER ISLAND DEPOSITS
CHARACTERISTIC	UNIT					
w	%	22.0	22.6	22.7	23.7	22.34
Sieve	%	3	3	3	2	2.27
TOC	%	0.1 *	0.1	0.1 *	0.1	0.12 **
G_s	none	2.69	2.65	2.64	2.65	2.66
d_{10}	mm	0.14	0.15	0.14	0.15	0.147

w - Water content
Sieve - % sample particles passing 200 sieve (0.074 mm)
TOC - Total Organic Carbon
Gs - Specific Gravity
d_{10} - Effective grain size : diameter at which 10% of sample particles are finer and 90% are coarser
% - Percent
mm - millimeters
* - TOC for these samples < 0.1%
** - Average TOC < 0.12%

The transitional unit is interpreted as a transitional deposit separating the Holocene-aged barrier island deposits from the underlying Pleistocene-aged glacial materials. With glacial melting, the rising Holocene sea level flooded Long Island's low-lying terrestrial outwash deposits. Estuaries, lagoons and marshes preceded the advancing sea, forming quiet, brackish and usually anaerobic environments in which sandy silts, silts and clays (such as those encountered at the site) accumulated. These fine grained materials sampled at the Rockaway Park site exhibited zones of sediment with olive hues typical of the chemical reduction processes that occur in anaerobic conditions.

Table 3-3 presents results of geotechnical analyses performed on samples that were collected from deep borings at depths within the transitional zone. The average TOC for the transitional zone sands was 0.7%, as compared with an average TOC of less than 0.12% for the overlying barrier island deposits. While this is still low, it does represent a slight increase in the adsorptive capacity of transitional zone materials, as compared with overlying sands. Based on the averaged results of the geotechnical analyses, the silty sand strata within the transitional zone are expected to exhibit significantly lower permeability and hydraulic conductivities than overlying deposits.

Based the soil samples recovered from the deep borings completed in the southwestern portion of the site, the transitional zone appears to be between 35 and 40 feet thick. The silty sand strata present in the transitional zone appear to be thickest at RPSB-29. As shown in cross-sections A-A' and B-B', the silty sand strata may be a fairly continuous unit throughout the southwestern portion of the site. However, given the remaining borings were terminated before encountering the transitional zone, the extent of the transitional zone and associated silty sand strata throughout the remaining portions of the site is unknown. Where present, the silty sand strata may act as a semi-confining unit, limiting the vertical migration of MGP-related chemicals.

TABLE 3-3

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
GEOTECHNICAL ANALYSES RESULTS
FOR SILTY FINE SANDS AND FINE TO COARSE SANDS OF DEEP DEPOSITS
WITHIN THE TRANSITIONAL ZONE

Sample Identification		RPMW-09D2*	RPMW-12D2	RPMW-13D2	AVERAGE CHARACTERISTICS
Depth (feet)		93-105 ft.	94-106 ft.	95-106 ft.	FOR SILTY FINE TO COARSE
Date Collected		3/9/00	3/13/00	3/9/00	SANDS OF DEEP DEPOSITS
CHARACTERISTIC	UNIT				
w	%	22.7	21.5	23.5	22.6
Sieve	%	6	16	15	12.3
TOC	%	0.5	0.8	0.8	0.70
G_s	none	2.73	2.68	2.7	2.70
d_{10}	mm	0.1	< 0.1**	< 0.1**	0.1

w - Water content
Sieve - % sample particles passing 200 sieve (0.074 mm)
TOC - Total Organic Carbon
G_s - Specific Gravity
d_{10} - Effective grain size : diameter at which 10% of sample particles are finer and 90% are coarser
% - Percent
mm - millimeters
* - Collected from boring RPSB-31A
** - D_{10} < than 0.1 mm and not analyzed

3.3 Glacial Outwash Deposits

Sediments underlying the transitional zone appear to be more characteristic of Pleistocene-aged glacial outwash sand typically encountered along the south shore of Long Island. Eight borings completed in the southwestern portion of the site encountered moderately well sorted yellow-brown to orange-brown sand starting at between 95 and 105 feet bgs. Soil samples observed from boring RPSB-29; however, revealed interbedded silty sand and sand continuing to the base of the boring at a depth of 136 feet. Because of the transitional and unconformable nature of the contact between glacial outwash and barrier island deposits at the site, and because the barrier island deposits are basically re-worked glacial materials, there is no clear boundary between the two, other than the approximately 35 to 40-foot thick transitional unit described above. This unit reaches variable depths at the site, and may reflect topographic relief in glacial deposits prior to sea level rise. While no samples of the glacial outwash deposits were collected for geotechnical analysis, the sediments were generally typical of glacial outwash deposits encountered on Long Island which have been found to be low in TOC (generally less than 1%) and have good to excellent water transmitting properties.

3.4 Groundwater Flow and Hydraulic Gradients

Based on depth to groundwater measurements collected during the completion of field activities, groundwater within the Rockaway Park former MGP site is generally encountered at depths of approximately 5 feet bgs. Because the site is adjacent to Jamaica Bay, groundwater levels fluctuate in response to tidal influences. These influences also affect gradients and flow directions, as discussed below.

3.4.1 Tidal Influences on Groundwater Levels

The periodic rise and fall of tidewater in coastal waters and tidal estuaries which occurs primarily in response to the gravitational interaction between the earth, moon and sun produces sinusoidally fluctuating groundwater levels in aquifers that are hydraulically connected to the tidal surface waters (S.A. Marquis and E.A. Smith, 1984). The extent to which an aquifer is

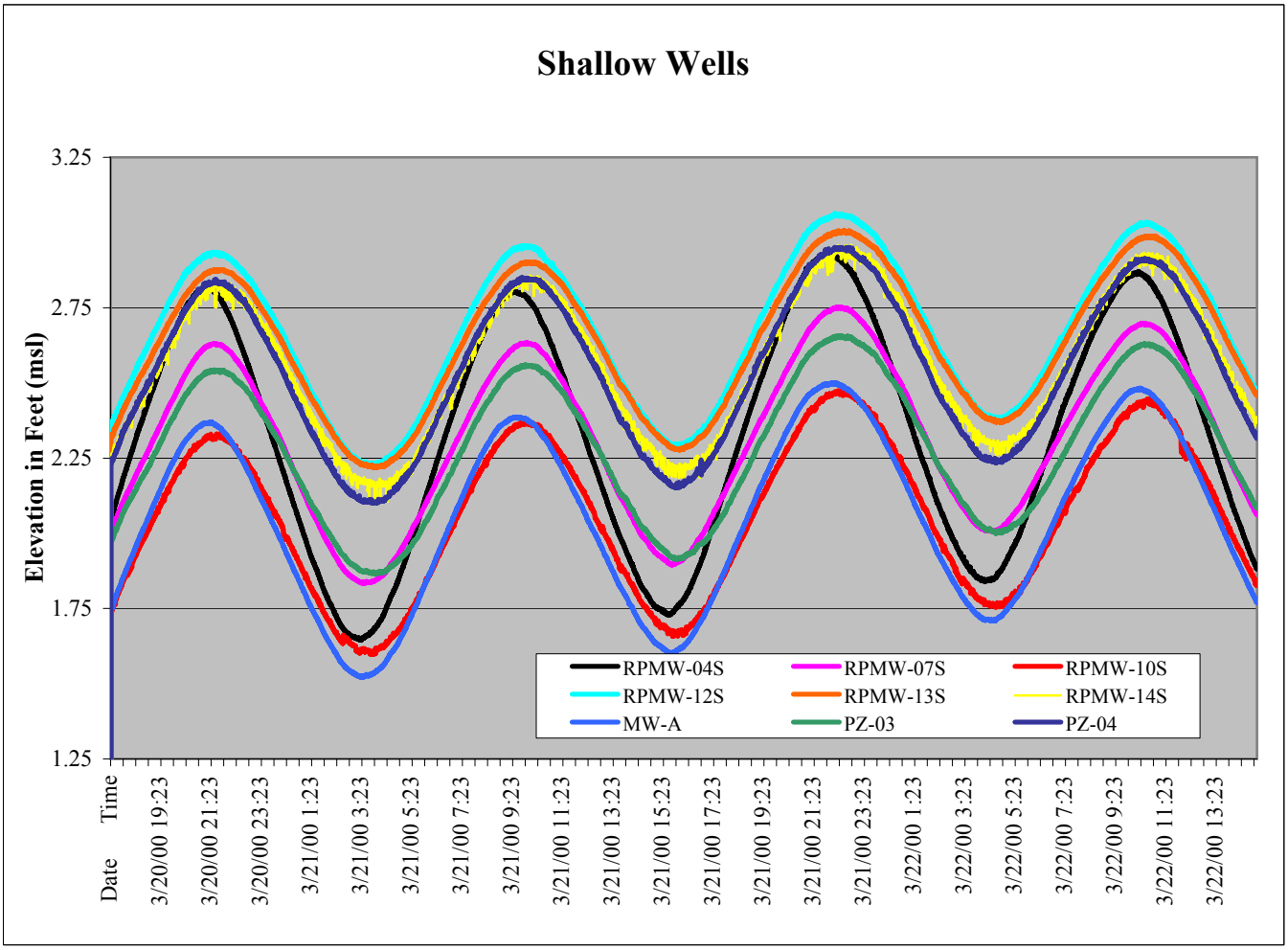
affected by this tidal influence is dependent on the following: the tidal range of the surface water; the degree to which the aquifer is in hydraulic communication with the surface water; the thickness and hydraulic conductivity of the aquifer; the net prevailing hydraulic gradient at the seepage face; and the configuration of the shoreline (M.E. Serfes, 1987).

A tidal study was performed at the Rockaway Park former MGP site between March 20 and March 22, 2000, immediately following the full moon of March 20, 2000, when tidal fluctuations in Jamaica Bay would be expected to be close to their maximum range. Maximum tidal fluctuations are typically associated with full and new moon periods (referred to as Spring Tides) when strong gravitational forces resulting from solar-lunar alignment produce the earth's highest high and lowest low tides. Nine shallow wells, two intermediate wells, and one deep well were selected for water level monitoring during the tidal survey. In addition, a tidal gauge was affixed to the bulkhead along Jamaica Bay north of the site in order to measure tidal fluctuations of the surface water over the 48-hour study period. Additional details regarding how the tidal survey was conducted are presented in **Section 2.10**.

The results of the tidal survey, are graphically displayed on **Figures 3-1** and **3-2**. Based on the results, Jamaica Bay has a maximum tidal range of approximately 7 feet. As illustrated by **Figures 3-1** and **3-2**, tidal influences are greatest in intermediate and deep monitoring wells screened in the barrier island deposits, including RPMW-07I, RPMW-07D and RPMW-09I with water levels fluctuating as high as approximately 2.25 feet in intermediate wells and as high as approximately 2.6 feet in deep well RPMW-07D. Shallow monitoring wells screened at the water table, including RPMW-07S, RPMW-12S, RPMW-13S and RPMW-14S exhibited the least tidal influence, generally fluctuating less than 1-foot between high and low tides. The greatest shallow tidal influence occurs at monitoring well RPMW-04S located in the northwest corner of the site with an observed fluctuation of approximately 1.25 feet. Shallow monitoring wells located a greater distance from Jamaica Bay along the southern boundary of the site, including RPMW-12S, RPMW-13S, RPMW-14S, PZ-03 and PZ-04 exhibited the least fluctuation, generally on the order of approximately 0.5-foot. Shallow wells exhibited a slight delay or lag of approximately 0.5 to 1-hour in their cyclic fluctuation when compared to the observed tidal cycle in Jamaica Bay. Lag times were lowest at the wells closest to the Bay and

FIGURE 3-1

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TIDAL FLUCTUATIONS OBSERVED IN SHALLOW WELLS
MARCH 20 - 22, 2000



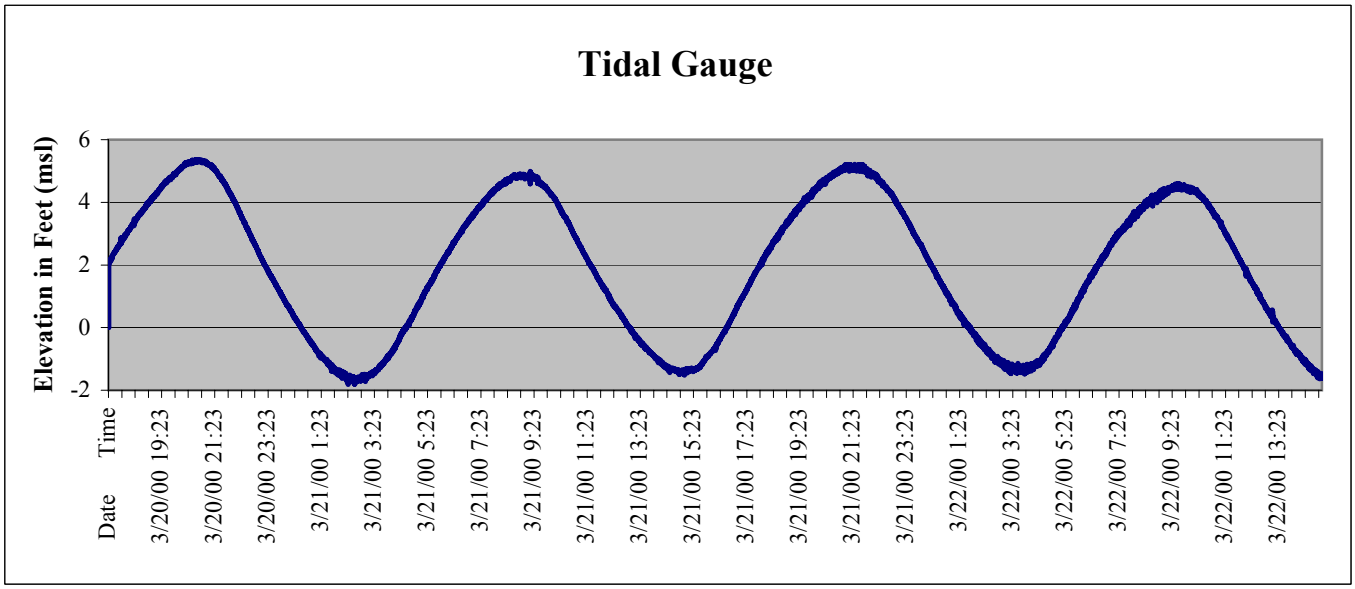
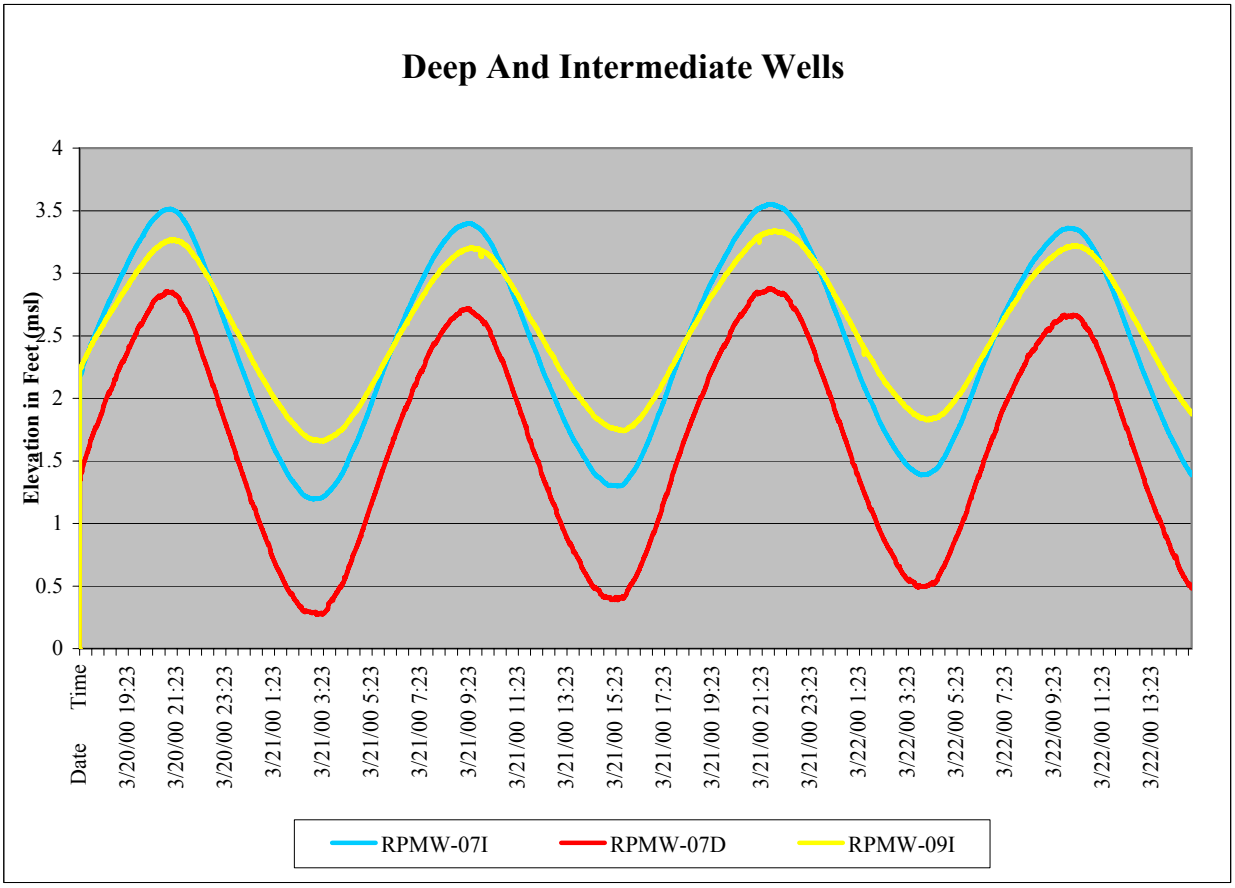
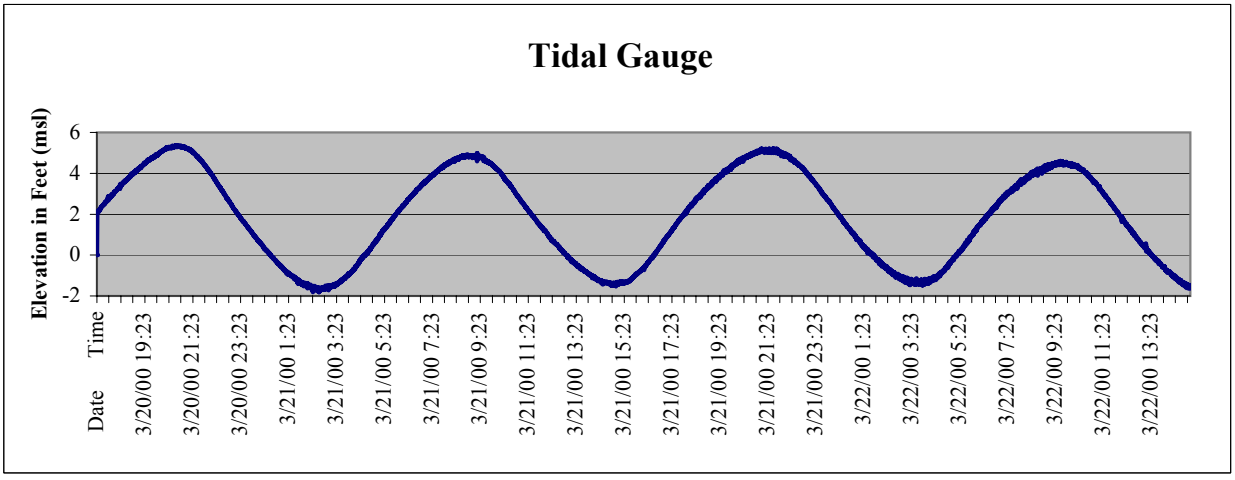


FIGURE 3-2

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TIDAL FLUCTUATIONS OBSERVED IN DEEP AND INTERMEDIATE WELLS
MARCH 20 - 22, 2000



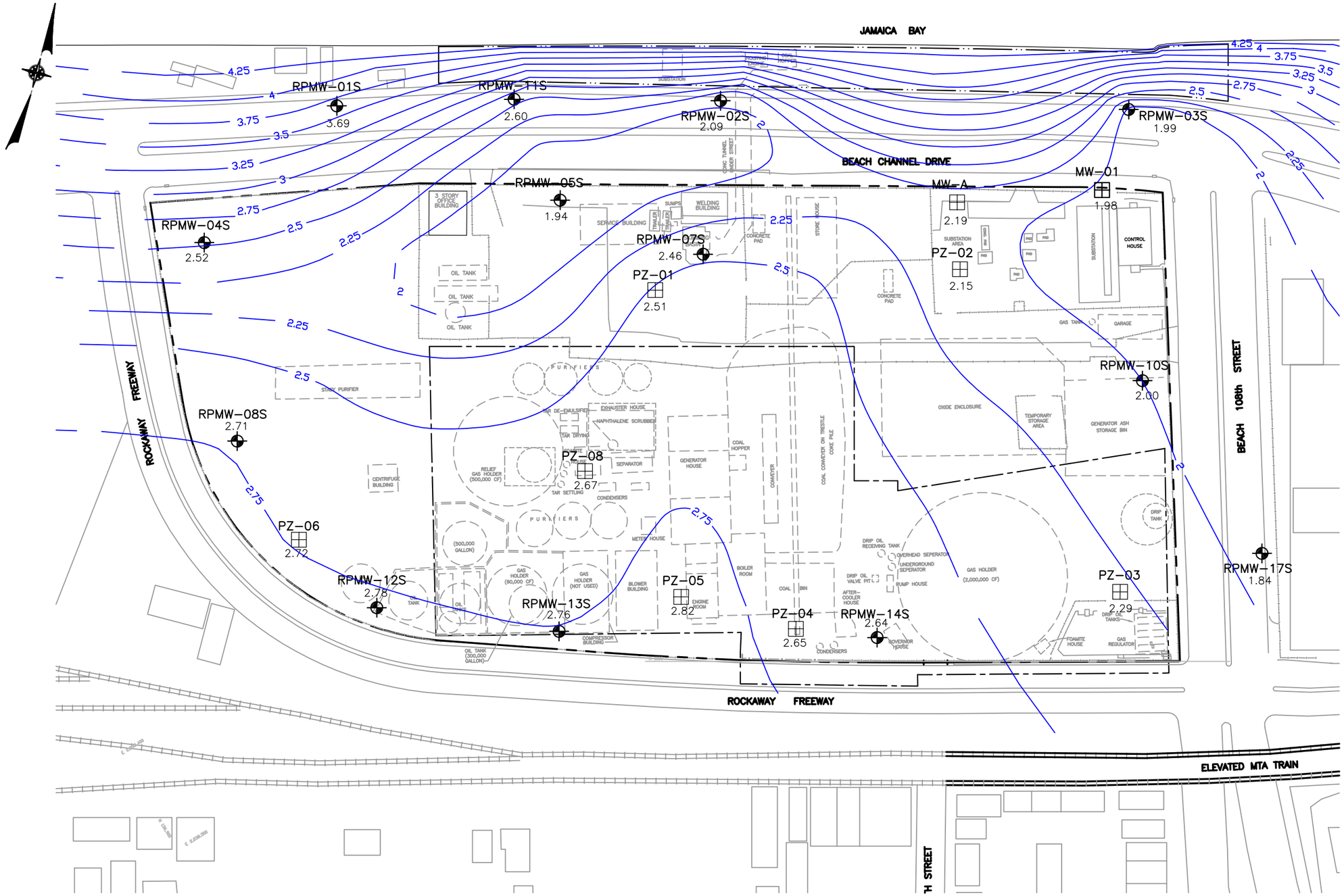


increased with distance from Jamaica Bay. Shallow well RPMW-07S exhibited an average lag time of 54 minutes during the 48-hour tidal survey period.

The review of data obtained during the tidal survey for the two intermediate wells and one deep well indicate groundwater within the barrier island deposits is clearly influenced by tidal action. The greatest influence was observed at deep monitoring well RPMW-07D, where a tidally influenced water level fluctuation of approximately 2.6 feet was observed, with average lag time of 18 minutes. Intermediate well RPMW-07I exhibited a water level fluctuation of approximately 2.25 feet. Intermediate well RPMW-09I, located approximately 210 feet south of RPMW-07I, and therefore, further from Jamaica Bay, exhibited tidally induced water level fluctuations of approximately 1.65 feet and exhibited lag times of between 0.5 and 0.75 hour. Based on the data presented in **Figure 3-2**, the deep and intermediate wells exhibit a greater tidal influence and shorter lag times than the shallow wells. As with the shallow wells, tidal influences in the intermediate wells are greatest closer to Jamaica Bay.

3.4.2 Horizontal Groundwater Flow Patterns

A number of groundwater contour maps were created based on water level measurements collected during high tide and low tide periods on November 30, 2001, from all on-site and off-site groundwater monitoring wells. Water levels were collected from all wells within 1/2 hour of peak high and peak low tide periods in order to minimize the tidal influence on water levels and to obtain a "snap shot" of groundwater flow conditions during these extreme tidal periods. Two water table maps were generated using 22 shallow wells with **Figure 3-3** representing high tide conditions and **Figure 3-4** representing low tide conditions. Two potentiometric surface maps were created using 16 intermediate monitoring wells with **Figure 3-5** representing high tide and **Figure 3-6** representing low tide conditions in the intermediate groundwater zone. Finally, nine deep monitoring wells were used to create the deep potentiometric groundwater surface maps with **Figure 3-7** representing high tide conditions and **Figure 3-8** representing low tide conditions. Additionally, to obtain information from mid-tidal flow patterns, two maps were created using groundwater level data obtained from the March 22, 2000, tidal survey described above with **Figure 3-9** representing shallow (water table) groundwater flow during the



LEGEND:

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MW-A 2.19, PZ-03 2.29 — MONITORING WELL OR PIEZOMETER LOCATION WITH MEASURED WATER EL. IN FEET, MSL

2.5 — WATER TABLE CONTOUR IN FEET, MSL. DASHED WHERE INFERRED

MSL = MEAN SEA LEVEL

0 100
SCALE IN FEET

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

WATER TABLE CONTOUR MAP

HIGH TIDE – 11/30/2001

FIGURE 3–3

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

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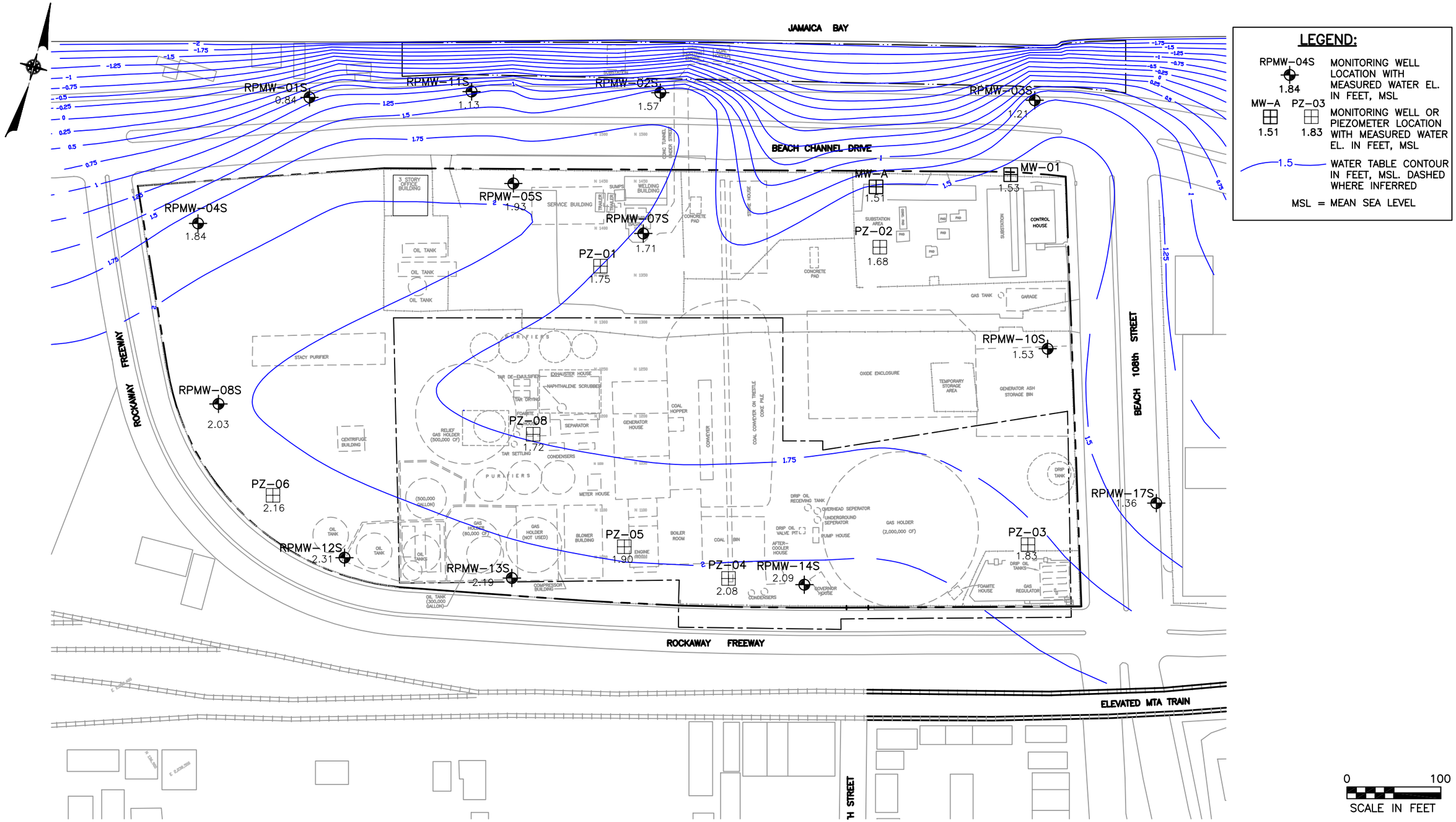

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

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

WATER TABLE CONTOUR MAP

LOW TIDE – 11/30/2001

FIGURE 3–4

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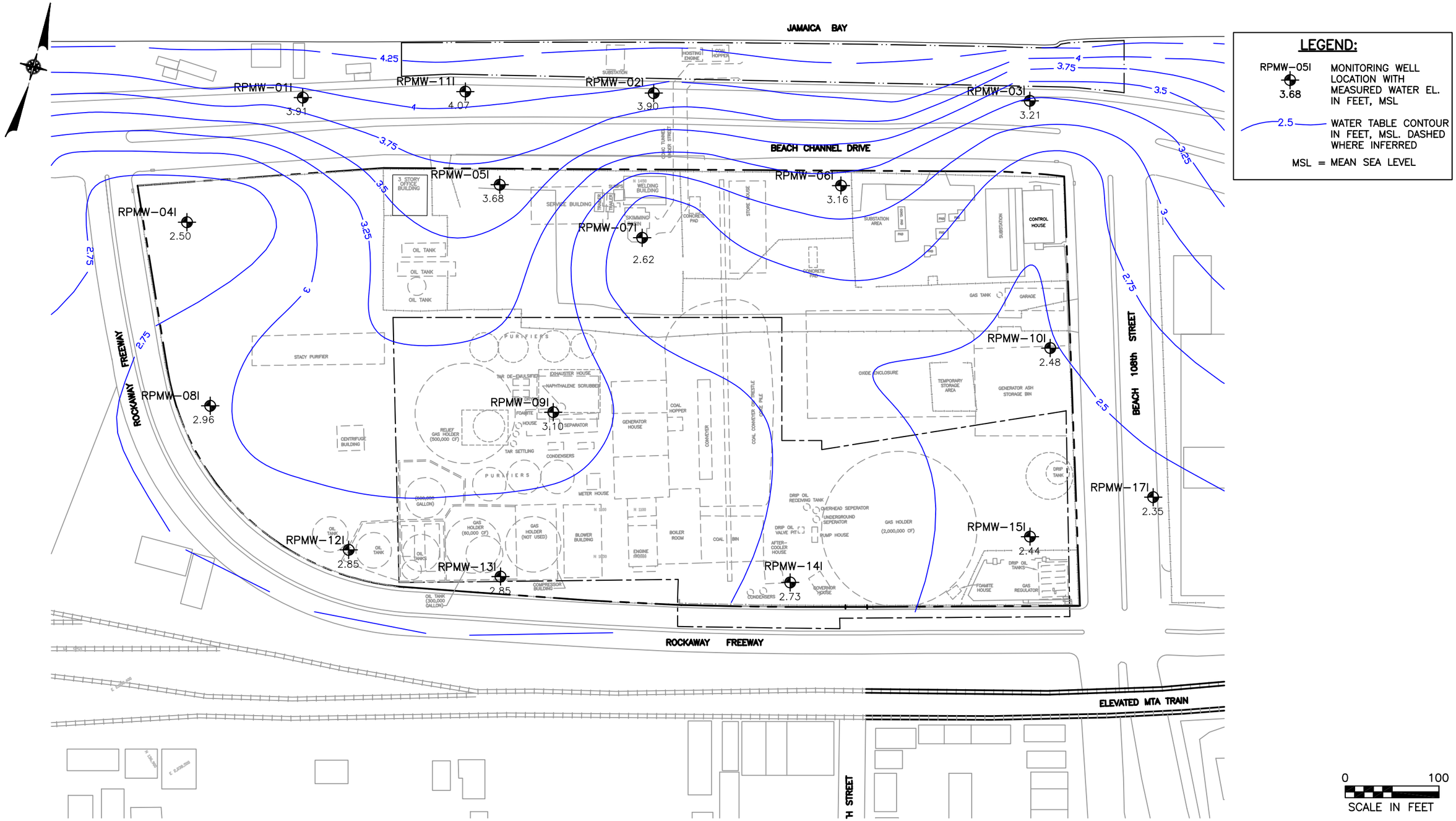

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

Dvirka and Bartilucci
CONSULTING ENGINEERS
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INTERMEDIATE ZONE POTENTIOMETRIC SURFACE

HIGH TIDE – 11/30/2001

FIGURE 3–5

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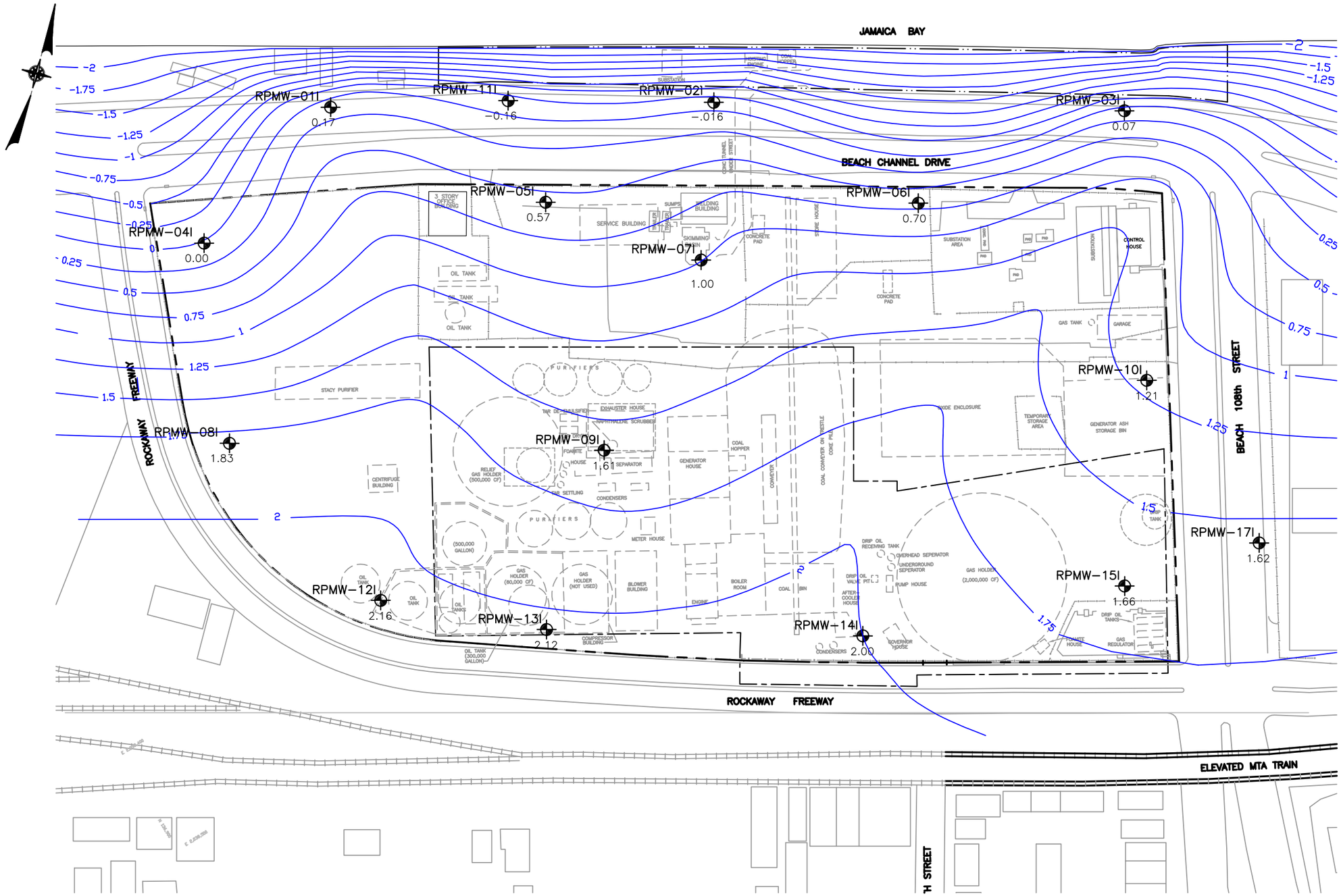

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1.5 — WATER TABLE CONTOUR IN FEET, MSL. DASHED WHERE INFERRED

MSL = MEAN SEA LEVEL

0 100
SCALE IN FEET

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

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INTERMEDIATE ZONE POTENTIOMETRIC SURFACE

LOW TIDE – 11/30/2001

FIGURE 3–6

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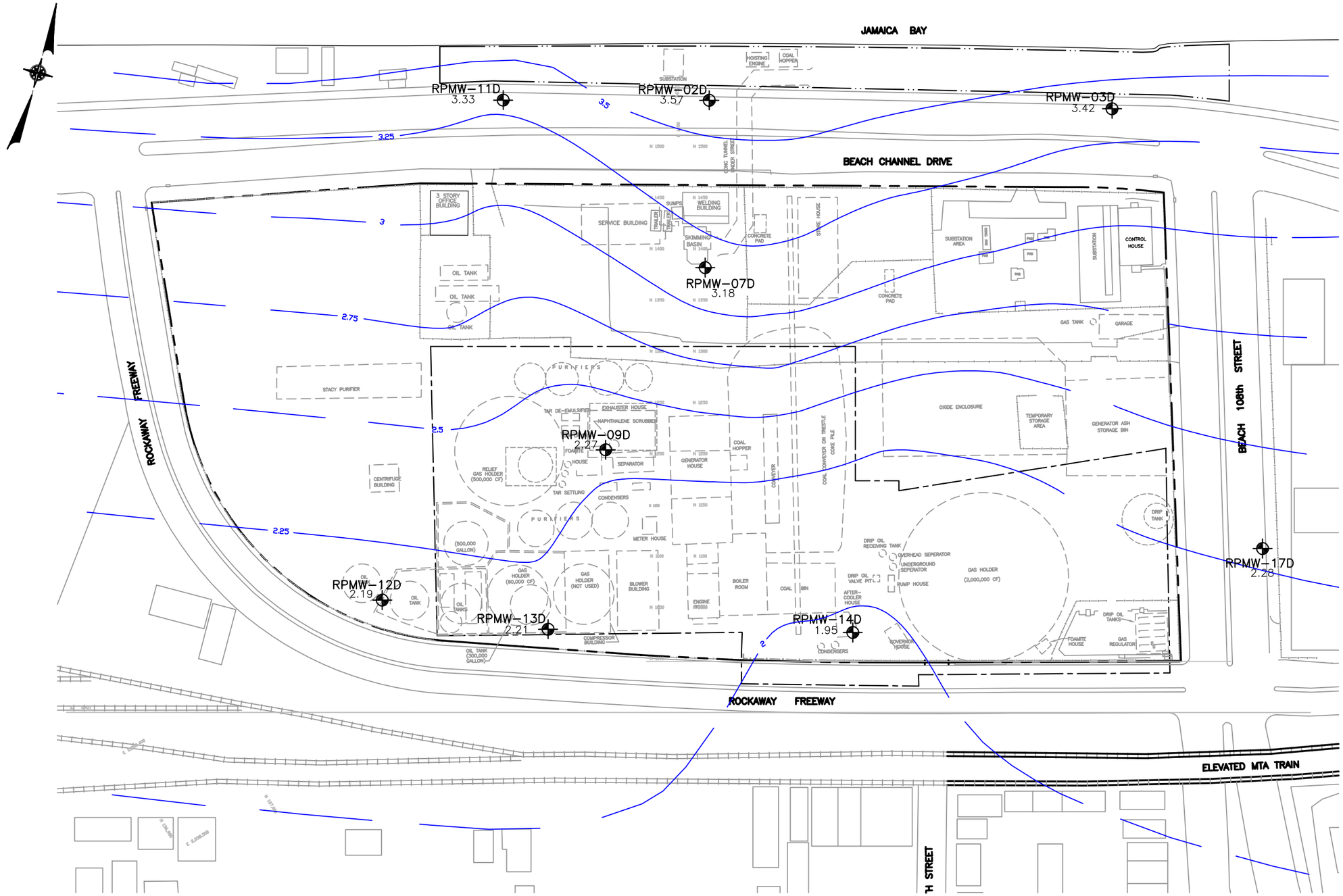

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2.5 — WATER TABLE CONTOUR IN FEET, MSL. DASHED WHERE INFERRED

MSL = MEAN SEA LEVEL

0 100
SCALE IN FEET

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

DEEP ZONE POTENTIOMETRIC SURFACE

HIGH TIDE – 11/30/2001

FIGURE 3–7

Dvirka and Bartilucci
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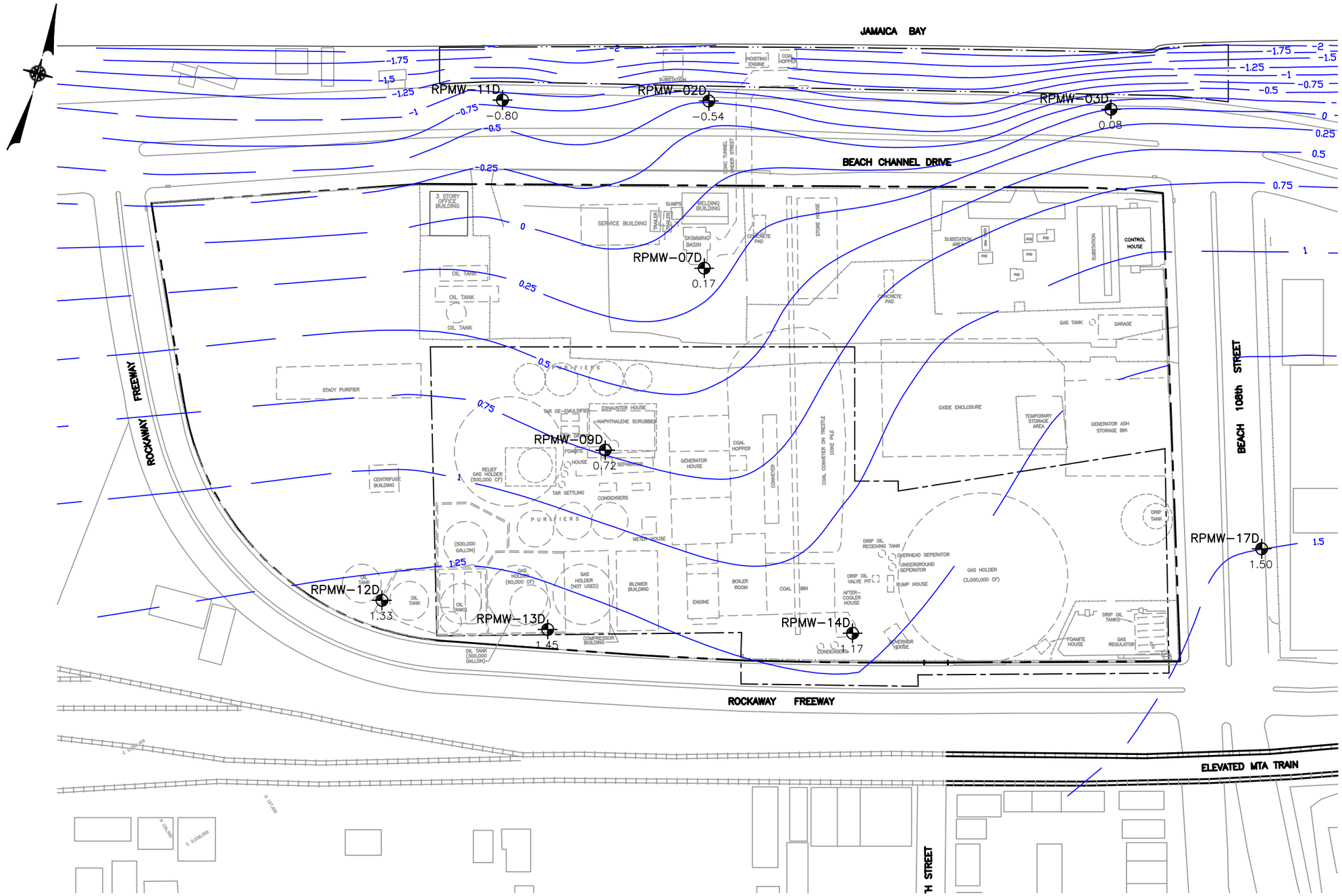

LEGEND:

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1.5 — WATER TABLE CONTOUR IN FEET, MSL. DASHED WHERE INFERRED

MSL = MEAN SEA LEVEL

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

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

DEEP ZONE POTENTIOMETRIC SURFACE

LOW TIDE – 11/30/2001

FIGURE 3–8

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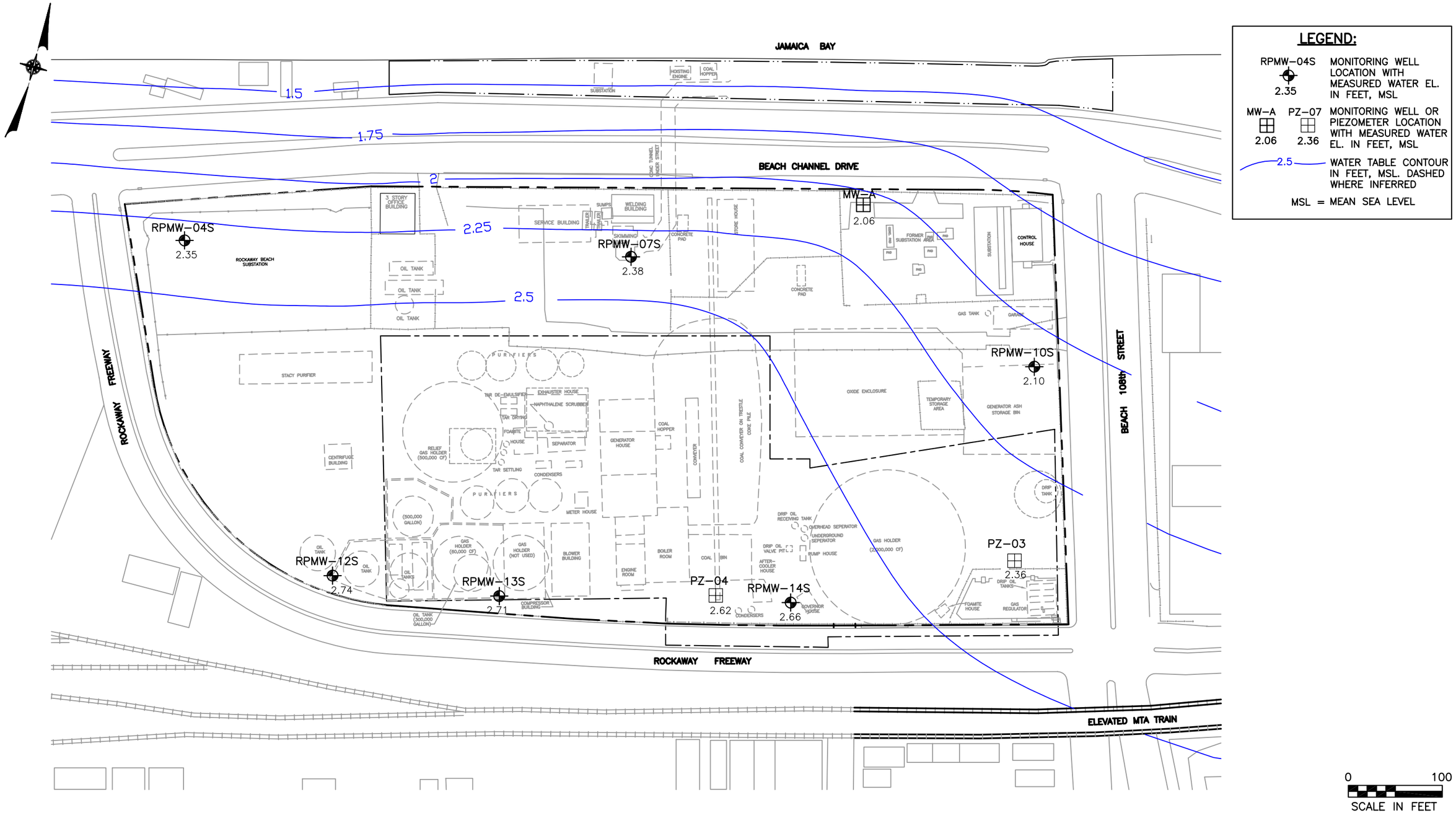

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

WATER TABLE CONTOUR MAP

DESCENDING MID–TIDE – 3/20/2000

FIGURE 3–9

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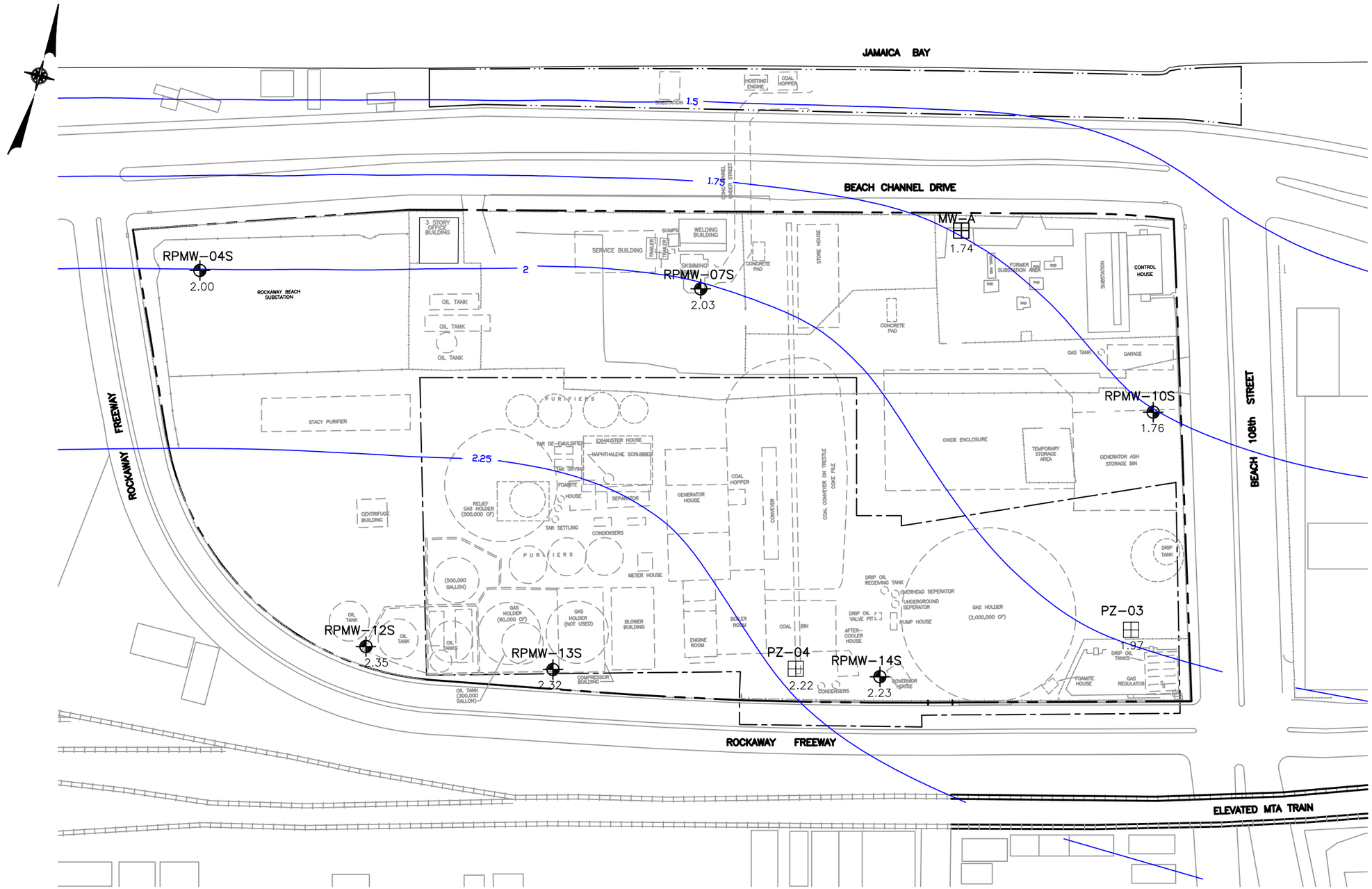
descending tide and **Figure 3-10** representing shallow groundwater flow during the ascending tide.

Groundwater Flow at High Tide

Figure 3-3 indicates that due to the increase in the water table elevation closest to Jamaica Bay during periods of high tide, shallow groundwater flow appears to be in a southerly direction from the Jamaica Bay bulkhead to as far south as monitoring well RPMW-07S. However, water level data collected from wells south of this well cluster indicate a more northerly groundwater flow and within the eastern portion of the site a northeasterly flow direction. **Figure 3-5** indicates groundwater flow at peak high tide within the intermediate groundwater zone is predominantly in a southerly direction from Jamaica Bay and as far south as the northern property boundary. However, the hydraulic gradient within the majority of the site is nearly flat suggesting little to no groundwater flow actually occurs on-site in a southerly direction during high tide periods. **Figure 3-7** indicates a relatively uniform groundwater flow pattern to the south at high tide within the deep groundwater zone from Jamaica Bay and throughout the site.

Comparison of water levels recorded during the completed tidal study at the Jamaica Bay tidal gauge and water levels at RPMW-07S (see **Figure 3-1**) indicates that the southerly sloping hydraulic gradient between the two measuring points exists throughout the high tide periods, as well as a portion of the incoming (flooding) and outgoing (ebbing) tidal periods. Using the water level data provided on **Figure 3-1**, it is estimated that the southerly gradient between Jamaica Bay and RPMW-07S exists for approximately 11.0 to 11.5 hours per 24-hour time period. Therefore, during the remainder of each day, there exists a northerly hydraulic gradient between these two points which is consistent with the hydraulic gradients observed in areas further to the south. Given the tidal study was completed at a time in which tidal fluctuations would be expected to be at their maximum, it can be concluded that the 11.0 to 11.5-hour period in which the southerly hydraulic gradient exists is the maximum duration that can be expected over most monthly tidal cycles. Therefore, the duration in which the southerly hydraulic gradient exists will



ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

WATER TABLE CONTOUR MAP

ASCENDING MID-TIDE – 3/22/2000

FIGURE 3-10

Dvirka and Bartilucci
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likely be more brief during the majority of time when tidal fluctuations are less than those observed during the tidal survey.

Groundwater Flow at Low Tide

Figure 3-4 indicates a much more uniform flow for shallow groundwater throughout the site during low tide periods when compared to high tide periods with groundwater generally flowing in a northerly direction towards Jamaica Bay throughout the site and adjacent areas. However, groundwater flow appears to be in a more northeasterly direction towards Beach 108th Street within the eastern portion of the site. Additionally, data collected from several monitoring wells located within the western portion of the site suggests a slight northwesterly flow pattern near the intersection of Beach Channel Drive and Rockaway Freeway. As would be expected, low tide gradients are steepest adjacent to Jamaica Bay and flattest on-site, away from the Bay, similar to high tide gradients. The hydraulic gradient of the water table through all but the northernmost portion of the site averages approximately 1.2×10^{-4} feet/feet at low tide. Between the northernmost portions of the site and Jamaica Bay, the average hydraulic gradient steepens to approximately 6.49×10^{-3} feet/feet.

Figures 3-6 and **3-8** indicate a fairly uniform flow to the north within the intermediate and deep groundwater zones throughout the site and adjacent areas. Similar to low tide conditions at the water table, hydraulic gradients within the intermediate and deep zones increase as groundwater moves toward Jamaica Bay. Intermediate hydraulic gradients across the southern and central portions of the site are lower in areas closer to Jamaica Bay, averaging approximately 2.8×10^{-4} feet/feet. In areas adjacent to Jamaica Bay, the hydraulic gradients are somewhat steeper in the intermediate zone, averaging approximately 3.35×10^{-3} feet/feet.

Groundwater Flow at Mid-Tide

Figures 3-9 and **3-10** are water table contour maps for mid-tide periods. **Figure 3-9** represents a descending or "ebbing" tide and **Figure 3-10** represents an ascending or "flooding" tide. Both mid-tide water table contour maps indicate groundwater flow is predominantly in a

northerly direction toward Jamaica Bay within the majority of the site during both descending and ascending mid-tides, with a fairly uniform hydraulic gradient over the area in which water level data is available. However, both mid-tide contour maps suggest a more northeasterly flow direction toward Beach 108th Street within the eastern portion of the site. Mid-tide water table gradients show less variation between Jamaica Bay and the southern boundary of the site than do high and low tide gradients. The mid-tide water table gradients average approximately 1.1×10^{-3} feet/feet across the southern third of the site and approximately 4.3×10^{-3} feet/feet between the northern portion of the site and Jamaica Bay.

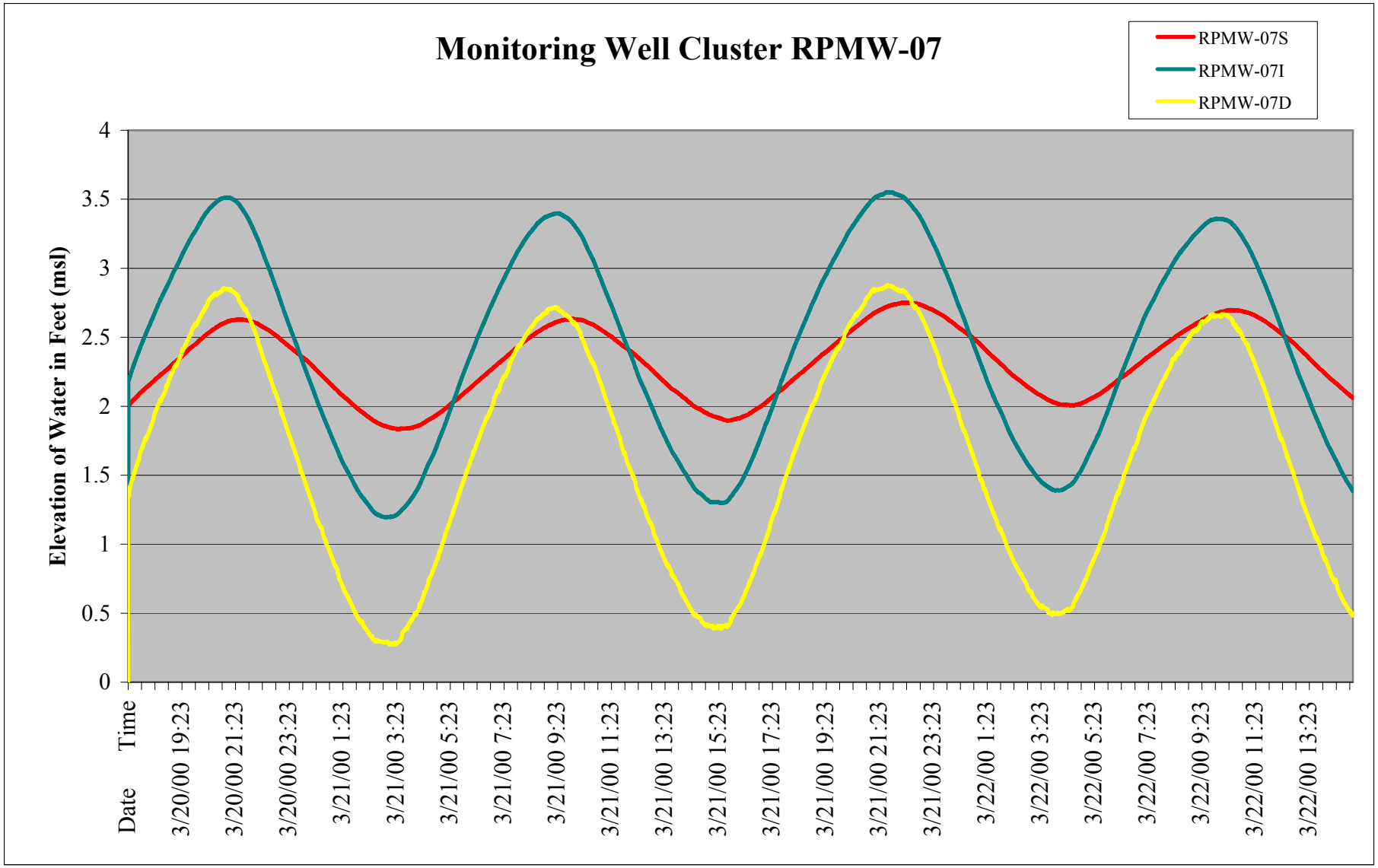
3.4.3 Vertical Groundwater Flow

Because data from the RPMW-07 monitoring well cluster indicated significant tidally-induced vertical head differences over the 48-hour tidal survey, it was determined that non-instantaneous water levels obtained at other monitoring well clusters during non-nodal tidal stages could not be utilized to accurately assess vertical flow patterns throughout the site without considering the tidal stage of Jamaica Bay. Therefore, data recorded in the shallow, intermediate and deep wells of monitoring well cluster RPMW-07 during the tidal survey were utilized to assess vertical hydraulic gradients within the site. **Figure 3-11** illustrates water elevations in monitoring wells RPMW-07S, RPMW-07I and RPMW-07D throughout the 48-hour tidal survey.

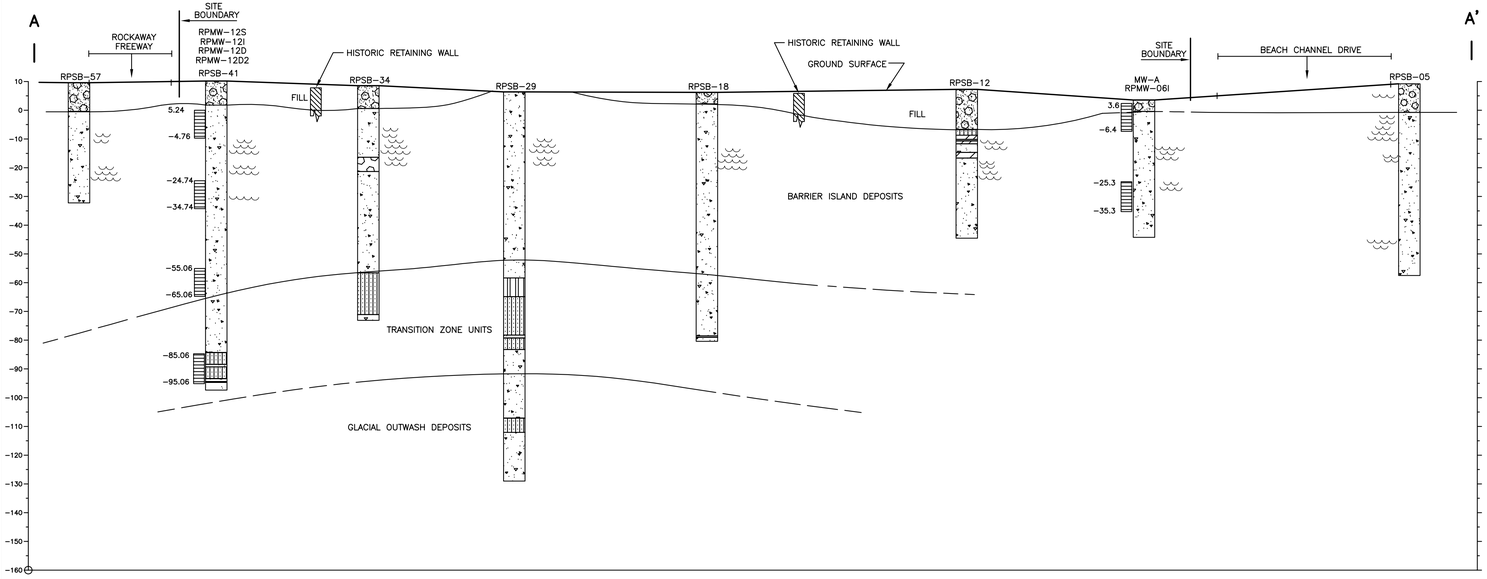
Similar to other shallow monitoring wells, tidally induced vertical water level fluctuations in RPMW-07S were of relatively low amplitude and were generally less than 0.75-foot between high and low tides. Intermediate depth monitoring well RPMW-07I exhibited tidal fluctuations of approximately 2 feet and water levels in deep monitoring well RPMW-07D fluctuated by up to approximately 2.5 feet. Review of **Figure 3-11** indicates a general upward vertical gradient with flow from deep groundwater to shallow groundwater during periods of high tide. However, as the tide recedes (ebbing tide), this upward gradient appears to lessen and by mid-tide periods, the vertical gradient has reversed to a downward gradient where shallow groundwater would tend to flow towards deep groundwater. The downward gradient appears to persist through low tide and into the majority of incoming or ebbing stages of the tide. This

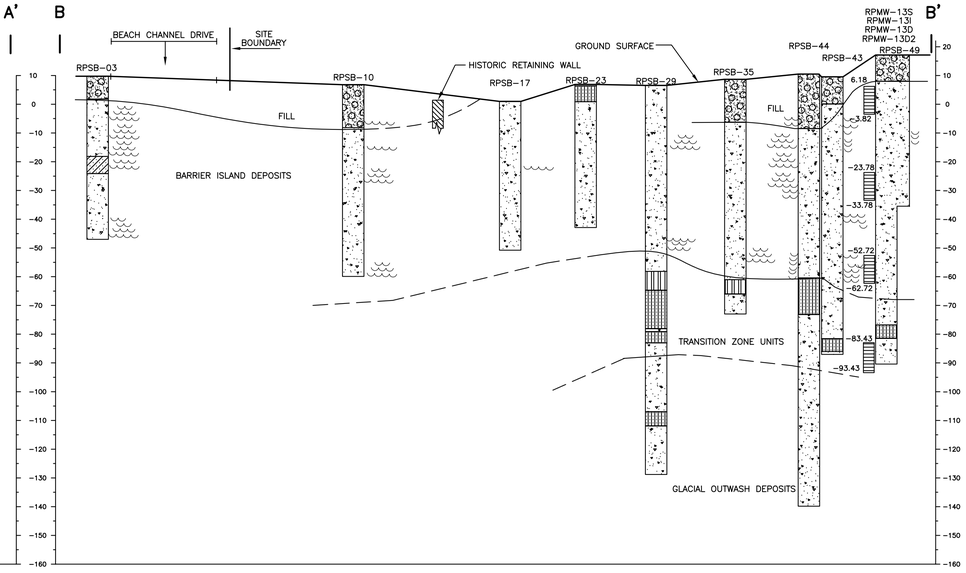
FIGURE 3-11

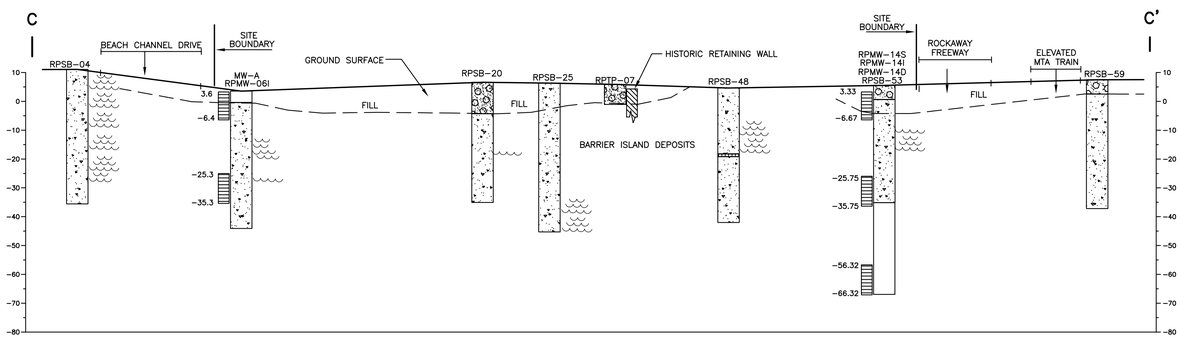
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
FLUCTUATIONS IN WATER TABLE AND DEEP AND INTERMEDIATE POTENTIOMETRIC SURFACE ELEVATIONS

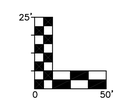


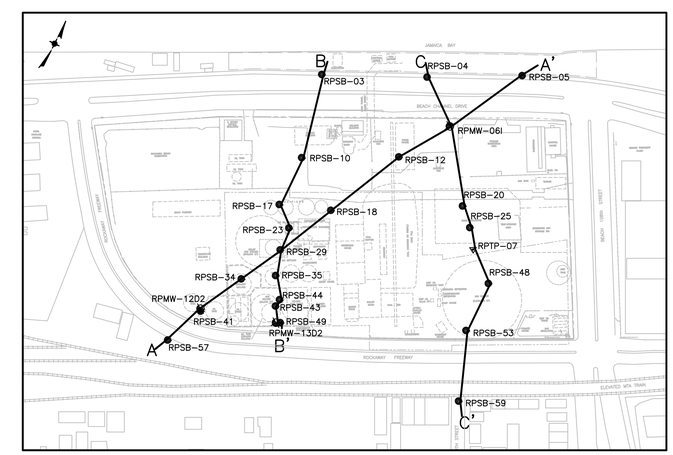
oscillation from upward to downward vertical gradients appears to occur throughout the tidal cycle.











KEY MAP
SHOWING CROSS-SECTION LINES

SCALE:1"=150'

GEOLOGIC UNITS

UNIT:	DESCRIPTION
FILL (RECENT)	MOSTLY GRAY, BLACK, TAN, BROWN SAND WITH VARYING AMOUNTS OF CLAY, SILT AND GRAVEL. SOME SHELLS AND VEGETATIVE MATTER. INCORPORATED ANTHROPOGENIC MATERIALS INCLUDE COAL, TAR, CLINKER, SLAG, ASH, CRUSHED SHALE, WOOD, CONCRETE, BRICK, GLASS AND OTHER DEBRIS. GOOD PERMEABILITY.
BARRIER ISLAND DEPOSITS (HOLOCENE)	GRAY, VERY FINE TO COARSE, BUT MOSTLY FINE TO MEDIUM GRAINED SAND WITH SOME MICA. INCLUDES DISTINCT SHELL BEDS/LENSES OFTEN OCCURING WITH GRAVEL. GENERALLY WELL SORTED. GOOD PERMEABILITY.
TRANSITION ZONE UNITS (EARLY HOLOCENE TO LATE PLEISTOCENE)	DARK BROWN TO BROWNISH GRAY, GRAY, OLIVE AND BLUISH-BLACK, SILTY SAND, SILT AND OR CLAY INTERBEDDED WITH SAND. USUALLY MICACEOUS. NO SHELL HORIZONS, MODERATELY TO POORLY SORTED, MODERATE PERMEABILITY.
GLACIAL OUTWASH (PLEISTOCENE)	BROWNISH TO YELLOW-ORANGE-BROWN OR YELLOW-GRAY SAND, INCLUDES SOME SILTY SAND. DOCUMENTED AS WELL TO MODERATELY WELL SORTED AND AS POSSESSING EXCELLENT PERMEABILITY.

LEGEND

- FILL AND/OR TOPSOIL
- FINE, MED. TO COARSE SANDS TO FINE, MED. TO COARSE SANDS WITH GRAVEL
- SILT TO CLAY RICH SILT
- SILTY SAND TO SILT WITH SAND
- CLAY
- CLAY WITH SAND
- GRAVEL, GRAVEL WITH SAND
- HISTORIC RETAINING WALL TOTAL DEPTH UNKNOWN
- SOIL BORING
- -32.0 / -42.0 WELL SCREEN AT ELEVATION INTERVAL GIVEN IN FEET RELATIVE TO MEAN SEA LEVEL
- GROUND SURFACE
- GRADATIONAL LITHOLOGIC CONTACT, DASHED WHERE INFERRED
- ELEVATION OF WATER TABLE GIVEN IN FEET ABOVE MEAN SEA LEVEL, DASHED WHERE INFERRED
- SITE BOUNDARY
- SHELLS AND/OR SHELL FRAGMENTS

NO.	DATE	REVISION	INT.

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DESIGNED BY: V.V. | CHECKED BY: T.F.

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

GEOLOGIC CROSS-SECTIONS
A-A', B-B' & C-C'

PROJECT NO. 1620-C
DATE: OCTOBER 2002
SCALE: AS SHOWN
DRAWING NO. 3A

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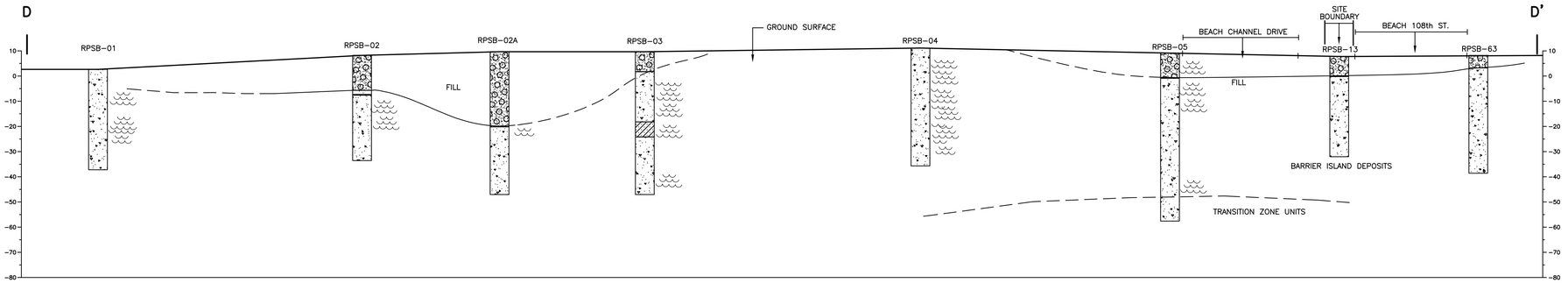
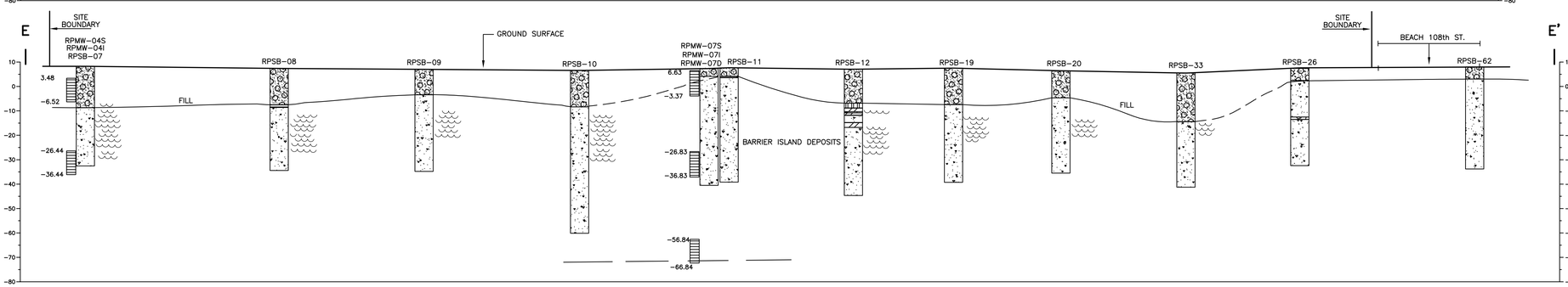
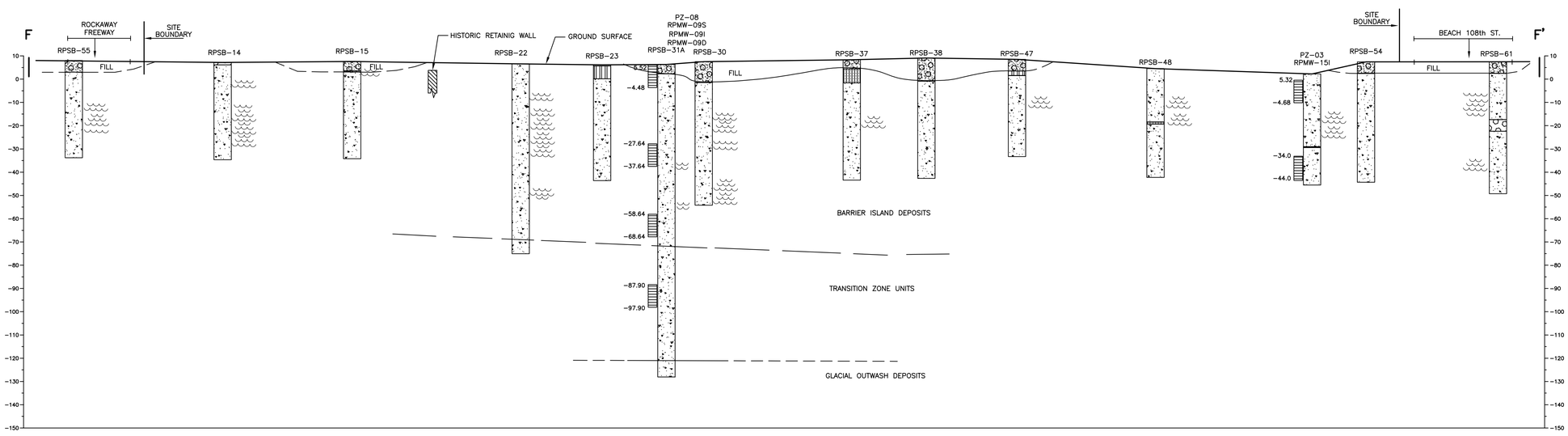




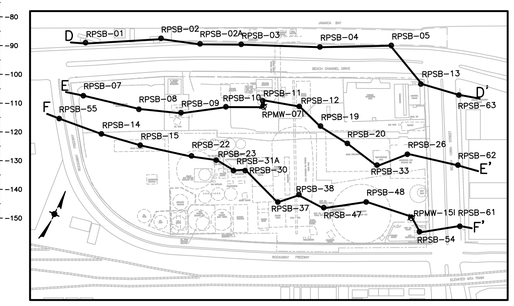


GEOLOGIC UNITS

UNIT:	DESCRIPTION
FILL (RECENT)	MOSTLY GRAY, BLACK, TAN, BROWN SAND WITH VARYING AMOUNTS OF CLAY, SILT AND GRAVEL. SOME SHELLS AND VEGETATIVE MATTER. INCORPORATED ANTHROPOGENIC MATERIALS INCLUDE COAL, TAR, CLINKER, SLAG, ASH, CRUSHED SHALE, WOOD, CONCRETE, BRICK, GLASS AND OTHER DEBRIS. GOOD PERMEABILITY.
BARRIER ISLAND DEPOSITS (HOLOCENE)	GRAY, VERY FINE TO COARSE, BUT MOSTLY FINE TO MEDIUM GRAINED SAND WITH SOME MICA. INCLUDES DISTINCT SHELL BEDS/LENSES OFTEN OCCURING WITH GRAVEL. GENERALLY WELL SORTED. GOOD PERMEABILITY.
TRANSITION ZONE UNITS (EARLY HOLOCENE TO LATE PLEISTOCENE)	DARK BROWN TO BROWNISH GRAY, GRAY, OLIVE AND BLUISH-BLACK, SILTY SAND, SILT AND OR CLAY INTERBEDDED WITH SAND. USUALLY MICACEOUS. NO SHELL HORIZONS, MODERATELY TO POORLY SORTED, MODERATE PERMEABILITY.
GLACIAL OUTWASH (PLEISTOCENE)	BROWNISH TO YELLOW-ORANGE-BROWN OR YELLOW-GRAY SAND, INCLUDES SOME SILTY SAND. DOCUMENTED AS WELL TO MODERATELY WELL SORTED AND AS POSSESSING EXCELLENT PERMEABILITY.

LEGEND

- FILL AND/OR TOPSOIL
- FINE, MED. TO COARSE SANDS TO FINE, MED. TO COARSE SANDS WITH GRAVEL
- SILT TO CLAY RICH SILT
- SILTY SAND TO SILT WITH SAND
- CLAY
- CLAY WITH SAND
- GRAVEL, GRAVEL WITH SAND
- HISTORIC RETAINING WALL TOTAL DEPTH UNKNOWN
- SOIL BORING
- -33.3 / -43.3 WELL SCREEN AT ELEVATION INTERVAL GIVEN IN FEET RELATIVE TO MEAN SEA LEVEL
- GROUND SURFACE
- GRADATIONAL LITHOLOGIC CONTACT, DASHED WHERE INFERRED
- ELEVATION OF WATER TABLE GIVEN IN FEET ABOVE MEAN SEA LEVEL, DASHED WHERE INFERRED
- SITE BOUNDARY
- SHELLS AND/OR SHELL FRAGMENTS



KEY MAP
SHOWING CROSS-SECTION LINES

SCALE:1"=200'

25' 0 50'

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DESIGNED BY: V.V.	CHECKED BY: T.F.

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

GEOLOGIC CROSS-SECTIONS
D-D', E-E' & F-F'

PROJECT NO. 1620-C
DATE: OCTOBER 2002
SCALE: AS SHOWN
DRAWING NO. 3B

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4.0 NATURE AND EXTENT OF CHEMICAL CONSTITUENTS

4.1 Introduction

This section provides a detailed discussion of the investigation results. The data and relevant historical information are used to identify the presence and types of chemicals in the environment, their likely source(s), and the extent to which various chemical constituents have migrated on or from the site.

The discussion of the investigation results is organized according to the subdivision of the site, as described in **Section 2.1**, where the site has been grouped into two general investigation areas; on-site and off-site areas. The on-site field investigation includes sampling activities conducted as part of the Substation Investigation Report and Delisting Petition (discussed in **Section 1.7.4**), the Cut and Plug IRM (discussed in **Section 1.8**) and a portion of the Transmission Cable Investigation completed in November 2001. The off-site field investigation includes sampling activities conducted as part of the Underground Feeder Cable Investigation (discussed in **Section 1.7.5**), a portion of the Transmission Cable Investigation completed in November 2001 and the Bulkhead Investigation completed in April 2002.

Drawing 2 provides the surveyed locations of all completed on-site and off-site sample locations along with the approximate locations of former MGP structures located on the site. **Appendix E** contains **Tables 1** through **72** which summarize the analytical results of all samples collected during this site investigation and other associated investigations. The sum total of all positively detected BTEX compounds, as well as the sum total of all detected PAHs and carcinogenic PAHs (CaPAHs) are also provided in the data summary tables.

The assessment of the presence of chemicals in the environment was performed using sample analytical results and physical descriptions of recovered sample media. In the case of groundwater, upgradient groundwater quality was compared to downgradient quality. In the case of metals within soil, values were compared to typical metals concentrations observed within eastern United States soil (see **Table 4-1**). When relevant, data generated under this investigation

TABLE 4-1

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TYPICAL BACKGROUND CONCENTRATIONS OF METALS IN SOIL

Metals	Background Levels - Eastern USA (mg/kg)
Aluminum	0.7 - > 10
Antimony	-
Arsenic	< 0.1 - 73
Barium	10 - 1,500
Beryllium	< 1 - 7
Cadmium	-
Calcium	0.01 - 28
Chromium	1 - 1,000
Cobalt	< 0.3 - 70
Copper	< 1 - 700
Iron	0.01 - > 10
Lead	< 10 - 300
Magnesium	0.005 - 5
Manganese	< 2 - 7,000
Mercury	0.01 - 3.4
Nickel	< 5 - 700
Potassium	0.005 - 3.7
Selenium	< 0.1 - 3.9
Silver	-
Sodium	< 0.05 - 5
Thallium	-
Vanadium	< 7 - 300
Zinc	< 5 - 2,900

NOTES:

From: H.T. Shacklette and J.G. Boerngen, USGS Professional Paper 1270, 1984

- : Not established.

are compared to data generated during prior investigations in order to assess trends in reduction or migration of chemical constituents.

In addition, the analytical results of the investigation were compared to NYSDEC regulatory standards, criteria and guidance values (SCGs) for *screening* purposes. The analytical data tables provided in **Appendix E** present a column for SCGs including those provided in the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 for soil and the Class GA groundwater standards and guidance values provided in the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 for groundwater. Concentrations of chemical constituents that exceed the SCGs are bracketed on the data tables. Also, **Tables 4-2** through **4-5** summarize the concentration range, frequency of exceeding SCGs and the specific SCG for chemical constituents typically associated with former MGP sites. The tables also include a column that identifies the samples in which the maximum concentrations of those chemical constituents were detected.

BTEX compounds were the principal volatile organic compounds (VOCs) detected in samples and are the common VOCs associated with tar and other MGP-related material. Semivolatile organic compounds (SVOCs) were also detected at the site with PAHs being the common subset of SVOCs in tar and other MGP-related material. For purposes of this report, PAHs include the compounds listed below.

- 2-Methylnaphthalene
- Benzo(b)fluoranthene
- Fluorene
- Acenaphthene
- Benzo(g,h,i)perylene
- Indeno(1,2,3-cd)pyrene
- Acenaphthylene
- Benzo(k)fluoranthene
- Naphthalene
- Anthracene
- Chrysene
- Phenanthrene
- Benzo(a)anthracene
- Dibenzo(a,h)anthracene
- Pyrene
- Benzo(a)pyrene
- Fluoranthene
- Dibenzofuran

Table 4-2
Rockaway Park Former MGP Site
Summary of Chemical Constituents Typically Associated with Former MGP Sites and Comparison to NYSDEC SCGs
On-Site Soil

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPM)	CONCENTRATION RANGE (PPM)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Surface Soil	VOCs	Benzene	0.06	ND to 0.002	0 of 13	RPSS-15
		Toluene	1.5	ND	0 of 13	NA
		Ethylbenzene	5.5	ND to 0.002	0 of 13	RPSS-16
		Total Xylenes	1.2	ND to 0.006	0 of 13	RPSS-16
	PAHs	Benzo(a)pyrene *	0.061	0.24 to 8.4	13 of 13	RPSS-10
		Dibenzo(a,h)anthracene *	0.014	ND to 3.3	9 of 13	RPSS-10
		Benzo(a)anthracene *	0.224	0.31 to 15	13 of 13	RPSS-10
		Indeno(1,2,3-cd)pyrene *	3.2	0.19 to 11	5 of 13	RPSS-10
		Benzo(b)fluoranthene *	1.1	0.26 to 19	11 of 13	RPSS-10
		Benzo(k)fluoranthene *	1.1	0.24 to 10	7 of 13	RPSS-10
		Chrysene *	0.4	0.35 to 20	12 of 13	RPSS-10
		Naphthalene	13	ND to 3.9	0 of 13	RPSS-10
		2-Methylnaphthalene	36.4	ND to 3.7	0 of 13	RPSS-10
		Acenapthylene	41	ND to 13	0 of 13	RPSS-10
		Acenapthene	50	ND to 0.16	0 of 13	RPSS-12
		Dibenzofuran	6.2	ND to 0.39	0 of 13	RPSS-10
		Fluorene	50	ND to 1.3	0 of 13	RPSS-10
		Phenanthrene	50	0.26 to 12	0 of 13	RPSS-09
		Anthracene	50	ND to 6.6	0 of 13	RPSS-10
		Fluoranthene	50	0.52 to 17	0 of 13	RPSS-10
		Pyrene	50	0.6 to 31	0 of 13	RPSS-10
		Benzo(ghi)perylene	50	ND to 12	0 of 13	RPSS-10
		Total CaPAHs	10	1.64 to 86.70	9 of 13	RPSS-10
		Total PAHs	500 [1]	3.55 to 185.59	0 of 13	RPSS-10
	Metals	Arsenic	7.5	1.5 to 12.7	3 of 13	RPSS-09
		Barium	300	23.5 to 87.5	0 of 13	RPSS-08
		Cadmium	10 [2]	0.53 to 5.8	1 of 13	RPSS-06
		Chromium	50 [2]	4.7 to 27.8	0 of 13	RPSS-16
		Lead	500	13.9 to 706	1 of 13	RPSS-16
		Mercury	0.1	0.021 to 0.78	9 of 13	RPSS-09
		Selenium	2	ND to 7.5	1 of 13	RPSS-16
		Silver	SB	1 to 6.6	NA	RPSS-10
		Cyanide	NA	0.13 to 9.4	NA	RPSS-10
Subsurface Soil	VOCs	Benzene	0.06	ND to 490	31 of 198	RPSB-12(14-16)
		Toluene	1.5	ND to 770	14 of 198	RPSB-48(4-6)

Table 4-2
Rockaway Park Former MGP Site
Summary of Chemical Constituents Typically Associated with Former MGP Sites and Comparison to NYSDEC SCGs
On-Site Soil

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPM)	CONCENTRATION RANGE (PPM)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Subsurface Soil (cont.)		Ethylbenzene	5.5	ND to 890	40 of 198	RPSB-12(4-6)
		Total Xylenes	1.2	ND to 1,200	50 of 198	RPSB-39(2-4)
	PAHs	Benzo(a)pyrene *	0.061	ND to 350	108 of 198	RPSB-12(14-16)
		Dibenzo(a,h)anthracene *	0.014	ND to 44	57 of 198	RPSB-20(2-4)
		Benzo(a)anthracene *	0.224	ND to 600	83 of 198	RPSB-20(2-4)
		Indeno(1,2,3-cd)pyrene *	3.2	ND to 190	43 of 198	RPSB-20(2-4)
		Benzo(b)fluoranthene *	1.1	ND to 410	68 of 198	RPSB-20(2-4)
		Benzo(k)fluoranthene *	1.1	ND to 180	57 of 198	RPSB-09(2-4)
		Chrysene *	0.4	ND to 620	76 of 198	RPSB-20(2-4)
		Naphthalene	13	ND to 9,600	51 of 198	RPSB-09(2-4)
		2-Methylnaphthalene	36.4	ND to 3,300	42 of 198	RPSB-12(14-16)
		Acenapthylene	41	ND to 650	13 of 198	RPSB-22(60-62)
		Acenapthene	50	ND to 1,800	25 of 198	RPSB-12(14-16)
		Dibenzofuran	6.2	ND to 110	28 of 198	RPSB-09(2-4)
		Fluorene	50	ND to 1,000	29 of 198	RPSB-12(14-16)
		Phenanthrene	50	ND to 4,200	38 of 198	RPSB-20(2-4)
		Anthracene	50	ND to 900	28 of 198	RPSB-12(14-16)
		Fluoranthene	50	ND to 1,200	30 of 198	RPSB-20(2-4)
		Pyrene	50	ND to 2,300	35 of 198	RPSB-20(2-4)
		Benzo(ghi)perylene	50	ND to 190	7 of 198	RPSB-20(2-4)
		Total CaPAHs	10	ND to 2,204	60 of 198	RPSB-20(2-4)
		Total PAHs	500 [1]	ND to 21,575	36 of 198	RPSB-12(14-16)
	Metals	Arsenic	7.5	ND to 40	4 of 190	RPSB-09(2-4)
		Barium	300	0.96 to 269	0 of 190	RPSB-46(4-6)
		Cadmium	10 [2]	ND to 6.9	0 of 190	RPSB-09(2-4)
		Chromium	50 [2]	0.89 to 21.3	0 of 190	RPSB-09(2-4)
		Lead	500	ND to 448	0 of 190	RPSB-31A(2-4)
		Mercury	0.1	ND to 1.8	13 of 190	RPSB-14(0-2)
		Selenium	2	ND to 73	17 of 190	RPSB-09(2-4)
		Silver	SB	ND to 5.9	NA	RPSB-09(2-4)
		Cyanide	NA	ND to 138	NA	RPSB-09(2-4)

Notes:
SCGs: NYSDEC TAGM 4046 dated January 1994.
NA: Not applicable.
ND: Non-detect.
SB: Site Background
* Carcinogenic PAH (CaPAH).
1. SCG is for Total SVOCs.
2. Proposed NYSDEC TAGM criteria.

Table 4-3
Rockaway Park Former MGP Site
Summary of Chemical Constituents Typically Associated with Former MGP Sites and Comparison to NYSDEC SCGs
On-Site Groundwater

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPB)	CONCENTRATION RANGE (PPB)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Groundwater	VOCs	Benzene	1	ND to 46,000	28 of 38	MW-03
		Toluene	5	ND to 23,000	24 of 38	MW-03
		Ethylbenzene	5	ND to 2,300	27 of 38	RPMW-14S
		Total Xylenes	5	ND to 14,000	32 of 38	RPMW-15I
	PAHs	Benzo(a)pyrene *	ND	ND to 14	5 of 38	RPMW-07I
		Dibenzo(a,h)anthracene *	NA	ND	NA	NA
		Benzo(a)anthracene *	0.002	ND to 18	10 of 38	RPMW-07I
		Indeno(1,2,3-cd)pyrene *	0.002	ND to 6	2 of 38	RPMW-07I
		Benzo(b)fluoranthene *	0.002	ND to 14	7 of 38	RPMW-07I
		Benzo(k)fluoranthene *	0.002	ND to 4	3 of 38	RPMW-07I
		Chrysene *	0.002	ND to 18	10 of 38	RPMW-07I
		Naphthalene	10	ND to 9,200	28 of 38	PZ-02
		2-Methylnaphthalene	NA	ND to 1,200	NA	PZ-02
		Acenapthylene	NA	ND to 290	NA	RPMW-12S
		Acenapthene	20	ND to 300	12 of 38	RPMW-07S
		Dibenzofuran	NA	ND to 6	NA	PZ-01, PZ-08, MW-A
		Fluorene	50	ND to 130	8 of 38	RPMW-07S
		Phenanthrene	50	ND to 180	14 of 38	RPMW-13S
		Anthracene	50	ND to 33	0 of 38	RPMW-12S
		Fluoranthene	50	ND to 40	0 of 38	RPMW-07I
		Pyrene	50	ND to 72	2 of 38	RPMW-07I
		Benzo(ghi)perylene	NA	ND to 7	NA	RPMW-07I
		Total CaPAHs	NA	0.00 to 74	NA	RPMW-07I
		Total PAHs	NA	0.00 to 10,907	NA	PZ-02
	Metals	Arsenic	25	ND to 13.9	0 of 38	RPMW-12S
		Barium	1,000	6.3 to 157	0 of 38	PZ-05
		Cadmium	5	ND to 2	0 of 38	PZ-03
		Chromium	50	ND to 70.3	3 of 38	RPMW-13I
		Lead	25	ND to 117	4 of 38	PZ-03
		Mercury	0.7	ND to 0.22	0 of 38	RPMW-14D
		Selenium	10	ND to 8.3	0 of 38	RPMW-09D2
		Silver	50	ND to 6.8	0 of 38	PZ-03
		Cyanide	200	ND to 748	11 of 38	PZ-08
	Chloride	Chloride	250,000	10,000 to 19,000,000	10 of 38	RPMW-09D2

Notes:
SCGs: NYSDEC Class GA Groundwater Standards/Guidelines.
NA: Not applicable.
ND: Non-detect.
*: Carcinogenic PAH (CaPAH).

Table 4-4
Rockaway Park Former MGP Site
Summary of Chemical Constituents Typically Associated with Former MGP Sites and Comparison to NYSDEC SCGs
Off-Site Soil

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPM)	CONCENTRATION RANGE (PPM)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Surface Soil	VOCs	Benzene	0.06	ND	0 of 11	ND
		Toluene	1.5	ND to 0.016	0 of 11	RPSS-20
		Ethylbenzene	5.5	ND to 0.001	0 of 11	RPSS-20
		Total Xylenes	1.2	ND to 0.019	0 of 11	RPSS-20
	PAHs	Benzo(a)pyrene *	0.061	ND to 37	10 of 11	RPSS-24
		Dibenzo(a,h)anthracene *	0.014	ND to 1.7	8 of 11	RPSS-24
		Benzo(a)anthracene *	0.224	ND to 8.6	10 of 11	RPSS-21
		Indeno(1,2,3-cd)pyrene *	3.2	ND to 6.1	1 of 11	RPSS-24
		Benzo(b)fluoranthene *	1.1	ND to 8.2	8 of 11	RPSS-24
		Benzo(k)fluoranthene *	1.1	ND to 2.8	4 of 11	RPSS-24
		Chrysene *	0.4	ND to 7.6	8 of 11	RPSS-21
		Naphthalene	13	ND to 1.4	0 of 11	RPSS-17
		2-Methylnaphthalene	36.4	ND to 0.930	0 of 11	RPSS-17
		Acenapthylene	41	ND to 7.2	0 of 11	RPSS-24
		Acenapthene	50	ND to 0.380	0 of 11	RPSS-21
		Dibenzofuran	6.2	ND to 0.220	0 of 11	RPSS-21
		Fluorene	50	ND to 1.8	0 of 11	RPSS-21
		Phenanthrene	50	0.15 to 17	0 of 11	RPSS-21
		Anthracene	50	ND to 2.8	0 of 11	RPSS-24
		Fluoranthene	50	0.25 to 15	0 of 11	RPSS-21
		Pyrene	50	0.31 to 23	0 of 11	RPSS-21
		Benzo(ghi)perylene	50	ND to 6.6	0 of 11	RPSS-24
		Total CaPAHs	10	0.00 to 34.9	5 of 11	RPSS-24
		Total PAHs	500 [1]	0.78 to 91.24	0 of 11	RPSS-21
	Metals	Arsenic	7.5	0.61 to 12.2	3 of 11	RPSS-21
		Barium	300	5 to 52.9	0 of 11	RPSS-24
		Cadmium	10	0.17 to 0.98	0 of 11	RPSS-01
		Chromium	50	2.4 to 4.2	0 of 11	RPSS-24
		Lead	500	16.5 to 289	0 of 11	RPSS-17
		Mercury	0.1	0.017 to 0.48	1 of 11	RPSS-01
		Selenium	2	ND to 0.52	0 of 11	RPSS-17
		Silver	SB	ND to 1.5	NA	RPSS-01
		Cyanide	NA	0.15 to 21.3	NA	RPSS-17
Subsurface Soil	VOCs	Benzene	0.06	ND to 20	5 of 127	RPSB-61(10-12)
		Toluene	1.5	ND to 180	4 of 127	RPSB-61(10-12)
		Ethylbenzene	5.5	ND to 190	6 of 127	RPSB-61(10-12)
		Total Xylenes	1.2	ND to 2,400	6 of 127	RPSB-61(10-12)
	PAHs	Benzo(a)pyrene *	0.061	ND to 33	35 of 127	RPSB-85(24-26)
		Dibenzo(a,h)anthracene *	0.014	ND to 3.8	17 of 127	RPSB-56(5-7)
		Benzo(a)anthracene *	0.224	ND to 59	27 of 127	RPSB-114(4-6)

Table 4-4
Rockaway Park Former MGP Site
Summary of Chemical Constituents Typically Associated with Former MGP Sites and Comparison to NYSDEC SCGs
Off-Site Soil

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPM)	CONCENTRATION RANGE (PPM)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
		Indeno(1,2,3-cd)pyrene *	3.2	ND to 17	9 of 127	RPSB-56(5-7)
Subsurface Soil (cont.)		Benzo(b)fluoranthene *	1.1	ND to 34	17 of 127	RPSB-114(4-6)
		Benzo(k)fluoranthene *	1.1	ND to 18	11 of 127	RPSB-114(4-6)
		Chrysene *	0.4	ND to 65	26 of 127	RPSB-114(4-6)
		Naphthalene	13	ND to 520	6 of 127	RPSB-84(24-26)
		2-Methylnaphthalene	36.4	ND to 290	25 of 127	RPSB-85(24-26)
		Acenapthylene	41	ND to 130	38 of 127	RPSB-92A(98-100)
		Acenapthene	50	ND to 200	24 of 127	RPSB-84(24-26)
		Dibenzofuran	6.2	ND to 12	33 of 127	RPSB-56(5-7)
		Fluorene	50	ND to 140	4 of 127	RPSB-85(24-26)
		Phenanthrene	50	ND to 410	6 of 127	RPSB-85(24-26)
		Anthracene	50	ND to 170	34 of 127	RPSB-114(4-6)
		Fluoranthene	50	ND to 150	3 of 127	RPSB-114(4-6)
		Pyrene	50	ND to 240	6 of 127	RPSB-114(4-6)
		Benzo(ghi)perylene	50	ND to 17	0 of 127	RPSB-56(5-7)
		Total CaPAHs	10	0.00 to 216.3	13 of 127	RPSB-114(4-6)
		Total PAHs	500 [1]	0.00 to 2139.9	5 of 127	RPSB-85(24-26)
	Metals	Arsenic	7.5	ND to 20.4	1 of 54	RPSB-113(0-2)
		Barium	300	0.72 to 72.4	0 of 54	RPSB-03(5-7)
		Cadmium	10 [2]	ND to 1.2	0 of 54	RPSB-03(30-32)
		Chromium	50 [2]	0.37 to 29.9	0 of 54	RPSB-87(21-23)
		Lead	500	ND to 206	0 of 54	RPSB-114(4-6)
		Mercury	0.1	ND to 1.6	8 of 54	RPSB-87(21-23)
		Selenium	2	ND to 7.1	2 of 54	RPSB-03(30-32)
		Silver	SB	ND to 2.2	NA	RPSB-02A(30-32)
		Cyanide	NA	ND to 12.8	NA	RPSB-96(4-6)

Notes:
SCGs: NYSDEC TAGM 4046 dated January 1994.
NA: Not applicable.
ND: Non-detect.
SB: Site Background
* Carcinogenic PAH (CaPAH).
1. SCG is for Total SVOCs.
2. Proposed NYSDEC TAGM criteria.

Table 4-5
Rockaway Park Former MGP Site
Summary of Chemical Constituents Typically Associated with Former MGP Sites and Comparison to NYSDEC SCGs
Off-Site Groundwater

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPB)	CONCENTRATION RANGE (PPB)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Groundwater	VOCs	Benzene	1	ND to 8,900	20 of 94	RPGP-05(26-30)
		Toluene	5	ND to 2,700	9 of 94	RPGP-06(6-10)
		Ethylbenzene	5	ND to 9,900	21 of 94	RPGP-06(6-10)
		Total Xylenes	5	ND to 6,000	18 of 94	RPGP-06(6-10)
	PAHs	Benzo(a)pyrene *	ND	ND to 70	7 of 94	RPGP-17(6-10)
		Dibenzo(a,h)anthracene *	NA	ND to 12	NA	RPGP-17(6-10)
		Benzo(a)anthracene *	0.002	ND to 87	10 of 94	RPGP-17(6-10)
		Indeno(1,2,3-cd)pyrene *	0.002	ND to 39	3 of 94	RPGP-17(6-10)
		Benzo(b)fluoranthene *	0.002	ND to 84	8 of 94	RPGP-17(6-10)
		Benzo(k)fluoranthene *	0.002	ND to 36	4 of 94	RPGP-17(6-10)
		Chrysene *	0.002	ND to 93	8 of 94	RPGP-17(6-10)
		Naphthalene	10	ND to 7,200	26 of 94	RPMW-02I
		2-Methylnaphthalene	NA	ND to 420	NA	RPMW-02I
		Acenapthylene	NA	ND to 200	NA	RPMW-02S
		Acenapthene	20	ND to 460	16 of 94	RPGP-23(22-26)
		Dibenzofuran	NA	ND to 40	NA	RPGP-20(6-10)
		Fluorene	50	ND to 82	3 of 94	RPMW-02S
		Phenanthrene	50	ND to 560	3 of 94	RPGP-20(6-10)
		Anthracene	50	ND to 140	1 of 94	RPGP-20(6-10)
		Fluoranthene	50	ND to 200	2 of 94	RPGP-17(6-10)
		Pyrene	50	ND to 260	3 of 94	RPGP-20(6-10)
		Benzo(ghi)perylene	NA	ND to 35	NA	RPGP-17(6-10)
		Total CaPAHs	NA	0.00 to 421	NA	RPGP-17(6-10)
		Total PAHs	NA	0.00 to 7,944	NA	RPMW-02I
	Metals	Arsenic	25	ND to 16.2	0 of 16	RPMW-03S
		Barium	1,000	10.4 to 620	0 of 16	RPMW-11D
		Cadmium	5	ND to 2.6	0 of 16	RPMW-03D
		Chromium	50	ND to 37.6	0 of 16	RPMW-17I
		Lead	25	ND to 52.4	1 of 16	RPMW-17D
		Mercury	0.7	ND	0 of 16	NA
		Selenium	10	ND to 6.3	0 of 16	RPMW-01S
		Silver	50	ND to 19.5	0 of 16	RPMW-11D
		Cyanide	200	ND to 688	2 of 16	RPMW-01I
	Chloride	Chloride	250,000	8,000 to 17,000,000	11 of 15	RPMW-01S

Notes:
SCGs: NYSDEC Class GA Groundwater Standards/Guidelines.
NA: Not applicable.
ND: Non-detect.
*: Carcinogenic PAH (CaPAH).

Of these PAHs, the following constituents are considered CaPAHs by EPA.

- Benzo(a)anthracene
- Dibenzo(a,h)anthracene
- Benzo(a)pyrene
- Benzo(k)fluoranthene
- Indeno(1,2,3-cd)pyrene
- Benzo(b)fluoranthene
- Chrysene

The analytical results of this investigation and previous investigations are discussed relative to the presence of total BTEX and total PAHs.

The following terminology and descriptions were used to describe the visual and olfactory observations made during the field investigation, as well as to describe the nature of the observed materials.

- **Nonaqueous phase liquid (NAPL):** NAPL is a liquid that does not readily dissolve in water and can exist as a separate fluid phase. Tar and oil released in a soil/water environment will behave as NAPLs. NAPLs are subdivided into two types, those that are lighter than water (light nonaqueous phase liquid or LNAPL) and those with a density greater than water (dense nonaqueous phase liquid or DNAPL). Being lighter than water, LNAPLs will float on water. A common example of an LNAPL would be gasoline or oil floating on water. DNAPLs, being denser than water, would tend to sink through water. Though examples of DNAPLs in everyday life are not very common, an analogy to a DNAPL in water would be an oil and vinegar salad dressing where the vinegar represents the water. When the oil and vinegar mixture is shaken, it is momentarily mixed as an emulsion. However, after settling, the oil being lighter than the water/vinegar will float to the top of the container whereas the vinegar will settle to the bottom.

- **Saturated:** This describes the condition when the entire pore space of the soil matrix for a given soil sample is filled with water or a NAPL. If NAPL is encountered, the characteristics of the observed NAPL are typically used in the description of the sample (i.e., tar-saturated or petroleum-saturated).

- **Blebs:** Observed discrete sphericals, droplets or pockets of NAPL within a soil or groundwater sample. The characteristics of the observed NAPL are typically used in the description of the sample (i.e., tar blebs or petroleum blebs).

- **Stained:** This describes the condition when a soil sample exhibits a discoloration not associated with natural processes. The color of the observed stain is sometimes used and if the characteristics of the staining material are discernible, they are also noted (i.e., tar-stained or petroleum-stained).

- **Sheen:** The iridescence observed within a soil sample or the surface of a groundwater sample created by the presence of small quantities of NAPL.

- **Odor:** If an odor is present, it is described based on its relative intensity and characteristics. Relative odor intensity is described using terms such as strong, moderate and faint. Descriptive terms such as tar-like, naphthalene-like or hydrocarbon-like odors are also used when such determinations can be made.

- **Coal Tar:** Coal Tar is a byproduct of the manufactured gas process and is typically comprised of a broad spectrum of hydrocarbon compounds including BTEX compounds, PAHs and phenols. However, it should be noted that elevated concentrations of phenols have generally not been encountered in association with investigations being conducted by KeySpan at their former MGP sites. Coal tar can be encountered in a solid, semi-solid or liquid state. Similar to petroleum, coal tar does not readily dissolve in water and will exist as a NAPL when released in a soil/water environment. With respect to the Rockaway Park former MGP site, evidence of NAPL that is likely of a coal tar origin has been encountered on-site in subsurface soil and groundwater primarily within close proximity of former MGP structures that were located in the central, northern and eastern portions of the site. Evidence of NAPL of a coal tar origin was also detected to the north of the site in subsurface soil and groundwater. While coal tar appears to be present in on-site and off-site subsurface soil and groundwater, it has not been encountered in recoverable quantities.

4.2 On-Site Field Investigation

4.2.1 Surface Soil

In general, collected surface soil samples consisted of brown to dark brown/black fine to medium sand containing varying amounts of organic matter such as leaves and plant roots. The samples did not exhibit any odors or apparent staining indicative of MGP-related constituents.

The analytical results of surface soil samples analyzed for BTEX compounds and PAHs are summarized in **Tables 1** and **2**, respectively. RCRA metals and total cyanide are summarized in **Table 3**, and total phenols are summarized in **Table 4**.

BTEX

BTEX compounds were detected in 4 of the 13 samples collected on-site. The highest total BTEX concentration of 0.008 mg/kg was observed at surface soil sample RPSS-16, located in the southeast corner of the site adjacent to the former drip oil tanks. The remaining detectable concentrations of total BTEX were 0.003, 0.002 and 0.001 mg/kg observed in samples RPSS-05, RPSS-15 and RPSS-06, respectively.

Total BTEX concentrations in the nine surface soil samples collected during the 1997 Phase I Site Investigation, discussed in **Section 1.7.2**, ranged from a minimum of non-detect at SS-01 and SS-7, located in the central portion of the site, to a maximum of 0.041 mg/kg at SS-8, located in the western-central portion of the site. The 1997 BTEX results for surface soil were found to be generally consistent with the current investigation results.

PAH

All 13 surface soil samples exhibited detectable concentrations of total PAHs. The highest concentration of total PAHs was 185.59 mg/kg, observed at surface soil sample RPSS-10, collected from the eastern portion of the site within the area of the former Oxide Enclosure. All 18 targeted PAHs were detected within one or more samples. The most frequently detected PAHs included: benzo(a)pyrene, benzo(a)anthracene, phenanthrene, pyrene, indeno(1,2,3-cd) pyrene, benzo(b)fluoranthene, fluoranthene, benzo(k)fluoranthene, and chrysene. In addition, anthracene, benzo(g,h,i)perylene and acenaphthylene were detected in 12 of the 13 surface soil samples. Similarly, naphthalene was detected in 11 of 13 samples; 2-methylnaphthalene was detected in 10 of 13 samples; and dibenzo(a,h)anthracene was detected in 9 of 13 samples.

Total PAH concentrations in the nine surface soil samples collected during the 1997 Phase I Site Investigation ranged from a minimum of 1.4 mg/kg at SS-01, located in the central portion of the site, to a maximum of 398.3 mg/kg at SS-5, located in the southeast portion of the

site by the former 2-Million Cubic Foot Storage Holder. The 1997 PAH results for surface soil were found to be slightly higher than the current investigation results.

RCRA Metals and Cyanide

Metals analysis indicates that all RCRA metals were found to be generally within typical background concentrations for soil in the eastern United States. Total cyanide was either not detected or detected at concentrations below the contract required detection limit (CRDL) of 1 mg/kg in 6 of the 13 surface soil samples. The ranges of RCRA metals and cyanide concentrations in the surface soil samples are summarized below:

Constituents	Concentration Range	Sample Exhibiting Maximum Concentration
Arsenic	1.5 to 12.7 mg/kg	RPSS-09
Barium	23.5 to 87.5 mg/kg	RPSS-08
Cadmium	0.53 to 5.8 mg/kg	RPSS-06
Chromium	4.7 to 27.8 mg/kg	RPSS-16
Lead	13.9 to 706 mg/kg	RPSS-16
Mercury	0.021 to 0.78 mg/kg	RPSS-09
Selenium	Non-Detect to 7.5 mg/kg	RPSS-16
Silver	1.0 to 6.6 mg/kg	RPSS-10
Cyanide	0.13 to 9.4 mg/kg	RPSS-10

All nine surface soil samples collected during the 1997 Phase I Site Investigation were analyzed for RCRA metals. All metals were found to be generally within the background concentration range typical of the eastern United States. The ranges of RCRA metals and cyanide concentrations in these surface soil samples are summarized below:

Constituents	Concentration Range	Sample Exhibiting Maximum Concentration
Arsenic	1.2 - 14.8 mg/kg	SS-05
Barium	11.9 - 82.1 mg/kg	SS-02

Constituents	Concentration Range	Sample Exhibiting Maximum Concentration
Cadmium	0.21 - 0.37 mg/kg	SS-09
Chromium	3.9 - 39.3 mg/kg	SS-03
Lead	12.4 - 761 mg/kg	SS-05
Mercury	0.05 - 0.35 mg/kg	SS-02
Selenium	0.6 - 1.2 mg/kg	SS-05
Silver	0.41 - 0.44 mg/kg	SS-08
Cyanide	0.52 - 324 mg/kg	SS-05

This range of results is generally consistent with the results from the surface soil samples collected during the 1999-2000 Remedial Investigation, with the exception of the concentration of cyanide found in SS-05 (324 mg/kg). This sample was collected to the east of the former Gas Holder in the southeast portion of the property. The highest concentration of cyanide detected in the 1999-2000 Remedial Investigation was found in soil sample RPSS-10 (9.4 mg/kg). This sample was collected in the area of the former Oxide Enclosure located in the eastern portion of the site.

Phenols

None of the on-site surface soil samples exhibited detectable levels of phenols.

Four of the nine surface soil samples collected in the 1997 Phase I Site Investigation were analyzed for phenols (SS-06, SS-07, SS-08 and SS-09). SS-06 and SS-07 were collected from the central portion of the site and SS-08 and SS-09 were collected along the western portion of the site. None of these samples exhibited detectable levels of phenols.

4.2.2 Subsurface Soil

The analytical results of subsurface soil samples analyzed for BTEX and PAHs are summarized in **Tables 5** and **6**, respectively. RCRA metals and total cyanide are summarized in **Table 7**. Total phenols are summarized in **Table 8**. All parameters detected by the full

NYSDEC TCL/TAL analysis which are not already presented in BTEX, PAH and RCRA metals summary tables are summarized in **Table 9** for VOCs, **Table 10** for SVOCs and **Table 11** for TAL metals. In addition, pesticides and polychlorinated biphenyls (PCBs) are summarized in **Table 12**.

In addition, Dvirka and Bartilucci Consulting Engineers (D&B) conducted an investigation of the proposed substation for the Rockaway Park site in October 1999, which included analysis of 19 subsurface soil samples collected from 6 Geoprobe soil borings and one structural test soil boring. The analytical results for soil samples analyzed for BTEX, PAHs, RCRA metals/total cyanide and total phenols are included in **Tables 13, 14, 15** and **16**, respectively.

Similarly, D&B completed a Transmission Cable Investigation in November 2001, which included analysis of eight subsurface soil samples collected from three soil borings. The analytical results for BTEX, PAHs and total cyanide are included in **Tables 17, 18** and **19**, respectively.

BTEX

Of the 198 subsurface soil samples collected for analysis, 169 samples exhibited detectable levels of BTEX. Samples exhibiting total BTEX concentrations in excess of 100 mg/kg were generally collected from soil exhibiting blebs/globs/sheens, naphthalene/ hydrocarbon-like odors and staining. Additionally, the majority of these samples exhibited PID measurements in excess of 100 ppm. In virtually every soil sample, ethylbenzene and xylene were the predominant BTEX compounds with benzene and toluene in many cases being below detection limits even in the samples with the highest levels of total BTEX.

The maximum total BTEX concentration observed in subsurface soil on the Rockaway Park site was 2,474 mg/kg, identified in soil sample RPSB-12 (14-16 feet) located in the north central portion of the site within the area of the former Store House. Subsurface soil recovered from depths of 4 to 36 feet bgs at soil boring RPSB-12 exhibited NAPL, sheen, heavy

hydrocarbon-like odors and staining. PID measurements were greatest (i.e., >500 ppm) in soil from boring RPSB-12 between the depths of 6 to 16 feet bgs. Total BTEX concentrations decreased with depth, as total BTEX was below detection limits in soil sample RPSB-12 (50-52 feet).

The next highest total BTEX concentrations of 1,654 mg/kg and 1,641 mg/kg were observed in soil samples RPSB-39 (2-4 feet) and RPSB-48 (4-6 feet), respectively. Both of these samples were collected in the area of the former 2-Million Cubic Foot Gas Holder. Subsurface soil observed at soil boring RPSB-39 exhibited odors and PID measurements of greater than 2,000 ppm from 2 to 12 feet bgs. Analytical results for total BTEX in subsurface soil samples RPSB-39 (25-27 feet) and RPSB-39 (42-44 feet) were 0.033 mg/kg and 0.159 mg/kg, respectively, indicating that BTEX concentrations are greatest in the shallow depths of the boring sample column. Subsurface soil observed at soil boring RPSB-48 exhibited odors, sheen, some staining and PID measurements greater than 2,000 ppm from 4 to 12 feet bgs. Decreasing PID measurements characterize soil samples collected from soil boring RPSB-48 between the depths of 14 to 26 feet, where PID measurements ranged from 45.6 ppm at 14 feet bgs to 0.0 ppm between the depths of 20-26 feet bgs. In addition, BTEX concentrations appear to decrease with increasing depth with soil samples RPSB-48 (22-24 feet) and RPSB-48 (45-47 feet) exhibiting total BTEX concentrations of 0.005 mg/kg and 0.009 mg/kg, respectively.

The highest BTEX concentrations substantiated with field observations and PID measurements generally exist within the former Gas Works area of the site. Based on the flow directions of shallow groundwater and the locations of samples exhibiting the highest total BTEX concentrations, the following former MGP structures and/or areas surrounding those structures are considered likely BTEX source areas:

- 2-Million Cubic Foot Gas Holder;
- Store House;
- Oil tanks south of the office building;
- Boiler Room;

- Northern portion of the Oxide Enclosure;
- Half-Million Cubic Foot Relief Gas Holder;
- Tar De-emulsifier and Tar Drier;
- Exhauster House/Naphthalene Scrubber;
- Centrifuge Building;
- Purifiers in the central portion of the former Gas Works;
- Oil Tanks on the southwest portion of the site;
- Drip Oil Tank on the southeast portion of the site; and
- Skimming basin.

BTEX analysis of subsurface soil samples collected from soil borings RPSB-07, RPSB-08, RPSB-14, RPSB-15 and RPSB-21 suggest that the northwest portion of the site is relatively free of BTEX compounds. Concentrations of BTEX reported from soil samples collected from these borings ranged between nondetect to 0.097 mg/kg.

Total BTEX concentrations in the nine subsurface soil samples that were collected during the 1997 Phase I Site Investigation ranged from a minimum of 1.35 mg/kg at SB-01, located in the north-central portion of the site, to a maximum of 1,096 mg/kg at SB-02 in the center of the site, adjacent to the former Half-Million Cubic Foot Relief Gas Holder. All nine samples were collected from three separate soil borings, SB-01, SB-02 and SB-03. The BTEX results were found to be generally consistent with the current investigation results.

In general, BTEX concentrations in subsurface soil appear to decrease with depth, even in areas exhibiting evidence of NAPL. With the exception of soil samples collected from borings RPSB-22 and RPSB-29 (both completed within the former Half-Million Cubic Foot Relief Gas Holder), total BTEX concentrations were not detected in excess of 0.616 mg/kg in samples collected below a depth of 27 feet bgs. Soil sample RPSB-22 (60-62 feet) exhibited a total BTEX concentration of 87 mg/kg and a corresponding PID measurement of 1,100 ppm. Diminishing odor and staining/sheen was reported to a depth of 72 feet in soil boring RPSB-22. Total BTEX

concentrations decreased to 0.069 mg/kg in soil sample RPSB-22 (80-82 feet). In addition, soil sample RPSB-29 (55-57 feet) exhibited a total BTEX concentration of 20.14 mg/kg and a PID measurement of 310 ppm. Total BTEX concentrations decreased with depth to 0.02 mg/kg in soil sample RPSB-29 (134-136 feet).

Drawing 4A depicts total BTEX/PAHs in shallow (i.e., 2 to 12 feet bgs) subsurface soil within the Rockaway Park site and surrounding areas. This map is based on extensive soil data obtained during the Phase I investigation completed by GEI in 1997, the Interim Remedial Measure Study completed by GEI in 1999, the Cut and Plug Interim Remedial Measure completed in 1999, the Underground Feeder Cable Investigation conducted in 2000, a portion of the Transmission Cable Investigation completed in November 2001, as well as soil data generated as part of this investigation. The data utilized for this map is based on subsurface data collected at depths ranging from 2 to 12 feet bgs, the zone which exhibits the highest levels of BTEX/PAHs in subsurface soil. At sample locations where more than one sample was analyzed for BTEX/PAHs within this depth range, the highest concentration detected was utilized in developing the map. Therefore, the map represents a reasonable estimate of the areal distribution of BTEX/PAHs concentrations in subsurface soil. In addition, **Drawing 4B** represents the map for total BTEX/PAHs in intermediate (i.e., 13 to 24 feet bgs) subsurface soil within the Rockaway Park site and surrounding areas.

Based on the review of **Drawings 4A** and **4B** and supporting data, the following is observed with respect to BTEX concentrations:

1. The northwest portion of the Rockaway site does not contain concentrations of total BTEX greater than 31.5 mg/kg.

2. The highest concentrations of BTEX in shallow subsurface soil are found in the area around GEI soil boring B-23 northeast of the former Oxide Enclosure. This area extends west to the former location of the former Store House and former Skimming Basin in the vicinity of soil boring RPSB-12. A second area of BTEX constituents in subsurface soil is in the vicinity of the former 2-Million Cubic Foot Gas Holder as indicated by data from soil borings RPSB-39 and RPSB-48. A third area of BTEX compounds is located at the central portion of the former Gas Works area in the vicinity of the former Naphthalene Scrubber, Half-Million Cubic Foot Relief Gas Holder, former Exhauster House and former Purifiers. This area extends south to the

former location of the former Oil Tanks located along the southern property boundary. Finally, a fourth area of BTEX constituents is located in the south central portion of the site near the former Boiler Room, as indicated by the data from soil boring RPSB-51.

3. Some off-site migration of BTEX has occurred within subsurface soil along the eastern and southern property boundaries of the Rockaway Park site. BTEX in subsurface soil was observed off the southeast corner of the site, as indicated by the data from soil boring RPSB-61. Similarly, BTEX compounds in subsurface soil were observed to the south of the site, as indicated by the data from soil boring RPSB-80 advanced as part of the Underground Feeder Cable Investigation.
4. In general, total BTEX concentrations were shown to decrease with depth. **Drawing 4B** indicates that samples from only three soil borings exhibited total BTEX concentrations greater than 100 mg/kg in intermediate soil. The maximum total BTEX concentration of 2,474 mg/kg in intermediate soil was observed in a sample from soil boring RPSB-12 which is located in the vicinity of the former Store House.

PAHs

Of the 197 subsurface soil samples collected from on-site locations at the Rockaway Park site for PAH analysis, 169 samples exhibited detectable levels of PAHs. Detectable levels of total PAHs ranged from trace concentrations of less than 0.33 mg/kg to a maximum total concentration of 21,575 mg/kg observed in soil sample RPSB-12 (14-16 feet). As indicated above, this sample also exhibited the highest total BTEX concentration (2,474 mg/kg), as well as product, staining and a heavy hydrocarbon-like odor. The next highest total PAH concentration (19,527 mg/kg) was observed in sample RPSB-09 (2-4 feet). Soil boring RPSB-09 is located in the former Oil Tank Area south of the office building. Soil samples collected from this boring also exhibited clinker, tar and an odor to a depth of approximately 12 feet bgs.

Comparing the concentrations of BTEX and PAHs in subsurface soil, it is apparent that the highest (>500 mg/kg) PAHs concentrations are found within the same areas exhibiting the highest BTEX concentrations, with several exceptions. Soil sample RPSB-31A (2-4 feet), collected near the former Naphthalene Scrubber and Exhauster House, exhibited a total concentration of 0.72 mg/kg for BTEX constituents and a total concentration of 931 mg/kg for PAHs. In addition, soil sample RPSB-34 (8-10 feet), collected on the north side of the former

Half-Million Gallon Oil Tank, exhibited a total BTEX concentration of 0.13 mg/kg and a total PAH concentration of 2,023 mg/kg.

Consistent with the BTEX results, PAH data indicates that the highest concentrations are generally present within the former Gas Works area in the southern portion of the Rockaway Park site. The following former MGP structures represent likely source areas of PAHs:

- Eastern Purifiers on the northwestern portion of the former Gas Works;
- The Half-Million Cubic Foot Relief Gas Holder;
- The Tar Drying/Tar De-emulsifying structures;
- The Purifiers located in the southwestern portion of the former Gas Works;
- The Gas Holders on the southwestern portion of the former Gas Works and the Compressor Building;
- Boiler Room;
- Store House;
- Oxide Enclosure; and
- Centrifuge Building.

Consistent with the BTEX results, PAH data indicate that the northwest portion of the site appears to be relatively free of PAHs with total PAHs not exceeding 281.2 mg/kg in subsurface soil.

As with BTEX, PAH concentrations also tend to decrease with depth at the Rockaway Park site. With the exception of six samples collected within the western portion of the former Gas Works, soil samples with total PAH concentrations were not detected in excess of 15 mg/kg in samples collected below a depth of 27 feet bgs. These exceptions are summarized below:

Sample ID	Total PAH Concentration (mg/kg)	Sample Location	Physical Observations in Soil
RPSB-22 (60-62 feet)	9,038	Half-Million Cubic Foot Relief Gas Holder	Tar saturated
RPSB-29 (55-57 feet)	3,229	Half-Million Cubic Foot Relief Gas Holder	Staining and heavy hydrocarbon-like odors
RPSB-34 (40-42 feet)	43.8	500,000-Gallon Oil Tank	Staining and hydrocarbon-like odors
RPSB-35 (60-62 feet)	286.5	Southwest Purifiers	Staining and hydrocarbon-like odors
RPSB-43 (45-47 feet)	174.3	60,000-Cubic Foot Gas Holder	Sheen, staining, odors
RPSB-92A (98-100 feet)	1,225	Store House	Staining and naphthalene-like odors

Total PAH concentrations at most of these boring locations also decrease with depth as concentrations of 2.5, 2.3, 3.6, 2.2 and 1.1 mg/kg were observed in soil samples RPSB-22 (80-82 feet), RPSB-29 (134-136 feet), RPSB-34 (80-82 feet), RPSB-35 (80-82 feet) and RPSB-43 (95-97 feet), respectively.

Total PAH concentrations in the nine subsurface samples collected during the 1997 Phase I Site Investigation ranged from a minimum of 45.6 mg/kg at SB-01, located in the north-central portion of the site, to a maximum of 6,884 mg/kg at SB-02, located in the center of the site, adjacent to the former Half-Million Cubic Foot Relief Gas Holder. All nine samples were collected from three separate soil borings, SB-01, SB-02 and SB-03. Total PAH results for the subsurface soil samples were found to be generally consistent with the current investigation.

Based on the review of **Drawings 4A** and **4B** and supporting data, the following is observed with respect to PAH concentrations:

1. PAH data is generally consistent with BTEX data and indicates subsurface soil within the northwest portion of the Rockaway Park site does not contain total PAH concentrations above 281.2 mg/kg.

2. The highest concentrations of PAHs in subsurface soil are observed in the vicinity of the former Oil Tanks south of the Office Building, as indicated by the data from soil boring RPSB-09. In addition, PAHs in subsurface soil are observed in the vicinity of the former Oxide Enclosure, as indicated by the data from soil boring RPSB-20. PAHs in subsurface soil are also observed in the vicinity of the former Oil Tank southwest of the former Gas Works area, as indicated by soil sample TP-08B, and in the area of the former Store House, as indicated by the data from soil boring RPSB-12. PAHs were also detected throughout the former Gas Works area.

3. Although total BTEX was not found above the detection limit of 0.013 mg/kg, PAHs were detected in subsurface soil samples from boring RPSB-56 (located southwest of the site), soil boring RPSB-92 (located north of the site) and soil boring RPSB-114 (located northeast of the site) at concentrations of 420.4 mg/kg, 208 mg/kg and 1,283.5 mg/kg

4. Similar to total BTEX, total PAH concentrations were shown to generally decrease with depth. **Drawing 4B** indicates that only five soil borings exhibited total PAH concentrations in intermediate soil greater than 100 mg/kg.

RCRA Metals and Total Cyanide

RCRA metals detected in subsurface soil samples were found to be generally within or below typical background concentrations for soil in the eastern United States. Total cyanide analysis indicates that in 162 of the 198 subsurface soil samples, cyanide was either not detected or was detected at concentrations below the CRDL of 1 mg/kg. The ranges of RCRA metal and cyanide concentrations in the subsurface soil samples collected at the Rockaway site are summarized below:

Constituents	Concentration Range	Sample Exhibiting Maximum Concentration
Arsenic	Non-Detect to 40 mg/kg	RPSB-09 (2-4 feet)
Barium	0.96 to 269 mg/kg	RPSB-46 (4-6 feet)
Cadmium	Non-Detect to 6.9 mg/kg	RPSB-09 (2-4 feet)
Chromium	0.89 to 21.3 mg/kg	RPSB-09 (2-4 feet)
Lead	Non-Detect to 448 mg/kg	RPSB-31A (2-4 feet)
Mercury	Non-Detect to 1.8 mg/kg	RPSB-14 (0-2 feet)
Selenium	Non-Detect to 73 mg/kg	RPSB-09 (2-4 feet)

Constituents	Concentration Range	Sample Exhibiting Maximum Concentration
Silver	Non-Detect to 5.9 mg/kg	RPSB-09 (2-4 feet)
Cyanide	Non-Detect to 138 mg/kg	RPSB-09 (2-4 feet)

As shown above, the highest concentrations of arsenic, cadmium, chromium, selenium, silver, and cyanide were found in sample RPSB-09 (2-4 feet). Soil boring RPSB-09 was advanced in the vicinity of the three former aboveground oil tanks located to the south of the office building. Soil recovered at this boring from 2 to 4 feet bgs consisted of a gray-black clayey and silty fill and coarse sand with varying amounts of wood fragments along with an odor.

TAL Metals

Seventeen subsurface soil samples obtained from on-site depths of 10 feet bgs or less were analyzed for TAL metals. Results for those metals not reported with RCRA Metals results are summarized in **Table 11**. Metals analysis of the 17 subsurface soil samples, indicates all NYSDEC TAL metals to be generally within or below typical background concentrations for soil in the eastern United States. The ranges of TAL metal concentrations in the subsurface soil samples are summarized below:

TAL Metals	Concentration Range	Sample Exhibiting Maximum Concentration
Aluminum	161 to 1,990 mg/kg	RPSB-35 (0-2 feet)
Antimony	Non-Detect to 0.61 mg/kg	RPSB-23 (2-4 feet)
Beryllium	Non-Detect	---
Calcium	49.6 to 50,200 mg/kg	RPSB-15 (3-5 feet)
Cobalt	Non-Detect to 7.2 mg/kg	RPSB-26 (4-6 feet)
Copper	0.82 to 40 mg/kg	RPSB-24 (3-5 feet)
Iron	610 to 16,800 mg/kg	RPSB-33 (2-4 feet)
Magnesium	62.6 to 6,990 mg/kg	RPSB-24 (3-5 feet)

TAL Metals	Concentration Range	Sample Exhibiting Maximum Concentration
Manganese	4.3 to 76.6 mg/kg	RPSB-35 (0-2 feet)
Nickel	0.65 to 17.8 mg/kg	RPSB-26 (4-6 feet)
Potassium	62 to 261 mg/kg	RPSB-35 (0-2 feet)
Sodium	Non-Detect to 776 mg/kg	RPSB-15 (3-5 feet)
Thallium	Non-Detect to 0.71 mg/kg	RPSB-51 (5-7 feet)
Vanadium	Non-Detect to 40.1 mg/kg	RPSB-51 (5-7 feet)
Zinc	1.5 to 251 mg/kg	RPSB-23 (2-4 feet)

The nine subsurface soil samples that were collected during the 1997 Phase I Site Investigation were not analyzed for TAL metals.

Phenols

Total phenols analyses by USEPA Method 9065 indicate that 189 of 190 subsurface soil samples from the Rockaway Park site did not exhibit detectable levels of phenols. It should be noted that the CRDL for USEPA Method 9065 is 5 mg/kg. Subsurface soil sample RPSB-12 (14-16 feet) was the only sample with a detectable level of total phenols, exhibiting a concentration of 23 mg/kg.

The nine subsurface soil samples that were collected during the 1997 Phase I Site Investigation were not analyzed for phenols.

As discussed in **Section 1.3** of the report, gas production at the Rockaway Park former MGP site was manufactured using primarily the carbureted water gas process. Given the fact that production of phenolic compounds was largely limited to coal carbonization processes (Gas Research Institute 1996), phenols would not be expected to be prevalent at the site.

Volatile Organic Compounds

Analysis of 17 on-site subsurface soil samples for full NYSDEC TCL VOCs indicates that the most commonly detected VOCs, other than BTEX, are methylene chloride and acetone, both common laboratory-related chemicals. Other detectable VOCs included, tetrachloroethene (detected in 5 out of 17 samples), styrene (detected in 4 out of 17 samples), carbon disulfide and 2-butanone (each detected in 4 out of 17 samples), and trichloroethene (detected in one sample). The highest VOC concentration was observed in soil sample RPSB-48 (4-6 feet) in which styrene was detected at a concentration of 440 mg/kg. Styrene is a known chemical constituent of coal tar (Gas Research Institute 1996). As discussed previously, soil sample RPSB-48 (4-6 feet) also exhibited a total BTEX concentration of 1,641 mg/kg, as well as staining, odors, a sheen and elevated PID measurements.

The nine subsurface soil samples that were collected during the 1997 Phase I Site Investigation were not analyzed for full NYSDEC TCL VOCs.

Semivolatile Organic Compounds

Analysis of the 17 subsurface soil samples for full NYSDEC TCL SVOCs by USEPA Method 8270 indicates that only five non-PAH SVOCs were present in these samples. It should be noted that the CRDL for USEPA method 8270 is either 0.330 mg/kg or 0.670 mg/kg, depending on the compound. Two of these SVOCs, 2-methylphenol and 4-methylphenol, were observed in soil sample RPSB-33 (2-4 feet) at concentrations of 0.038 and 0.048 mg/kg, respectively. Phenol, a common constituent of tar acids of coal tars (Gas Research Institute, 1996), was also detected in soil sample RPSB-33 (2-4 feet) at an estimated concentration of 0.04 mg/kg. In addition, bis(2-ethylhexyl)phthalate was observed in RPSB-15 (3-5 feet) at 0.26 mg/kg and RPSB-26 (4-6 feet) at 0.52 mg/kg. Bis(2-ethylhexyl)phthalate is a common laboratory chemical. Finally, carbazole was observed in RPSB-23 (2-4 feet) at 4.6 mg/kg, RPSB-24 (3-5 feet) at 0.72 mg/kg, RPSB-27 (2-4 feet) at 3.3 mg/kg and RPSB-33 (2-4 feet) at 0.069 mg/kg. Carbazole is a known constituent of coal tar (Dragun 1988).

The nine subsurface soil samples that were collected during the 1997 Phase I Site Investigation were not analyzed for full NYSDEC TCL SVOCs.

Pesticides

Analysis of the 17 subsurface soil samples for NYSDEC TCL pesticides indicates that 3 of the 17 samples, RPBS-15 (3-5 feet), RPSB-35 (0-2 feet) and RPSB-42 (5-7 feet), did not exhibit detectable pesticide concentrations. All other soil samples exhibited at least one pesticide at detectable concentrations. Detected pesticides ranged in concentration from 0.002 mg/kg of endosulfan I in sample RPSB-14 (0-2 feet), to 0.5 mg/kg of 4,4-DDT in soil sample RPSB-23 (2-4 feet). The greatest number of pesticides (14) were identified in soil sample RPSB-24 (3-5 feet), where concentrations ranged from 0.0023 mg/kg of beta-BHC, to 0.29 mg/kg of 4,4-DDD. The second greatest number of pesticide detections (10) occurred in soil sample RPSB-23 (2-4 feet). Concentrations in this sample ranged from 0.32 mg/kg of alpha-BHC to 0.5 mg/kg of 4,4-DDT.

Of the 21 pesticides analyzed, only toxaphene was not detected in any of the Rockaway Park on-site subsurface soil samples. The most commonly detected pesticide, 4,4-DDT, was present in nine of the samples. Pesticides detected at or above 0.10 mg/kg include: delta-BHC, detected at 0.29 mg/kg in sample RPSB-41 (7-9 feet); dieldrin, detected at 0.37 mg/kg in sample RPSB-23 (2-4 feet); endrin, detected at 0.23 mg/kg in sample RPSB-23 (2-4 feet); 4,4-DDD, detected at 0.1 mg/kg in sample RPSB-23 (2-4 feet); gamma-chlordane, detected at 0.18 mg/kg in sample RPSB-23 (2-4 feet); and 4,4-DDT, detected at concentrations of 0.5 mg/kg in sample RPSB-23 (2-4 feet), 0.26 mg/kg in sample RPSB-29 (7-9 feet), 0.37 mg/kg in sample RPSB-30 (9-11 feet) and 0.11 mg/kg in sample RPSB-41 (7-9 feet).

The nine subsurface soil samples that were collected during the 1997 Phase I Site Investigation were not analyzed for pesticides.

PCBs

PCBs were detected in 4 of the 17 subsurface soil samples analyzed for PCBs at the Rockaway Park site. Aroclor-1242 was detected in soil samples RPSB-12 (2-4 feet) and RPSB-14 (0-2 feet) at concentrations of 0.11 mg/kg and 0.18 mg/kg, respectively. Aroclor-1254 was detected in soil sample RPSB-23 (2-4 feet) at a concentration of 0.32 mg/kg. Aroclor-1260 was detected in soil samples RPSB-14 (0-2 feet) and RPSB-25 (4-6 feet) at concentrations of 0.24 mg/kg and 0.047 mg/kg, respectively.

The nine subsurface soil samples that were collected during the 1997 Phase I Site Investigation were not analyzed for PCBs.

4.2.3 Groundwater

On-site groundwater quality at the Rockaway Park site was characterized through the collection and analysis of groundwater samples collected from three existing shallow monitoring wells, eight existing piezometers and 27 newly installed monitoring wells. As discussed in **Section 2.3**, an existing monitoring well inventory was performed at the beginning of the field investigation program. In general, the existing wells were sampled in March of 2000. BTEX and PAH results are summarized in **Table 20** and **Table 21**, respectively. VOCs and SVOCs are summarized in **Table 22** and **Table 23,** respectively. TAL metals, total cyanide and free cyanide results are summarized in **Table 24**. Chloride and total dissolved solids results are summarized in **Table 25**.

In addition to the chemical data, **Table 4-6** summarizes the measured NAPL thicknesses in monitoring wells and piezometers during the March 2000 sampling event and the November 30, 2001 tidal study.

TABLE 4-6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUMMARY OF MEASURED NAPL THICKNESSES

WELL ID	March 2000	Sampling Observations	High Tide 11/30/01	Sampling Observations	Low Tide 11/30/01	Sampling Observations
RPMW-01S	0.00		0.00		0.00	
RPMW-01I	0.00		0.00		0.00	
RPMW-02S	0.00	Strong naphthalene odor	0.00		0.00	
RPMW-02I	0.00	Strong naphthalene odor	0.00		0.00	
RPWM-02D	0.00	Naphthalene odor	0.00		0.00	
RPMW-03S	0.00		0.00		0.00	
RPMW-03I	0.00		0.00		0.00	
RPMW-03D	0.00		0.00		0.00	
RPMW-04S	0.00		0.00		0.00	
RPMW-04I	0.00		0.00		0.00	
RPMW-05S	0.00	Trace product (LNAPL)	0.00		0.00	
RPMW-05I	0.00		0.00		0.00	
RPMW-06I	0.00		0.00		0.00	
RPMW-07S	0.00		0.00		0.00	
RPMW-07I	0.00		0.00		0.00	
RPMW-07D	0.00		0.00		0.00	
RPMW-08S	0.00		0.00		0.00	
RPMW-08I	0.00		0.00		0.00	
RPMW-09I	0.00		0.00		0.00	
RPMW-09D	0.00		0.00		0.00	
RPMW-09D2	0.00	Deep product noted	0.00		0.00	
RPMW-10S	0.00	Hydrocarbon odor on purge water	0.00		0.00	
RPMW-10I	0.00	Slight hydrocarbon odor on purge water	0.00		0.00	
RPMW-11S	0.00	Product noted	0.00		0.00	
RPMW-11I	0.00		0.00		0.00	
RPMW-11D	0.00	Product noted	0.00		0.00	
RPMW-12S	0.00		0.00		0.00	
RPMW-12I	0.00	Trace product	0.00		0.00	
RPMW-12D	0.00		0.00		0.00	
RPMW-12D2	0.00		0.00		0.00	
RPMW-13S	0.00	Potential deep product	0.00		0.00	Product on probe
RPMW-13I	0.00		0.00		0.00	
RPMW-13D	0.00	Naphthalene odor on purge water	0.00		0.00	
RPMW-13D2	0.00	Naphthalene odor on purge water	0.00		0.00	
RPMW-14S	0.00		0.00		0.00	
RPMW-14I	0.00		0.00		0.00	
RPMW-14D	0.00		0.00		0.00	
RPMW-15I	0.00	Hydrocarbon/xylene/naphthalene odor on purge water	0.00		0.00	
RPMW-16S	0.00		NA		NA	
RPMW-16I	0.00		NA		NA	
RPMW-17S	0.00		0.00		0.00	
RPMW-17I	0.00		0.00		0.00	
RPMW-17D	0.00		0.00		0.00	
PZ-01	0.00		0.00		0.00	
PZ-02	0.00		0.00		0.00	
PZ-03	0.00	Hydrocarbon/naphthalene odor	0.00		0.00	
PZ-04	0.00	Sheen and hydrocarbon odor on purge water	0.00		0.00	
PZ-05	0.00		0.00		0.16	
PZ-06	0.00		0.00		0.00	
PZ-07	0.00		NA		NA	
PZ-08	3.05		0.00		0.25	
MW-A	0.00		0.00		0.00	
MW-01	0.00		0.00		0.00	
MW-3	0.00	Hydrocarbon/naphthalene odor on purge water	0.00		0.00	

Notes:
(1) NAPL measurements are in feet.
NA - Not applicable.

BTEX

Thirty-five out of the 38 on-site groundwater samples exhibited detectable levels of BTEX, with 28 of these samples exhibiting total BTEX concentrations greater than 100 ug/l. The highest levels of BTEX were generally observed along the southeast, southern and southwest perimeter of the Rockaway Park site. The majority of samples (17 out of 27) exceeding the 100 ug/l criteria were collected from shallow groundwater. Four of the 16 shallow groundwater samples exhibited NAPL layers. Four of the 16 shallow groundwater samples exhibited naphthalene and/or hydrocarbon-like odors or a sheen. Additionally, 16 out of 22 samples exhibiting total BTEX concentrations at or above 1,000 ug/l were observed within the shallow groundwater zone. In general, the distribution of BTEX in groundwater is consistent with observed soil concentrations and the presence of NAPL.

The maximum concentration of total BTEX of 78,800 ug/l was detected in the groundwater sample collected from monitoring well MW-03, located on the east side of the site, south of the former Generator Ash Storage Bin and north of the former 2-Million Cubic Foot Gas Holder and the former Drip Tank. Monitoring well MW-03 is screened between the depths of 4 and 14 feet bgs. This sample was described as having hydrocarbon-like and naphthalene-like odors and a PID reading of approximately 300 ppm. The next highest total BTEX concentrations of 22,390 ug/l and 21,588 ug/l were observed in groundwater samples collected from monitoring wells RPMW-10S and RPMW-15I, respectively, which are both located on the east side of the site. RPMW-10S is located on the north side of the former Generator Ash Storage Bin and RPMW-15I is located on the north side of the former Drip Oil Tanks. Groundwater sample RPMW-10S was described as having a hydrocarbon-like odor and a PID reading of approximately 131 ppm. Similarly, groundwater sample RPMW-15I was described as having hydrocarbon-like and naphthalene-like odors and a PID reading of approximately 635 ppm.

Total BTEX constituents were not detected in groundwater above a concentration of 16 ug/l within the northwest portion of the Rockaway Park site. This observation is generally consistent with the total BTEX data for subsurface soil. In addition, with the exception of groundwater sample RPMW-15I, total BTEX concentrations in intermediate groundwater were

shown to be less than shallow groundwater. Six intermediate depth (35-45 feet bgs) groundwater samples exhibited total BTEX concentrations greater than 100 ug/l. These samples were collected from wells RPMW-07I, 08I, 09I, 13I, 14I and 15I and were generally located within the north-central, western, southern and eastern perimeter of the Rockaway Park site. The maximum total BTEX concentration of 21,588 ug/l in intermediate groundwater was observed in sample RPMW-15I. The next highest total BTEX concentration of 4,199 ug/l was detected in groundwater sample RPMW-14I. One of the six intermediate groundwater samples, RPMW-15I, exhibited a hydrocarbon/xylene/naphthalene-like odor.

Five deep groundwater samples exhibited total BTEX concentrations greater than 100 ug/l. These samples were collected from wells RPMW-07D, 09D, 09D2, 13D and 13D2. Wells RPMW-09D and 09D2 are located in the central portion of the former Gas Works area, while RPMW-13D and 13D2 are located in the southern portion of this area. RPMW-07D is located north/downgradient of the former Gas Works. The maximum total BTEX concentration of 12,010 ug/l in deep groundwater was detected in the sample from RPMW-09D. The next highest total BTEX concentrations of 10,700 ug/l and 1,440 ug/l were observed in the samples from RPMW-09D2 and RPMW-13D2, respectively. Groundwater sample RPMW-09D2 exhibited NAPL. In addition, three deep groundwater samples exhibited naphthalene odors.

On-site groundwater data for the Rockaway Park site obtained during the 1997 Phase I Site Investigation was limited to one round of samples collected from six piezometers including PZ-01, PZ-03, PZ-04, PZ-05, PZ-06 and PZ-08. Groundwater samples collected from these piezometers were analyzed for monocyclic aromatic hydrocarbons (MAHs) and PAHs by means of a microscale solvent extraction (MSE) protocol. As a result, this data is of limited use for comparison to current groundwater quality data. It should be noted that MAHs, as defined by GEI, include the BTEX constituents, as well as styrene.

Available historical BTEX data from samples collected in 1995 in support of the 1997 Phase I Site Investigation for on-site piezometers PZ-01, PZ-03, PZ-04, PZ-05, PZ-06 and PZ-08 and the data from samples collected in 2000 and 2001 as part of this investigation are summarized in **Table 4-7**. The data indicates that shallow groundwater BTEX concentrations

TABLE 4-7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

COMPARISON OF GROUNDWATER BTEX AND PAH DATA
FOR EXISTING ON-SITE PIEZOMETERS

	ROCKAWAY PARK SITE							
	PZ-01		PZ-03		PZ-04		PZ-05	
Date	Total BTEX[1]	Total PAHs[2]	Total BTEX[1]	Total PAHs[2]	Total BTEX[1]	Total PAHs[2]	Total BTEX[1]	Total PAHs[2]
Oct-95	5,860	11,400	149,390	1,970	10,880	7,830	53,900	10,700
Mar-00	1,746	402	1,112	105	11,020	3,336	3,310	1,740

	ROCKAWAY PARK SITE			
	PZ-06		PZ-08	
Date	Total BTEX[1]	Total PAHs[2]	Total BTEX[1]	Total PAHs[2]
Oct-95	490	1,700	22,260	113,000
Mar-00	1,120	1,660	NS	NS
Nov-01	--	--	11,070	4,241

Notes:

-- Not Applicable
NS: Not Sampled
[1]: Total BTEX in ug/l
[2]: Total PAHs in ug/l

have decreased an average of approximately 68 percent for piezometers PZ-01, PZ-03, PZ-05 and PZ-08. However, piezometers PZ-04 and PZ-06 indicate an increase in BTEX levels over the same period of time with a total BTEX concentration of 10,880 ug/l detected in the sample collected from PZ-04 in 1995 and a concentration of 11,020 ug/l detected in the sample collected in 2000. The sample from PZ-06 exhibited a total BTEX concentration of 490 ug/l in 1995 while the sample collected in 2000 exhibited a concentration of 1,120 ug/l. These differences in the data obtained from 1995 and 2000 may be attributed to the fact that two different analytical methods were utilized during these investigations. In 1995, GEI utilized the MSE protocol, while samples collected in 2000 as part of this investigation were analyzed for BTEX utilizing USEPA Method 8020.

PAHs

Thirty-seven of the 38 on-site groundwater samples contained detectable levels of PAHs. Twenty-two of these samples contained PAHs concentrations in excess of 200 ug/l. Total PAHs are present in groundwater throughout much of the site, although the highest concentrations are generally observed in the northern, eastern and southern perimeter. The maximum total PAH concentration of 10,907 ug/l was observed in the sample from PZ-02, screened between the depths of 2 and 12 feet bgs and located near the southwest corner of the former substation. Groundwater sample PZ-02 did not exhibit evidence of NAPL; however, the boring log for PZ-02 indicates evidence of petroleum odors and NAPL in subsurface soil at this location. As with a majority of groundwater samples exhibiting PAHs, the predominant PAH species identified at PZ-02 was naphthalene at a concentration of 9,200 ug/l and 2-methylnaphthalene at a concentration of 1,200 ug/l. In general, the distribution of PAHs in groundwater is consistent with observed soil concentrations and the presence of NAPL.

The next highest total PAH concentrations of 9,180 and 7,844 ug/l were observed in groundwater samples RPMW-07S and RPMW-09D, respectively. RPMW-07S is located on the south side of the former Skimming Basin and RPMW-09D is located between the former Foamite House and the former Separator in the central portion of the site. These samples also had a similar composition of PAH compounds when compared to groundwater sample PZ-02

with the predominant species being naphthalene and 2-methylnaphthalene. Groundwater sample RPMW-07S did not exhibit any NAPL but did have a hydrogen sulfide-like odor. PAH concentrations decrease with depth in the area of RPMW-07 with concentrations decreasing from 9,180 ug/l in RPMW-07S to 443 ug/l in sample RPMW-07I and 121 ug/l in sample RPMW-07D. The observed decrease in PAH concentrations correlates with the presence of tar and tar-stained soil above a depth of approximately 35 feet below grade. Tar-related impacts were not observed at deeper depths of RPMW-07. PAH concentrations in the vicinity of groundwater monitoring well RPMW-09 increased with depth between groundwater samples RPMW-09I (2,270 ug/l) and RPMW-09D (7,844 ug/l) and then decreased in the deepest sample, RPMW-09D2 (1,821 ug/l).

In general, the highest total PAH concentrations are observed in shallow samples (collected over a range of 2-12 feet bgs). However, three intermediate samples (collected from 35-45 feet bgs), two deep samples (collected from 65-75 feet bgs) and two very deep samples (collected from 95-105 feet bgs) exhibited PAH concentrations in excess of 200 ug/l. These samples are RPMW-07I, RPMW-08I, RPMW-09I, RPMW-09D, RPMW-09D2, RPMW-13D and RPMW-13D2. These samples were collected from groundwater monitoring wells that are located in the central, western and southern portions of the Rockaway Park site.

PAH groundwater data indicates that the northwestern portion of the site appears to be relatively free of PAHs with total PAH concentrations not exceeding 21 ug/l. These findings are consistent with BTEX groundwater results in this area.

Available historical PAH data from samples collected in 1995 in support of the 1997 Phase I Site Investigation for on-site piezometers PZ-01, PZ-03, PZ-04, PZ-05, PZ-06 and PZ-08 and the data from samples collected in 2000 and 2001 as part of this investigation are summarized in **Table 4-7**. This data indicates that shallow groundwater PAH concentrations have decreased an average of approximately 66 percent for piezometers PZ-01, PZ-03, PZ-04, PZ-05 and PZ-06. However, piezometers PZ-01, PZ-03, PZ-05 and PZ-08 indicate a much more substantial decrease in PAH levels with a total PAH concentration of 11,400 ug/l detected in the sample collected from PZ-01 in 1995 and a concentration of 402 ug/l detected in the sample collected in 2000. The sample from PZ-03 exhibited a total PAH concentration of 1,970 ug/l in

1995 while the sample collected in 2000 exhibited a concentration of only 105 ug/l. Similarly, PZ-05 exhibited a total PAH concentration of 10,700 ug/l in 1995 while the sample collected in 2000 exhibited a concentration of 1,740 ug/l in 2000. Likewise, PZ-08 exhibited a total PAH concentration of 113,000 ug/l in 1995, while the sample collected in 2001 exhibited a concentration of 4,241 ug/l. While historical PAH data is limited, the data suggests that on-site PAH concentrations are decreasing over time.

It should be noted that, based on measurements completed to date, two on-site monitoring wells screened at the water table contained measurable levels of NAPL. In March 2000, piezometer PZ-08, located within the central portion of the former Gas Works, contained approximately 3 feet of measurable LNAPL on the water table. Monitoring well RPMW-05S, located downgradient of piezometer PZ-08 along the northern perimeter of the site, exhibited a trace amount of LNAPL on the water table. DNAPL was also observed in deep monitoring well RPMW-09D2 (located slightly downgradient of piezometer PZ-08) which is screened from 95 to 105 feet bgs. However, groundwater measurements conducted in November 2001 indicate measurable levels of LNAPL in piezometers PZ-05 and PZ-08 of 0.16 feet and 0.25 feet, respectively. Both of these piezometers are located within the former Gas Works area. A comparison of NAPL thicknesses from March 2000 to November 2001 indicates that measurable NAPL in groundwater fluctuates as a function of time.

Volatile Organic Compounds

Of the 61 VOCs analyzed, 15 were detected in groundwater samples obtained from on-site monitoring wells and piezometers at the Rockaway Park site, exclusive of benzene, toluene, ethylbenzene and xylene, which were discussed above in the section on BTEX, and reported separately. The five most common VOCs detected in on-site groundwater samples obtained from monitoring wells and piezometers were: 1,3,5-trimethylbenzene (detected in 29 of the 38 samples); 1,2,4-trimethylbenzene (detected in 26 of 38 samples); styrene (detected in 18 of 38 samples); isopropylbenzene (detected in 17 of 38 samples); and 4-isopropyltoluene (detected in 13 of 38 samples). At least one of these five VOCs was detected in groundwater sampled from

every on-site monitoring well and piezometer with the exceptions of PZ-07 and RPMW-04S (which had no detected VOCs), RPMW-10I, RPMW-06I and RPMW-14D.

1,3,5-trimethylbenzene was detected in 13 of the 19 shallow groundwater samples collected from on-site monitoring wells and piezometers. Five shallow groundwater samples collected from on-site wells and piezometers exhibited 1,3,5-trimethylbenzene concentrations above 100 ug/l. Of these, the highest concentrations were found in samples collected from PZ-02 (500 ug/l), RPMW-08S (230 ug/l) and RPMW-13S (200 ug/l). This constituent was also detected in 9 intermediate depth, 4 deep and 3 very deep groundwater samples. The only intermediate-depth on-site groundwater sample exhibiting 1,3,5-trimethylbenzene concentration above 100 ug/l was RPMW-15I, with a reported concentration of 230 ug/l. Concentrations of 1,3,5-trimethylbenzene detected in samples obtained from deep on-site wells ranged between 2 ug/l (in RPSB-12D) and 60 ug/l (in RPMW-09D). Very deep on-site groundwater samples exhibited this constituent at concentrations ranging from 1 ug/l (RPSB-12D2) to 26 ug/l (RPSB-13D2).

1,2,4-trimethylbenzene was detected in 26 groundwater samples collected from on-site wells and piezometers. Fourteen of 19 shallow well samples exhibited 1,2,4-trimethylbenzene at concentrations ranging from 24 ug/l to 550 ug/l. Ten samples exceeded concentrations of 100 ug/l of 1,2,4-trimethylbenzene. Groundwater collected from monitoring well RPMW-13S exhibited a concentration of 1,2,4-trimethylbenzene of 550 ug/l. Similarly, groundwater samples RPMW-14S, RPMW-08S, PZ-04, and PZ-02 exhibited concentrations for 1,2,4-trimethyl-benzene of 300 ug/l, 290 ug/l, 280 ug/l and 260 ug/l, respectively. 1,2,4-trimethylbenzene was also detected in 6 of 11 intermediate-depth groundwater samples and exceeded a concentration of 100 ug/l in RPMW-15I where it was detected at a concentration of 540 ug/l. Three of the five deep groundwater samples exhibited detectable levels of 1,2,4-trimethylbenzene. Groundwater collected from RPMW-09D exhibited a concentration of 1,2,4-trimethylbenzene of 180 ug/l. Concentrations of 1,2,4-trimethylbenzene ranged from 2 ug/l to 75 ug/l in very deep groundwater samples, with the highest very deep concentration detected in groundwater sample RPMW-13D2.

Styrene was detected in 18 of the 38 on-site groundwater samples collected from monitoring wells and piezometers. Styrene exhibited the greatest range of concentration of any of the five most commonly detected VOCs. Styrene was detected in 10 of 19 shallow samples and exceeded a concentration of 100 ug/l in groundwater collected from MW-03, PZ-04, PZ-06, RPMW-10S and RPMW-12S. Styrene was detected in these samples at respective concentrations of 5,000 ug/l, 580 ug/l, 340 ug/l, 240 ug/l and 320 ug/l. Styrene was also detected in 4 of the 11 intermediate-depth groundwater samples. Styrene exceeded a concentration of 100 ug/l in two of these samples RPMW-15I and RPMW-14I, where it was detected at concentrations of 6,500 ug/l and 1000 ug/l, respectively. Two of the five deep groundwater samples and two of the three very deep samples contained styrene. Detected styrene concentrations in deep samples RPMW-09D and RPMW-13D were 270 ug/l and 470 ug/l, respectively. Very deep groundwater samples RPMW-09D2 and RPMW-13D2 exhibited styrene concentrations of 200 ug/l and 820 ug/l, respectively.

The fourth most commonly detected VOC in groundwater samples collected from on-site wells and piezometers was isopropylbenzene. Isopropylbenzene was detected in 9 of the 19 shallow groundwater samples, 5 of the 11 intermediate-depth samples, 1 of the 5 deep samples and 2 of the 3 very deep samples. The maximum isopropylbenzene concentration of 90 ug/l was detected in groundwater sample RPMW-14S. 4-isopropyltoluene was the fifth most commonly detected VOC, but was not detected in excess of 100 ug/l in any of the groundwater samples. The maximum 4-isopropyltoluene concentration of 38 ug/l was detected in groundwater sample RPMW-08S.

The only other VOC detected at a concentration above 100 ug/l in groundwater sampled from on-site wells and piezometers was methyl tert-butyl ether, which was present in groundwater sample PZ-01 at a concentration of 170 ug/l.

Semivolatile Organic Compounds

Analysis of the 38 groundwater samples collected for full NYSDEC TCL/SVOCs analysis indicated that five non-PAH SVOCs were most commonly detected in groundwater

samples obtained from on-site monitoring wells and piezometers. These five SVOCs included phenol, 2-methylphenol, 2,4-dimethylphenol, isophorone, and bis(2-ethylhexyl)phthalate.

Phenol was detected in seven of the 19 shallow groundwater samples collected from on-site monitoring wells and piezometers. All of these seven groundwater samples exhibited concentrations of phenol that were less than 40 ug/l. The highest concentrations of phenol were found in groundwater samples collected from RPMW-10S (34 ug/l), MW-A (21 ug/l), PZ-05 (15 ug/l), and PZ-01 (14 ug/l). Phenol was detected in only one intermediate-depth groundwater sample (RPMW-07I) at a concentration of 4 ug/l. In addition, phenol was detected in one deep groundwater sample, RPMW-12D, at a concentration of 1 ug/l, and one very deep groundwater sample, RPMW-09D2, at a concentration of 23 ug/l.

2-Methylphenol was detected in six of the 19 shallow groundwater samples collected from on-site monitoring wells and piezometers. All of these six groundwater samples exhibited concentrations of 2-methylphenol that were less than 100 ug/l. The highest concentrations of 2-methylphenol were found in groundwater samples collected from MW-03 (89 ug/l), RPMW-10S (46 ug/l), PZ-05 (15 ug/l), and PZ-03 (19 ug/l). 2-methylphenol was detected in intermediate-depth groundwater samples RPMW-08I and RPMW-15I at concentrations of 2 ug/l and 55 ug/l, respectively. 2-methylphenol was not detected above the CRDL for any of the 5 deep-depth or the three very deep depth groundwater samples.

2,4-Dimethylphenol was detected in five of the 19 shallow groundwater samples collected from on-site monitoring wells and piezometers. Four of these groundwater samples exhibited concentrations of 2,4-dimethylphenol that were less than 30 ug/l. The highest concentration of 2,4-dimethylphenol was found in a groundwater sample collected from MW-03 at a concentration of 120 ug/l. 2,4-dimethylphenol was detected in intermediate-depth groundwater samples RPMW-08I and RPMW-12I at concentrations of 4 ug/l and 5 ug/l, respectively. It should be noted that trace NAPL was observed with groundwater sample RPMW-12I. In addition, 2,4-dimethylphenol was detected in only one of the three very deep monitoring wells (RPMW-09D2) at a concentration of 65 ug/l. It should be noted that DNAPL

was observed in groundwater sample RPMW-09D2. 2,4-Dimethylphenol was not detected above the CRDL for any of the 5 deep-depth groundwater samples.

Isophorone was not detected above the CRDL in any of the 19 shallow or 11 intermediate-depth groundwater samples collected from on-site monitoring wells and piezometers. Isophorone was detected in a deep-depth monitoring well (RPMW-07D) at a concentration of 2 ug/l. The maximum isophorone concentration of 4 ug/l was detected in groundwater sample RPMW-12D.

Bis(2-ethylhexyl)phthalate was detected in one shallow groundwater sample collected from a piezometer (PZ-03) at a concentration of 1 ug/l. Bis(2-ethylhexyl)phthalate was detected in 10 of the 11 intermediate-depth groundwater samples at concentrations ranging from 1 ug/l to 15 ug/l. In addition, Bis(2-ethylhexyl)phthalate was detected in four of the five deep monitoring wells at concentrations ranging from 2 ug/l to 3 ug/l. Bis(2-ethylhexyl)phthalate was also detected in one of the three very deep groundwater samples (RPMW-12D2) at a concentration of 3 ug/l. The maximum bis(2-ethylhexyl)phthalate concentration of 15 ug/l was detected in groundwater sample RPMW-15I.

Metals and Cyanide

Metals analysis of groundwater samples collected from existing and newly installed monitoring wells located within the Rockaway Park site indicate that the majority of metals are generally within concentration ranges for upgradient or background water quality. Note that **Table 4-8** summarizes background/upgradient concentrations for the Rockaway Park site for several constituents, including NYSDEC TAL metals. Specific metals exceedances of the upgradient/background concentration ranges in groundwater are summarized in the following paragraphs. It should be noted that the turbidity readings of groundwater samples with metals results higher than the upgradient/background concentration ranges did not exceed 21 NTUs. Therefore, the concentration of these metals in groundwater is reflective of dissolved constituents and is not indicative of sediment that is usually associated with turbidity values in excess of 50 NTUs. In addition, the groundwater monitoring wells that exhibited metals in

TABLE 4-8

ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

UPGRADIENT GROUNDWATER QUALITY FOR THE ROCKAWAY PARK SITE

	WELL/PROBE, SCREEN INTERVAL AND SAMPLE DATE								
PARAMETER (UNITS)	RPGP-16S (11-15 ft.) 1/11/00	RPGP-16I (31-35 ft.) 1/11/00	RPGP-16D (51-55 ft.) 1/11/00	RPGP-16D2 (71-75 ft.) 1/11/00	RPGP-12S (6-10 ft.) 2/14/00	RPGP-12I (26-30 ft.) 2/14/00	RPGP-12D (46-50 ft.) 2/14/00	RPMW-16S (5-15 ft.) 3/10/00	RPMW-16I (35-45 ft.) 3/10/00
BTEX (ug/l)									
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1	ND	ND	ND	ND	ND	ND	ND	2
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	13
Xylene	2	ND	ND	ND	ND	ND	ND	ND	14
Total BTEX	3	0	0	0	0	0	0	0	29
Total PAHs (ug/l)	ND	ND	ND	ND	ND	ND	ND	ND	18
TAL Metals (ug/l)									
Aluminum	--	--	--	--	--	--	--	525	342
Antimony	--	--	--	--	--	--	--	ND	ND
Arsenic	--	--	--	--	--	--	--	ND	8.3
Barium	--	--	--	--	--	--	--	49.8	23.6
Berylium	--	--	--	--	--	--	--	ND	ND
Cadmium	--	--	--	--	--	--	--	ND	ND
Calcium	--	--	--	--	--	--	--	52,500	39,900
Chromium	--	--	--	--	--	--	--	ND	35
Cobalt	--	--	--	--	--	--	--	1.1	3.4
Copper	--	--	--	--	--	--	--	21.1	37.7
Iron	--	--	--	--	--	--	--	650	437
Lead	--	--	--	--	--	--	--	10.1	13.3
Magnesium	--	--	--	--	--	--	--	10,600	2,130
Manganese	--	--	--	--	--	--	--	103	10.9
Mercury	--	--	--	--	--	--	--	ND	ND
Nickel	--	--	--	--	--	--	--	3.4	5
Potassium	--	--	--	--	--	--	--	8,810	5,400
Selenium	--	--	--	--	--	--	--	ND	ND
Silver	--	--	--	--	--	--	--	ND	2.3
Sodium	--	--	--	--	--	--	--	54,400	18,600
Thallium	--	--	--	--	--	--	--	ND	ND
Vanadium	--	--	--	--	--	--	--	2.9	24.3
Zinc	--	--	--	--	--	--	--	24.8	43.9
Cyanide (total) (ug/l)	--	--	--	--	--	--	--	7.9	5.5

Notes:

--: Not analyzed for.

ND: Analyzed for but not detected.

excess of the upgradient/background concentration ranges are generally located throughout the entire Rockaway Park site.

Metal concentrations in groundwater samples that exceed background concentrations are summarized below:

Constituents	Concentration Range	Sample Exhibiting Maximum Concentration
Aluminum	Non-Detect to 1,760 ug/kg	PZ-02
Barium	6.3 to 157 ug/kg	PZ-05
Calcium	17,100 to 296,000 ug/kg	RPMW-12D2
Chromium	Non-Detect to 70.3 ug/kg	RPMW-13I
Copper	Non-Detect to 90.8 ug/kg	RPMW-13D
Iron	282 to 35,100 ug/kg	PZ-05
Magnesium	1,080 to 629,000 ug/kg	RPMW-09D2
Manganese	6.2 to 1,050 ug/kg	PZ-08
Nickel	Non-Detect to 20.9 ug/kg	PZ-02
Potassium	1,860 to 746,000 ug/kg	RPMW-13D2
Sodium	9,550 to 7,990,000 ug/kg	RPMW-09D2
Zinc	Non-Detect to 242 ug/kg	PZ-05

Twenty-two of the 38 on-site groundwater samples exhibited total cyanide concentrations greater than the CRDL of 20 ug/l. The maximum total cyanide concentration of 748 ug/l was observed in groundwater sample PZ-08 located in the central portion of the former Gas Works area. The next highest total cyanide concentrations of 562 ug/l, 441 ug/l and 425 ug/l were observed in groundwater samples RPMW-12S, PZ-01 and RPMW-04S, respectively. Groundwater monitoring well RPMW-12S is located in the southwest portion of the site, RPMW-04 is located in the northwest portion of the site, while monitoring well PZ-01 is located in the central portion of the site just north of the former Gas Works area. All samples exceeding the CRDL for total cyanide were observed in shallow samples except for groundwater samples RPMW-8I (180 ug/l), RPMW-12D2 (29.3 ug/l) and RPMW-15I (20.9 ug/l).

As previously discussed, total cyanide was detected in groundwater at a concentration of 425 ug/l in monitoring well RPMW-04S. Total cyanide was also detected in upgradient monitoring wells RPMW-12S, PZ-06, and PZ-07 at concentrations of 562 ug/l, 374 ug/l, and 370 ug/l, respectively. It is possible that the total cyanide concentration detected in monitoring well RPMW-04S is attributed to these upgradient wells. It should be noted that total cyanide was not detected above a concentration of 12.2 mg/kg in shallow subsurface soil samples collected from the western portion of the site which included the former Stacy Purifier and the former Centrifuge Building.

Concentrations of total cyanide in excess of the CRDL of 20 ug/l were generally limited to shallow groundwater wells. As previously discussed, the highest level of total cyanide of 748 ug/l in groundwater was observed in sample PZ-08. It is important to note that groundwater monitoring well PZ-08 is located in the middle of the former Gas Works area. In addition, as discussed in **Section 1.4**, early gas operations at the Rockaway Park Plant included both the coal carbonization and carbureted water gas processes. Typically, coal carbonization plants produced larger quantities of cyanide (Gas Research Institute 1996). Monitoring well PZ-08 is located in the middle of the original portion of the plant which likely involved coal carbonization. Therefore, it is not unreasonable to observe the highest concentration of total cyanide in groundwater within this portion of the Rockaway Park site. However, a maximum total cyanide concentration of 4,160 ug/l was detected in piezometer PZ-03 as part of the 1997 Phase I Investigation. Piezometer PZ-03 is located in the southeast portion of the site adjacent to the former Drip Oil Tanks. In general, the total cyanide concentrations detected in groundwater as part of the 1997 Phase I Investigation were higher than those detected during the current investigation. However, total cyanide was detected at concentrations of 346 ug/l and 36 ug/l in 1995 for piezometers PZ-01 and PZ-05, respectively. Whereas, total cyanide was detected at concentrations of 441 ug/l and 91.6 ug/l in 2000 for piezometers PZ-01 and PZ-05, respectively.

Free cyanide concentrations in the majority of groundwater samples collected from the Rockaway Park site were found to be below the CRDL of 20 ug/l. Exceptions to this observation were observed in two samples, with a maximum free cyanide concentration of 41.4 ug/l observed

in groundwater sample RPMW-12S. The next highest free cyanide concentration of 20.1 ug/l was observed in groundwater sample RPMW-13I.

Total Dissolved Solids and Chloride

Total dissolved solids (TDS) concentrations in all of the groundwater samples collected from the Rockaway Park site were found to be above the CRDL of 10 mg/l. The maximum TDS concentration of 28,000 mg/l was observed in groundwater samples RPMW-07D and RPMW-09D2. The next highest TDS concentration of 25,000 mg/l was observed in groundwater sample RPMW-09D. Groundwater monitoring well cluster RPMW-09 is located in the central portion of the site within the former Gas Works area. Similarly, chloride concentrations in all of the groundwater samples collected from the Rockaway Park site were found to be above the CRDL of 5 mg/l. The maximum chloride concentration of 19,000 mg/l was observed in groundwater sample RPMW-09D2. The next highest chloride concentration of 17,000 mg/l was observed in groundwater samples RPMW-07D and RPMW-13D2. Groundwater monitoring wells RPMW 07D and RPMW-13D2 are located in the north-central and southern portions of the site, respectively.

TDS and chloride concentrations in groundwater were shown to increase with depth. Measurements of salinity collected during well development were also shown to increase with increasing well screen depth. Furthermore, the average chloride concentration for groundwater collected from shallow, intermediate, deep and very deep wells were approximately 50 mg/l, 150 mg/l, 13,600 mg/l, and 16,670 mg/l, respectively. In addition, the average TDS concentrations for groundwater collected from shallow, intermediate, deep and very deep wells were approximately 460 mg/l, 410 mg/l, 23,400 mg/l, and 27,300 mg/l, respectively. It should be noted that the average chloride and TDS concentrations observed in the deepest monitoring wells are approaching the average chloride and TDS concentrations of seawater of 18,980 mg/l and 34,500 mg/l, respectively (Drever, J.I., 1988). Consequently, the chloride and TDS data indicates that the groundwater beneath the Rockaway Park site is brackish and is not suitable as a potable water supply.

4.2.4 Air

Four air samples were collected at the Rockaway Park site. One indoor air sample (RPAA-01) was collected within the three-story office building on the north side of the site. One indoor air sample (RPAA-02) was collected in the welding building on the north side of the site. One indoor air sample (RPAA-03) was collected in the substation control house on the northeast corner of the site. One outdoor ambient air sample (RPAA-04) was collected at the approximate center of the Rockaway Park site. All samples were analyzed for BTEX compounds in addition to naphthalene. **Table 26** summarizes the ambient air analytical results.

Only one of the four ambient air samples exhibited detectable levels of targeted compounds. Ambient air sample RPAA-01 exhibited m,p-xylene, o-xylene and toluene at concentrations of 3.8 ppbv, 1.3 ppbv and 2.8 ppbv, respectively. Naphthalene was not detected in ambient air sample RPAA-01.

4.2.5 Soil Vapor

One soil vapor probe sample was collected from the Rockaway Park site immediately north of the Gas Regulator Station as part of the Transmission Cable Investigation completed in November 2001. The sample was analyzed for BTEX compounds and naphthalene. **Table 27** summarizes the soil vapor results. BTEX was detected at a concentration of 66.5 ppbv. Naphthalene was not detected above the detection limit of 13 ppbv.

4.3 Off-Site Field Investigation

4.3.1 Surface Soil

In general, off-site surface soil samples consisted of light brown to brown fine to medium sand containing varying amounts of organic matter such as leaves and plant roots. No odors were observed in any of these samples.

BTEX and PAH results are summarized in **Tables 28** and **29** respectively. RCRA metals and total cyanide are summarized in **Table 30**, and total phenols are summarized in **Table 31**.

Dvirka and Bartilucci Consulting Engineers conducted a Bulkhead Investigation which was completed in April 2002. This investigation included analysis of 8 surface soil samples. The analytical results for BTEX, PAHs, RCRA metals and total cyanide and total phenols are included in **Tables 32, 33, 34** and **35**, respectively.

BTEX

BTEX compounds were detected in 8 of the 11 surface soil samples collected. The highest BTEX concentration of 0.019 mg/kg was observed in surface soil sample RPSS-20. The next highest BTEX concentration of 0.014 mg/kg was observed in surface soil sample RPSS-24. Samples RPSS-20 and RPSS-24 are located on the New York City-owned Bulkhead property.

PAHs

All 11 surface soil samples exhibited detectable concentrations of PAHs. The highest PAH concentrations of 91.24 mg/kg and 68.57 mg/kg were detected in surface soil samples RPSS-21 and RPSS-24, respectively. These samples are located on the New York City-owned Bulkhead property.

RCRA Metals and Cyanide

Metals analysis indicates that all RCRA metals were found to be generally within typical background concentrations for soil in the eastern United States. The ranges of RCRA metal and cyanide concentrations in the surface soil samples are summarized below:

Constituents	Concentration Range	Sample Exhibiting Maximum Concentration
Arsenic	0.61 to 12.2 mg/kg	RPSS-21

Constituents	Concentration Range	Sample Exhibiting Maximum Concentration
Barium	5 to 52.9 mg/kg	RPSS-01 & RPSS-24
Cadmium	0.17 to 0.98 mg/kg	RPSS-01
Chromium	2.4 to 11.2 mg/kg	RPSS-24
Lead	16.5 to 289 mg/kg	RPSS-17
Mercury	0.017 to 0.48 mg/kg	RPSS-01
Selenium	Non-Detect to 0.52	RPSS-17
Silver	Non-Detect to 1.5 mg/kg	RPSS-01
Cyanide	0.15 to 21.3 mg/kg	RPSS-17

Phenols

None of the off-site surface soil samples exhibited detectable levels of total phenols.

4.3.2 Subsurface Soil

BTEX and PAH results are summarized in **Tables 36** and **37**, respectively. RCRA metals and total cyanide are summarized on **Table 38**. Total phenols are summarized in **Table 39**. All parameters detected by the full NYSDEC TAL/TCL analysis which are not already presented in BTEX, PAHs and RCRA metals summary tables are summarized in **Table 40** for VOCs, **Table 41** for SVOCs and **Table 42** for TAL metals and **Table 43** for pesticides and PCBs.

Dvirka and Bartilucci Consulting Engineers conducted an investigation of the Underground Feeder Cable in support of the proposed substation for the Rockaway Park site in 2000. This investigation included analysis of 39 subsurface soil samples collected from 13 Geoprobe soil borings. The analytical results for soil samples analyzed for BTEX, PAHs, total cyanide/total phenols, TCLP RCRA organics and TCLP RCRA inorganics are included in **Tables 44, 45, 46, 47** and **48**, respectively.

Similarly, D&B completed a Transmission Cable Investigation in November 2001, which included analysis of 35 subsurface soil samples collected from 22 soil borings. The analytical results for BTEX, PAHs and total cyanide are included in **Tables 49, 50** and **51**.

Likewise, D&B completed a Bulkhead Investigation in April 2002, which included analysis of 23 subsurface soil samples collected from 10 soil borings. The analytical results for BTEX, PAHs, RCRA metals and total cyanide and total phenols are included in **Tables 52, 53, 54** and **55**.

BTEX

BTEX compounds were detected in 66 of the 127 off-site subsurface soil samples, with the highest total BTEX concentration of 2,790 mg/kg observed in soil sample RPSB-61 (10-12 feet) located approximately 80 feet east of the site along Beach 108th Street. The boring log for this sample indicated solvent-like odors as well as PID measurements of >2,000 ppm. The total BTEX concentrations at soil boring RPSB-61 appear to decrease with depth. Total BTEX was detected at a concentration of 0.008 mg/kg in soil sample RPSB-61 (55-57 feet). Field screening measurements for this sample indicated a PID measurement of 9.1 ppm. Soil sample RPSB-85 (24-25.5 feet) exhibited the next highest total BTEX concentration of 79 mg/kg. Soil boring RPSB-85 was advanced within the New York City-owned Bulkhead property to a depth of 50 feet bgs. A PID measurement of 97 ppm was detected where soil sample RPSB-85 (24-25.5 feet bgs) was collected. PID measurements below the 24-25.5 foot bgs interval of soil boring RPSB-85 ranged between 6 ppm and 104 ppm. With the exception of soil sample RPSB-84 (24-26 feet) which exhibited a concentration of 64 mg/kg, none of the remaining off-site subsurface soil samples exhibited total BTEX concentrations exceeding 0.532 mg/kg.

PAHs

PAHs were detected in 59 of the 127 subsurface soil samples collected from off-site locations. The highest total PAH concentration of 2,139.9 mg/kg, was reported for soil sample

RPSB-85 (36-38 feet). The most abundant constituent of the total PAH concentration in this sample was naphthalene (480 mg/kg) followed by phenanthrene (410 mg/kg) and 2-methylnaphthalene (290 mg/kg). Soil boring PRSB-85 is located within the New York City-owned Bulkhead property. Soil sample RPSB-84 (24-26 feet), also located within the Bulkhead property, exhibited the next highest total PAH concentration of 1,562.2 mg/kg. Naphthalene was also the most abundant PAH in this sample and was present at a concentration of 520 mg/kg. The next highest total PAH concentrations were reported for soil samples RPSB-114 (4-6 feet) and RPSB-03 (30-32 feet), which exhibited concentrations of 1,283.5 and 634.6 mg/kg, respectively. Soil boring RPSB-114 is located within the City-owned Bulkhead property, while soil boring RPSB-03 is located approximately 110 feet north of the former Service Building on the north side of Beach Channel Drive.

RCRA Metals and Cyanide

Metals analysis indicates that all RCRA metals were found to be generally within typical background concentrations for soil in the eastern United States. Total cyanide analysis indicates that in 102 of the 127 subsurface soil samples, cyanide was either not detected or was detected at concentrations below the CRDL of 1 mg/kg. The ranges of RCRA metal and cyanide concentrations in the surface soil samples are summarized below:

Constituents	Concentration Range	Sample Exhibiting Maximum Concentration
Arsenic	Non-Detect to 20.4 mg/kg	RPSB-113 (0-2 feet)
Barium	0.72 to 72.4 mg/kg	RPSB-02A (30-32 feet)
Cadmium	Non-Detect to 1.2 mg/kg	RPSB-03 (30-32 feet)
Chromium	0.37 to 29.9 mg/kg	RPSB-87 (21-23 feet)
Lead	Non-Detect to 206 mg/kg	RPSB-114 (4-6 feet)
Mercury	Non-Detect to 0.44 mg/kg	RPSB-03 (30-32 feet)
Selenium	Non-Detect to 7.1 mg/kg	RPSB-03 (30-32 feet)
Silver	Non-Detect to 2.2 mg/kg	RPSB-02A (30-32 feet)
Cyanide	Non-Detect to 12.8 mg/kg	RPSB-96 (4-6 feet)

TAL Metals

Metals analysis of the three subsurface soil samples analyzed for NYSDEC TAL metals, indicates all NYSDEC TAL metals to be generally within or below typical background concentrations for soil in the eastern United States. The ranges of TAL metal concentrations in the subsurface soil samples are summarized below:

TAL Metals	Concentration Range	Sample Exhibiting Maximum Concentration
Aluminum	212 to 428 mg/kg	RPSB-56 (5-7 feet)
Antimony	Non-Detect	---
Beryllium	Non-Detect	---
Calcium	81.1 to 36,000 mg/kg	RPSB-01 (5-7 feet)
Cobalt	0.35 to 1.2 mg/kg	RPSB-56 (5-7 feet)
Copper	1.1 to 3.3 mg/kg	RPSB-56 (5-7 feet)
Iron	666 to 1,520 mg/kg	RPSB-56 (5-7 feet)
Magnesium	75.3 to 231 mg/kg	RPSB-01 (5-7 feet)
Manganese	21 to 36 mg/kg	RPSB-56 (5-7 feet)
Nickel	0.6 to 1.3 mg/kg	RPSB-56 (5-7 feet)
Potassium	76.4 to 103 mg/kg	RPSB-01 (5-7 feet)
Sodium	44.4 to 483 mg/kg	RPSB-01 (5-7 feet)
Thallium	Non-Detect	---
Vanadium	1.3 to 1.6 mg/kg	RPSB-56 (5-7 feet)
Zinc	3.2 to 26 mg/kg	RPSB-56 (5-7 feet)

Total Phenols

Total phenols analysis by USEPA Method 9065 did not exhibit any total phenols concentrations above the CRDL in all off-site subsurface soil samples.

Volatile Organic Compounds

Subsurface soil samples RPSB-01 (5-7 feet), RPSB-56 (5-7 feet) and RPSB-62 (5-7 feet) were also analyzed for the full NYSDEC TCL VOC parameters in addition to BTEX. This analysis identified acetone in soil samples RPSB-01 (5-7 feet), RPSB-56 (5-7 feet) and RPSB-62 (5-7 feet) at concentrations of 0.004, 0.016 and 0.004 mg/kg, respectively. Methylene chloride was detected in soil samples RPSB-56 (5-7 feet) and RPSB-62 (5-7 feet) at concentrations of 0.015 and 0.003 mg/kg, respectively. No other VOCs were detected in these samples. It should be noted that both of these compounds are common laboratory chemicals.

Semivolatile Organic Compounds

Subsurface soil samples RPSB-01 (5-7 feet), RPSB-56 (5-7 feet) and RPSB-62 (5-7 feet) were analyzed for the full NYSDEC TCL SVOC parameters in addition to PAH by USEPA Method 8270. This analysis identified carbazole in sample RPSB-56 (5-7 feet) at a concentration of 9.0 mg/kg. No other SVOCs were detected in these samples.

Pesticides

Pesticide analysis was conducted for two off-site subsurface soil samples; RPSB-01 (5-7 feet) and RPSB-62 (5-7 feet). Pesticides were not detected above the CRDL in soil sample RPSB-01 (5-7). Pesticides present in sample RPSB-62 (5-7 feet) included beta-BHC at a concentration of 0.007 mg/kg, and delta-BHC at a concentration of 0.0071 mg/kg.

PCBs

Off-site subsurface soil samples RPSB-01 (5-7 feet) and RPSB-62 (5-7 feet) did not exhibit detectable concentrations of PCBs.

TCLP RCRA Organics and Inorganics Analysis

Concentrations of targeted TCLP RCRA organics were not detected in any of the 13 soil samples collected as part of the Underground Feeder Cable Investigation. However soil sample RPSB-80 (6-8 feet) exhibited a benzene concentration of 17 ug/l. At least one of the eight targeted TCLP RCRA inorganic constituents were detected in all 13 soil samples. Barium, was detected in all the samples ranging from a concentration of 9.6 ug/l to 129 ug/l. Lead and selenium were detected in 9 of the 13 and 8 of the 13 soil samples, respectively. Cadmium and mercury were not detected above the CRDL in any of the collected samples.

4.3.3 Groundwater

Off-site groundwater quality was characterized through the collection and analysis of groundwater samples collected from groundwater probes and newly installed groundwater monitoring well clusters. Total BTEX and total PAH results are presented in **Tables 56** and **57**, respectively. VOC and SVOC results are presented in **Table 58** and **Table 59**, respectively. Metals and total/free cyanide results are presented in **Table 60** and chlorides and total dissolved solids are presented in **Table 61**.

A total of 16 groundwater probes were advanced and sampled as part of the off-site field investigation. A total of 53 groundwater samples were collected from groundwater probes in January and February of 2000 and analyzed for BTEX and PAHs. A portion of the groundwater probe samples were also analyzed for VOCs and SVOCs. BTEX and PAH results for groundwater probe samples are presented in **Table 62** and **Table 63**, respectively. VOCs and SVOCs results for groundwater probe samples are presented in **Tables 64** and **65**, respectively.

D&B completed a Transmission Cable Investigation in November 2001, which included analysis of three groundwater probe samples collected from three groundwater probes. The analytical results for BTEX and PAHs are included in **Tables 66** and **67**, respectively.

Similarly, D&B completed a Bulkhead Investigation in April 2002, which included analysis of 22 groundwater probe samples collected from 5 groundwater probes. The analytical results for BTEX and PAHs are included in **Tables 68** and **69**, respectively.

BTEX

Of the 16 groundwater samples collected from newly installed monitoring wells, 10 samples contained detectable levels of total BTEX. The highest total BTEX concentration of 8,200 ug/l was observed in groundwater sample RPMW-17S. Well cluster RPMW-17 is located approximately 80 feet east of the site along Beach 108th Street. The BTEX concentrations in samples collected at this well cluster decrease with depth as observed in monitoring wells RPMW-17I (378 ug/l) and RPMW-17D (111 ug/l). The next highest BTEX concentrations of 6,930 ug/l and 2,598 ug/l were observed in samples RPMW-02I and RPMW-02D, respectively. Well cluster RPMW-02 is located downgradient of the site, approximately 80 feet north of the northern site boundary on the north side of Beach Channel Drive. It is interesting to note that groundwater sample RPMW-02S only exhibited a BTEX concentration of 7 ug/l. The two remaining BTEX detections in off-site monitoring well samples were 16 ug/l in RPMW-03I and 29 ug/l in RPMW-16I. BTEX was not detected in the shallow groundwater samples for both of these clusters and BTEX was not detected in the deep groundwater sample collected from monitoring well RPMW-03D. Monitoring well RPMW-03I is located downgradient of the site, approximately 100 feet north of the existing substation, while RPMW-16I is located upgradient of the site, approximately 180 feet south of the former Gas Works area.

Twenty-seven out of 78 groundwater probe samples collected from off-site locations exhibited detectable levels of BTEX compounds. The highest BTEX concentration was detected in groundwater sample RPGP-06 (6-10 feet) with a total BTEX concentration of 18,600 ug/l. RPGP-06 is located side-gradient to the site on the east side of Beach 108th Street, approximately 150 feet east of the former Drip Oil Tanks. The next highest total BTEX concentration of 12,800 ug/l was observed with groundwater sample RPGP-17 (6-10 feet). RPGP-17 is also located side-gradient to the site on the west side of Beach 108th Street approximately 50 feet east of the former Drip Tank. BTEX concentrations at groundwater probe

location RPGP-06 appear to decrease with depth as BTEX was detected in samples RPGP-06 (26-30 feet), and RPGP-06 (46-50 feet) at concentrations of 624 ug/l and 1 ug/l, respectively. BTEX was also detected in groundwater probe samples RPGP-05 (26-30 feet), RPGP-05 (6-10 feet) and RPGP-03 (26-30 feet) at concentrations of 10,180 ug/l, 3,090 ug/l, 1,118 ug/l, respectively.

Off-site groundwater data indicates that BTEX compounds were detected in groundwater to the north of the site and that these compounds are likely migrating in the direction of the Jamaica Bay bulkhead area. BTEX concentrations are also present approximately 100 feet east of the site boundary. BTEX concentrations were not observed in groundwater samples collected north of the northwest corner of the site. This data is generally consistent with on-site groundwater BTEX data which indicates that this portion of the site is generally free of total BTEX concentrations above 16 ug/l. In general, BTEX was not observed in the groundwater samples collected upgradient/south of the site, with the following exceptions:

- RPMW-16I (35-45 feet), collected in a vacant lot upgradient and south of the site, exhibited a BTEX concentration of 29 ug/l;
- RPGP-10 (86-90 feet), collected upgradient and southwest of the site on Rockaway Freeway, exhibited a BTEX concentration of 1 ug/l;
- RPGP-16 (11-15 feet), collected upgradient and southwest of the site in a landscaping contractor lot, exhibited a BTEX concentration of 3 ug/l; and
- RPGP-15 (86-90 feet), collected upgradient in a vacant lot south of the site, exhibited a BTEX concentration of 1 ug/l.

As discussed in **Section 1.6**, the Environmental Database Search did not identify any off-site sources of chemical constituents that might account for the presence of BTEX compounds in upgradient groundwater described above.

PAHs

Twelve of the 16 groundwater samples collected from newly installed off-site monitoring wells exhibited detectable concentrations of PAHs constituents. Five of these samples exhibited

total PAHs concentrations greater than 100 ug/l. The highest concentration of total PAHs was 7,944 ug/l, detected in sample RPMW-02I which was collected downgradient and north of the site along Beach Channel Drive and west of the former tunnel which crossed beneath Beach Channel Drive. Groundwater samples RPMW-11I and RPMW-02D exhibited the second and third greatest total PAH concentrations of 5,407 ug/l and 3,760 ug/l, respectively. Monitoring well cluster RPMW-11 is also located downgradient of the site along Beach Channel Drive approximately 200 feet west of well cluster RPMW-02. The next two highest PAH concentrations were 541 ug/l, detected in sample RPMW-02S, and 231 ug/l which was detected in sample RPMW-17S.

Thirty-one out of 78 off-site groundwater probe samples exhibited detectable concentrations of PAH constituents. Groundwater probe sample RPGP-23 (22-26 feet) exhibited the highest total PAHs concentration of 2,236 ug/l. Groundwater probe sample RPGP-23 is located downgradient and approximately 100 feet north of the site within the Bulkhead property. The next highest total PAHs concentration of 2,079 ug/l was observed in groundwater probe sample RPGP-17 (6-10 feet). Sample RPGP-20 (6-10 feet) exhibited the third highest total PAHs concentration of 1,815 ug/l. Groundwater probe sample RPGP-17 is located east of the site along Beach 108th Street while groundwater probe sample RPGP-20 is located within the Bulkhead property.

Off-site groundwater data indicate that PAHs compounds are present in all monitoring well clusters and at some of the groundwater probe locations. Consistent with BTEX groundwater data, total PAHs data revealed that the highest off-site PAHs concentrations in groundwater exists north-northeast (downgradient) of the site. In addition, PAHs concentrations east (side-gradient) of the site were observed on the east side of Beach 108th Street (approximately 100 to 110 feet east of the site boundary). Also consistent with BTEX groundwater data, little or no PAH constituents were observed in groundwater samples collected northwest, west or south of the site.

Using on-site and off-site groundwater quality data from this investigation, three maps were developed summarizing total BTEX and total PAH concentrations observed in groundwater

samples. Maps depicting total BTEX/PAH concentrations in shallow, intermediate and deep groundwater are presented on **Drawings 4C, 4D** and **4E**, respectively. Both groundwater probe and monitoring well data were used to prepare these maps. The shallow interval is based on data from the water table to approximately 16 feet bgs, the intermediate interval includes data from approximately 26 to 45 feet bgs and the deep interval is approximately 65 to 75 feet bgs. The three maps depict the horizontal and vertical distribution of BTEX and PAHs in groundwater. Based on the maps, the following observations are made:

1. The distribution of BTEX and PAHs in groundwater is generally consistent with observed soil concentrations and the presence of NAPL. The highest concentrations of these constituents are observed in the vicinity of the former Gas Works area, the former Oxide Enclosure, and the former 2-Million Cubic Foot Gas Holder. In general, on-site groundwater concentrations of BTEX and PAHs decrease with increasing depth at most well clusters. An exception to this general trend was observed at well cluster RPMW-09, centrally located in the former Gas Works area, where BTEX and PAHs increased in concentration from the intermediate to the deep monitoring wells.

2. Shallow BTEX groundwater data, depicted on **Drawing 4C**, indicates BTEX constituents within the western portion of the site as shown in RPMW-08S and PZ-06. However, the intermediate BTEX data depicted on **Drawing 4D**, indicates that BTEX compounds within the western portion of the site are limited to the shallow interval. It should also be noted that shallow and intermediate BTEX concentrations in soil, shown on **Drawings 4A** and **4B**, respectively, do not indicate BTEX concentrations greater that 100 mg/kg within the western portion of the site. In addition, groundwater data from groundwater probes located off-site and upgradient along the western property boundary (RPGP-10 and RPGP-11) do not indicate the presence of BTEX. Therefore, the vertical and horizontal extent of the shallow depth BTEX compounds within the western portion of the site appears to be localized.

3. Off-site migration of BTEX and PAHs is occurring in shallow groundwater to the east of the site (see **Drawing 4C**). This is supported by data from monitoring well RPMW-17S and groundwater probes RPGP-05, RPGP-06 and RPGP-17. Off-site migration of PAHs and BTEX appears to be occurring in shallow groundwater to the north of the site, as indicated by data from monitoring well RPMW-02S and groundwater probes RPGP-20, RPGP-22 and RPGP-23. However, total BTEX was detected at a concentration of only 7 ug/l in well RPMW-02S.

4. Off-site migration of BTEX and PAHs is occurring in intermediate groundwater to the north and east of the site (see **Drawing 4D**). The migration to the north is supported by data from monitoring wells RPMW-11I, RPMW-02I and groundwater probes RPGP-03, RPGP-20 and RPGP-23. Similarly, migration of BTEX and PAHs to the east is supported by data from monitoring well RPMW-17I and groundwater probes RPGP-05

and RPGP-06. However, total PAHs were only detected at concentrations of 14 ug/l and 83 ug/l in groundwater collected from RPMW-17I and RPGP-06, respectively.

5. Based on groundwater data for off-site groundwater samples, BTEX and PAHs appear to be migrating off-site to the north in the deep groundwater zone (see **Drawing 4E**). This is supported by data collected from monitoring well RPMW-02D. In addition, BTEX constituents appear to be migrating off-site to the east in the deep groundwater zone, as indicated by data from monitoring well RPMW-17D.

6. Based on **Drawings 4C** through **4E**, groundwater samples collected upgradient or south of the site do not exhibit BTEX or PAH concentrations greater than 30 ug/l. This observation is generally consistent with off-site soil quality with the following exceptions. Total BTEX was detected in shallow soil at a concentration of 136.2 mg/kg from soil boring RPSB-80 located approximately 45 feet south of the site along the south side of Rockaway Freeway. In addition, PAHs were detected in shallow soil at a concentration of 420.4 mg/kg from soil boring RPSB-56 located approximately 45 feet southwest of the site along the south side of Rockaway Freeway.

7. BTEX and PAHs concentrations in intermediate groundwater are generally higher than the shallow depth for sample locations (RPMW-02 and RPGP-03) along Beach Channel Drive. This observation, combined with the fact that groundwater to the south of the site is relatively free of BTEX and PAHs, supports the conclusion presented in **Section 3.4** that the overall groundwater flow direction is to the north toward Jamaica Bay. It should be noted that downgradient monitoring wells RPMW-11S and RPMW-11D exhibited trace amounts of LNAPL in March 2000. However, groundwater measurements conducted in November 2001 did not indicate any measurable amounts of LNAPL in these wells.

Volatile Organic Compounds

Sixteen off-site groundwater monitoring well samples were analyzed for VOCs. Samples were analyzed for 61 compounds, exclusive of the BTEX compounds discussed above. The five most commonly detected VOCs were 1,2,4-trimethylbenzene (occurring in eight samples), isopropylbenzene (occurring in eight samples), 1,3,5-trimethylbenzene (occurring in five samples), and acetone and chloroform (occurring in four samples each). Other VOCs detected in three or fewer samples, included bromodichloromethane, 4-isopropyltoluene, styrene and n-propylbenzene. Only two VOCs, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene, were detected at concentrations exceeding 100 ug/l.

The highest concentration of 1,2,4-trimethylbenzene was 250 ug/l, detected in groundwater sample RPMW-02I, located north of the site near the Jamaica Bay bulkhead. Sample RPMW-11I, collected approximately 200 feet west of RPMW-02I near the bulkhead, exhibited a concentration of 170 ug/l for 1,2,4-trimethylbenzene. 1,2,4-trimethylbenzene was also detected in groundwater samples RPMW-17S and RPMW-02D at concentrations of 140 ug/l and 84 ug/l, respectively.

The highest concentration of isopropylbenzene was detected in groundwater sample RPMW-11I at a concentration of 85 ug/l. Isopropylbenzene was also detected in samples RPMW-17S, RPMW-02D and RPMW-03S at concentrations of 39 ug/l, 22 ug/l and 10 ug/l, respectively.

1,3,5-trimethylbenzene was detected in groundwater well samples RPMW-02I, RPMW-17S, RPMW-02D and RPMW-11D at concentrations of 110 ug/l, 35 ug/l, 34 ug/l, and 26 ug/l, respectively. This compound was detected in one other sample, RPMW-02S, at a concentration of 4 ug/l.

Of the remaining five most commonly detected VOCs, acetone ranged in concentration from 10 ug/l to 84 ug/l and chloroform ranged in concentration from 16 ug/l to 29 ug/l.

The only other constituents that equaled or exceeded 10 ug/l were n-propylbenzene, which was detected at a concentration 24 ug/l in sample RPMW-11I, and styrene, which was detected at concentrations of 10 ug/l and 9 ug/l in samples RPMW-11I and RPMW-16I, respectively.

Because of similarities in concentrations of acetone, chloroform and styrene in samples collected from off-site groundwater monitoring wells located upgradient, downgradient and side-gradient to the site, it is likely that the presence of these VOCs is representative of background water quality in the vicinity of the Rockaway Park site.

No VOCs were detected in samples collected from monitoring wells RPMW-01S and RPMW-01I (located along Beach Channel Drive north of the northwestern portion of the site) or in the sample collected from well RPMW-16S (located south of the site).

VOCs were detected in the three groundwater samples collected from the shallow, intermediate and deep zones of groundwater probe RPGP-06. This groundwater probe is located approximately 50 feet north of the northeastern corner of the intersection of Beach 108th Street and Rockaway Freeway. 1,2,4-trimethylbenzene was detected at a concentration of 330 ug/l in sample RPGP-06 (6-10 feet) and at 22 ug/l in sample RPGP-06 (26-30 feet). Methyl tert-butyl ether was detected in the intermediate and deep groundwater probe samples, RPGP-06 (26-30 feet) and RPGP-06 (46-50 feet) at concentrations of 34 ug/l and 9 ug/l, respectively. The remaining three detected VOCs, isopropylbenzene, n-propylbenzene and 1,3,5-trimethylbenzene, were only detected in intermediate sample RPGP-06 (26-30 feet), where they exhibited concentrations of 3 ug/l, 3 ug/l and 10 ug/l, respectively.

Semivolatile Organic Compounds

Sixteen groundwater samples were collected for the full NYSDEC TCL/SVOCs analysis from newly installed off-site monitoring wells. Ten groundwater samples contained detectable concentrations of eight non-polycyclic aromatic hydrocarbon semivolatile organic compounds (non-PAH SVOCs). The most common non-PAH SVOC constituent, occurring in 8 samples, was bis(2-ethylhexyl)phthalate. This compound was detected at concentrations ranging from 1 ug/l (samples RPMW-16I, RPMW-17I and RPMW-11D) to 12 ug/l (sample RPMW-17D). Carbazole was detected at concentrations ranging from 10 ug/l (sample RPMW-02D) to 27 ug/l (sample RPMW-02I). In addition, Di-n-butylphthalate was detected in groundwater samples RPMW-02D and RPMW-03D at respective concentrations of 10 ug/l and 12 ug/l. Diethylphthalate and 2,4 dimethylphenol were detected in groundwater sample RPMW-17D at concentrations of 2 ug/l and 8 ug/l, respectively. Also detected in sample RPMW-02D were 2-methylphenol and 4-methylphenol, which were each detected at concentrations of 1 ug/l. The highest total non-PAH SVOC concentrations were detected in monitoring well groundwater

samples RPMW-02D, RPMW-02I, RPMW 17D and RPMW-03D, where these constituents totaled 29 ug/l, 27 ug/l, 22 ug/l and 21 ug/l, respectively.

Three off-site groundwater probe samples, RPGP-06 (6-10 feet), RPGP-06 (26-30 feet) and RPGP-06 (46-50 feet) were analyzed for the full NYSDEC TCL/SVOCs analysis. These samples were collected from shallow, intermediate and deep groundwater zones at a location approximately 50 feet north of the northeast corner of the intersection of Beach 108th Street and Rockaway Freeway. The only non-PAH SVOC constituent detected in the probe samples was bis(2-ethylhexylphthalate). This was detected at a concentration of 9 ug/l in groundwater probe sample, RPGP-06 (26-30 feet).

Metals and Cyanide

Metals analysis of groundwater samples collected from newly installed monitoring wells located off-site of the Rockaway Park site indicate that the majority of RCRA listed metals are generally within concentration ranges that would be considered typical of ambient groundwater quality given the commercial and industrial land use within the area. However, several anomalies to this general observation have been identified. The ranges of TAL metal concentrations in the off-site groundwater samples are summarized below:

TAL Metals	Concentration Range	Sample Exhibiting Maximum Concentration
Aluminum	Non-Detect to 3,590 ug/l	RPMW-11D
Antimony	Non-Detect to 7 ug/l	RPMW-01S
Arsenic	Non-Detect to 16.2 ug/l	RPMW-03S
Barium	10.4 to 150 ug/l	RPMW-17I
Beryllium	Non-Detect	---
Cadmium	Non-Detect to 0.47 ug/l	RPMW-03S
Calcium	26,100 to 1,650,000 ug/l	RPMW-11D
Chromium	Non-Detect to 37.6 ug/l	RPMW-17I
Cobalt	Non-Detect to 6.6 ug/l	RPMW-01S

TAL Metals	Concentration Range	Sample Exhibiting Maximum Concentration
Copper	Non-Detect to 109 ug/l	RPMW-17D
Iron	20.4 to 28.5 ug/l	RPMW-11S
Lead	Non-Detect to 52.4 ug/l	RPMW-17D
Magnesium	2,130 to 541,000 ug/l	RPMW-03I
Manganese	2.3 to 664 ug/l	RPMW-02S
Mercury	Non-Detect	---
Nickel	Non-Detect to 23 ug/l	RPMW-17D
Potassium	5,400 to 792,000 ug/l	RPMW-11D
Selenium	Non-Detect to 6.3 ug/l	RPMW-01S
Silver	Non-Detect to 19.5 ug/l	RPMW-11D
Sodium	18,600 to 9,080,000 ug/l	RPMW-01S
Thallium	Non-Detect to 15.6 ug/l	RPMW-01S
Vanadium	Non-Detect to 384 ug/l	RPMW-01S
Zinc	Non-Detect to 194 ug/l	RPMW-17D

In general, metals forming electrolytes common to seawater (i.e., sodium, potassium, calcium and magnesium) were detected at high concentrations in most wells, with concentrations generally highest in samples collected closest to Jamaica Bay. Calcium and magnesium also occur biogenically and may be enriched in groundwater samples obtained from aquifer depths rich in shell deposits.

Total cyanide was detected at concentrations of 7.9 ug/l in background sample RPMW-16S and at 5.5 ug/l in sample RPMW-16I. The highest concentration of total cyanide of 688 ug/l was detected in sample RPMW-01I, located approximately 80 feet north of the site along the north side of Beach Channel Drive. The next highest concentration of total cyanide of 537 ug/l was detected in sample RPMW-011S, which is also located along the north side of Beach Channel Drive. Total cyanide concentrations were slightly above background concentrations in samples RPMW-03I (8.3 ug/l) and RPMW-17 I (8.9 ug/l). Total cyanide was also detected above background concentrations in four other samples as follows: RPMW-02S (176 ug/l), RPMW-03S (159 ug/l), RPMW-17S (30.7 ug/l) and RPMW-02D (75 ug/l). In

general, the highest levels of total cyanide in off-site groundwater were observed in monitoring wells located downgradient or north of the Rockaway Park site.

Free cyanide was not detected in background samples but was detected in shallow, intermediate and deep samples collected at RPMW-11 as follows: RPMW-11S (7.9 ug/l), RPMW-11I (4.6 ug/l) and RPMW-11D (182 ug/l).

Total Dissolved Solids and Chloride

Total dissolved solids (TDS) concentrations in all off-site groundwater samples collected in the vicinity of the Rockaway Park site were found to be above the CRDL of 10 mg/l. The maximum TDS concentration of 29,000 mg/l was detected in sample RPMW-11D and the lowest concentration of TDS, 230 mg/l, was detected in sample RPMW-16S. The next lowest TDS concentration of 440 mg/l was detected in samples RPMW-16S and RPMW-17D.

Chloride concentrations were similarly detected above the CRDL of 5 mg/l in all off-site groundwater samples. The two highest chloride concentrations were 17,000 and 15,000 mg/l which were detected in samples RPMW-01S and RPMW-11D, respectively. These high concentrations of chloride are consistent with the high sodium levels detected in the same wells and confirms the expected mixing of saltwater and freshwater in near shore groundwater.

4.3.4 Soil Vapor

A total of 12 soil vapor probe samples were completed around the perimeter of the Rockaway Park site in order to assess the likelihood of dissolved BTEX and naphthalene volatilizing from groundwater and migrating into soil gas. All samples were analyzed for BTEX compounds and naphthalene. **Table 70** summarizes the results of this analysis.

Dvirka and Bartilucci Consulting Engineers conducted an investigation of the Underground Feeder Cable in support of the proposed substation for the Rockaway Park site in 2000. This investigation included the additional analysis of 8 soil vapor samples collected from

13 Geoprobe soil borings located along Rockaway Freeway. The analytical results for soil vapor samples analyzed for BTEX and naphthalene are included in **Table 71**.

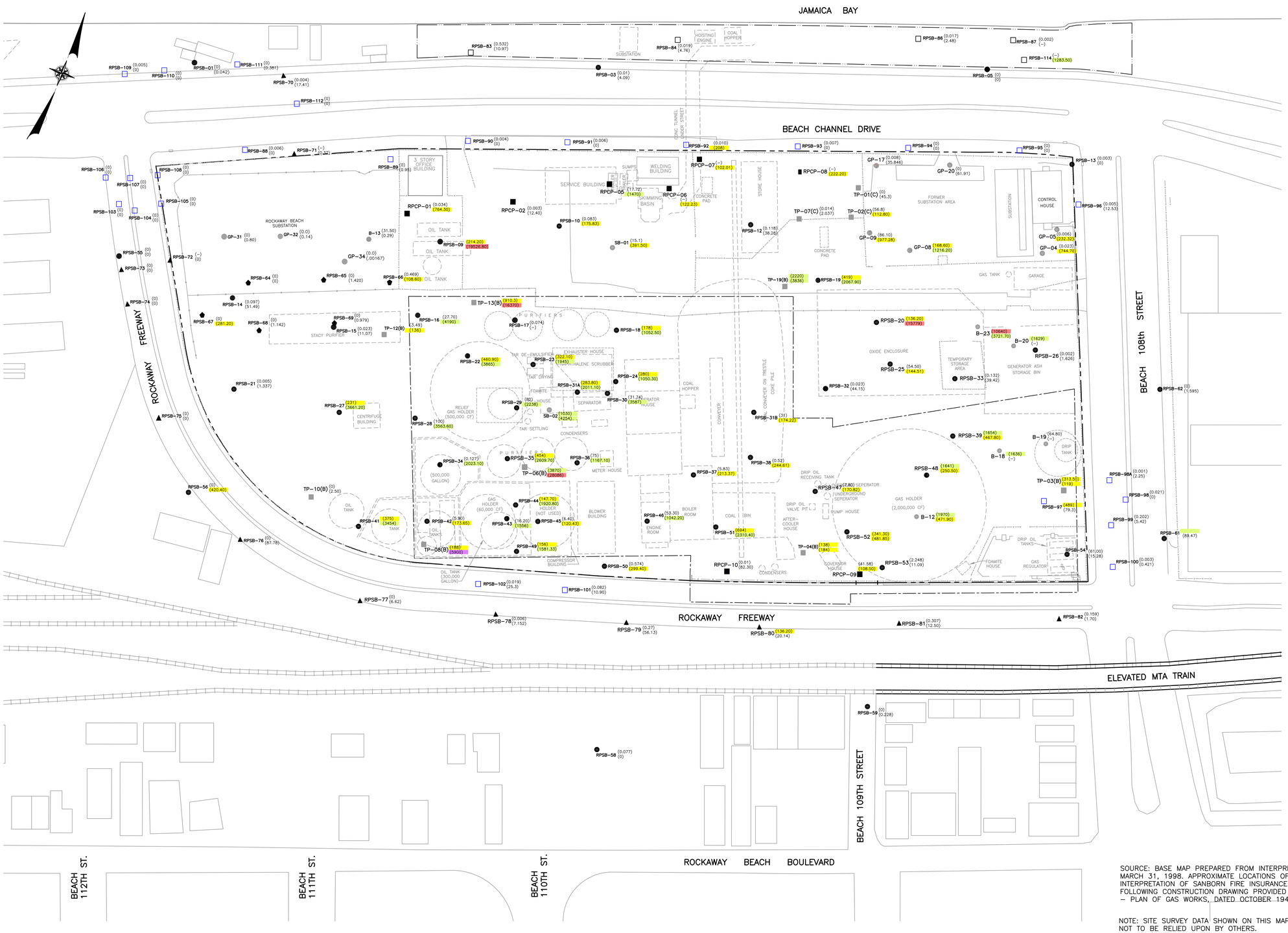
In addition, D&B completed a Transmission Cable Investigation in November 2001, which included the collection of three soil vapor probe samples. The three soil probe samples were collected along the south side of Beach Channel Drive. The analytical results for soil vapor samples analyzed for BTEX and naphthalene are included in **Table 72**.

Analysis of the soil gas samples identified toluene at concentrations above detection limits within all of the samples. The maximum concentration for toluene of 470 ppbv was detected in sample RPSV-03, which was located along the north side of Beach Channel Drive, approximately 90 feet north of the substation. The next highest concentration of toluene was 440 ppbv was detected in sample RPSV-07, followed by a concentration of 190 ppbv that was detected in sample RPSV-06. Soil vapor sample RPSV-07 was collected southeast of the site along the median of Beach 108th Street. Other compounds detected in these samples include m,p-xylene (detected in 8 of 12 samples), o-xylene and benzene (both detected in 4 of 12 samples), and ethyl benzene (detected in 2 of 12 samples). Naphthalene was not detected above the CRDL in all 12 samples.

The presence of toluene within soil vapor samples RPSV-03 and RPSV-06 is generally consistent with BTEX concentrations detected from groundwater probes RPGP-03 and RPGP-06 within the area of soil vapor probes RPSV-03 and RPSV-06. However, RPSV-07 exhibited a toluene concentration of 440 ppbv, but groundwater data associated with RPGP-08 indicated groundwater within the area of soil probe RPSV-07 to be free of BTEX compounds.

Soil vapor samples collected and analyzed as part of the Underground Feeder Cable Investigation exhibited detectable concentrations of total BTEX ranging from 1.5 ppbv to 342.8 ppbv at locations RPSV-17 and RPSV-20, respectively. Toluene was detected at all sample locations ranging from 1.4 ppbv to 98 ppbv at locations RPSV-18 to RPSV-20, respectively. Naphthalene was not detected in any of the 9 soil vapor samples collected.

Soil vapor samples collected and analyzed as part of the Transmission Cable Investigation exhibited detectable concentrations of total BTEX ranging from 7.5 ppbv to 25.6 ppbv at locations RPSV-23 and RPSV-22, respectively. Naphthalene was not detected in any of the three soil vapor samples collected.



LEGEND:

RPCP-01 (0.034) (764.30)	■ TEST PIT AND SOIL SAMPLE LOCATION FROM CUT AND PLUG IRM PROGRAM SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg
RPSB-01 (0) (0.042)	● SOIL BORING AND SOIL SAMPLE LOCATION FROM THE ROCKAWAY PARK SITE INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg
RPSB-70 (0.004) (17.41)	▲ SOIL BORING AND SOIL SAMPLE LOCATION FROM THE ROCKAWAY PARK FEEDER CABLE INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg
RPSB-66 (0.469) (108.6)	⬟ SOIL BORING AND SOIL SAMPLE LOCATION FROM THE ROCKAWAY PARK SUBSTATION AND DELISTING PETITION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg
TP-06B (3870) (–)	■ TEST PIT AND SOIL SAMPLE LOCATION FROM GEI PHASE I INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg
SB-01 (–) (391.50)	● SOIL SAMPLE LOCATION FROM GEI PHASE I INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg
TP-02C (–) (112.80)	■ TEST PIT AND SOIL SAMPLE LOCATION FROM GEI INTERIM REMEDIAL MEASURE STUDY SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg
GP-04 (0) (0.042)	● SOIL SAMPLE LOCATION FROM GEI INTERIM REMEDIAL MEASURE STUDY SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg
B-13 (0) (0.042)	
RPSB-88 (0.006) (0)	□ SOIL BORING AND SOIL SAMPLE LOCATION FROM THE TRANSMISION CABLE INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg
RPSB-83 (0.532) (10.97)	□ SOIL BORING AND SOIL SAMPLE LOCATION FROM THE BULKHEAD INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg

- > 100 mg/kg Total BTEX/PAH
- > 1,000 mg/kg Total BTEX/PAH
- > 5,000 mg/kg Total BTEX/PAH
- > 10,000 mg/kg Total BTEX/PAH

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
– PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

NOTE: SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS.

0 50
SCALE IN FEET

NO.	DATE	REVISION	INT.

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DRAWN BY: L.V.G.
DESIGNED BY: XXXX
CHECKED BY: XXXX

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

ROCKAWAY PARK
FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

TOTAL BTEX/PAH
IN SHALLOW SOIL
(2 TO 12 FEET)

PROJECT NO. 1620–C
DATE: OCTOBER 2002
SCALE: AS SHOWN
DRAWING NO. 4A

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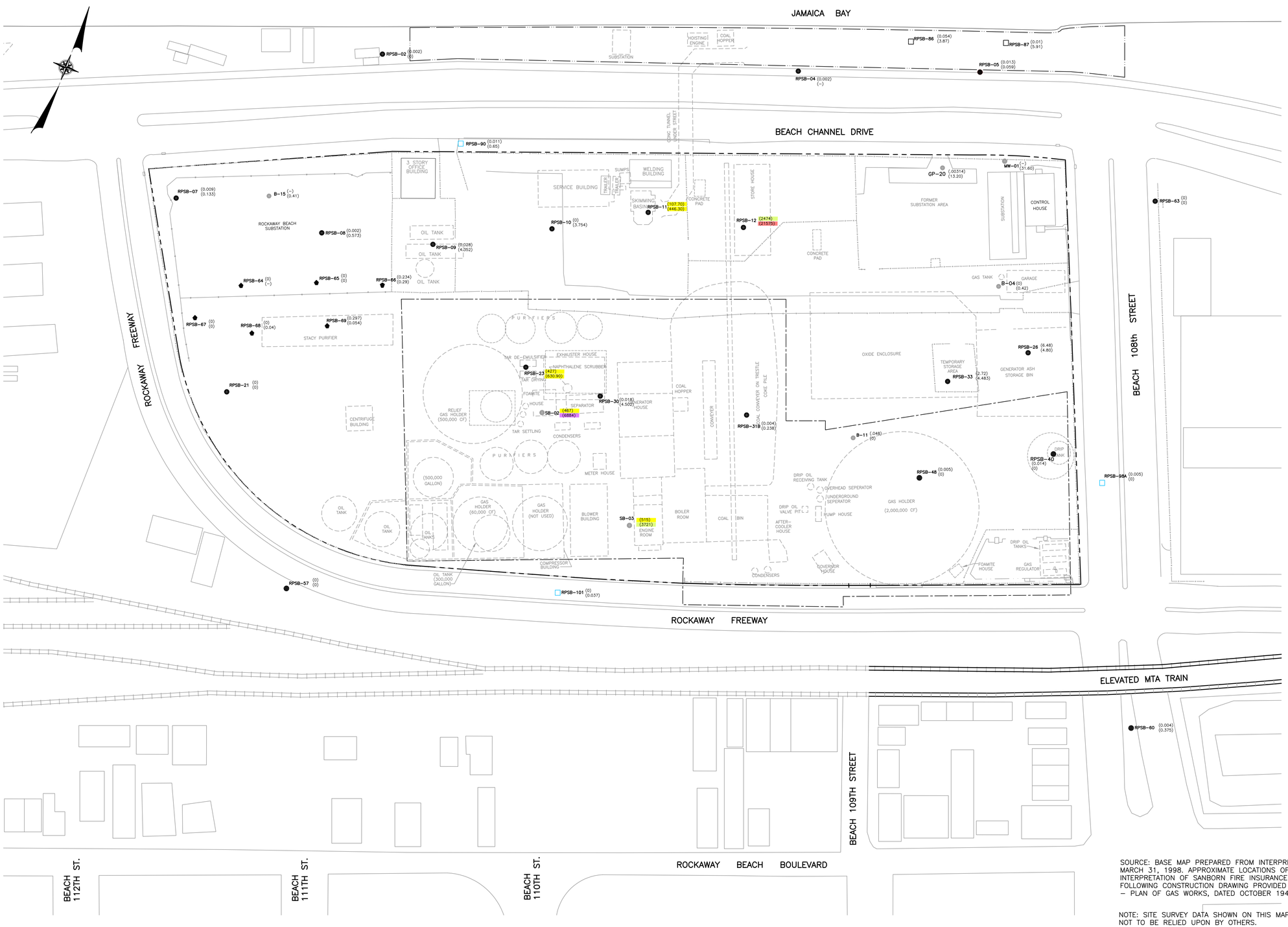

LEGEND:

RPSB-07 (0.002) (0) — SOIL BORING AND SOIL SAMPLE LOCATION FROM THE ROCKAWAY PARK SITE INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg

RPSB-66 (0.234) (0.29) — SOIL BORING AND SOIL SAMPLE LOCATION FROM THE ROCKAWAY PARK SUBSTATION AND DELISTING PETITION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg

SB-01 (391.50) — SOIL SAMPLE LOCATION FROM GEI PHASE I INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg

GP-04 (0) (0.042); B-13 (0) (0.042); B-13 (–) (31.60) — SOIL SAMPLE LOCATION FROM GEI INTERIM REMEDIAL MEASURE STUDY SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg

RPSB-88 (0.006) (0) — SOIL BORING AND SOIL SAMPLE LOCATION FROM THE TRANSMISSION CABLE INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg

RPSB-83 (0.532) (10.97) — SOIL BORING AND SOIL SAMPLE LOCATION FROM THE BULKHEAD INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN mg/kg

- > 100 mg/kg Total BTEX/PAH
- > 1,000 mg/kg Total BTEX/PAH
- > 5,000 mg/kg Total BTEX/PAH
- > 10,000 mg/kg Total BTEX/PAH

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
– PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

NOTE: SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS.

0 50
SCALE IN FEET

NO.	DATE	REVISION	INT.

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DESIGNED BY: XXXX	CHECKED BY: XXXX

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

ROCKAWAY PARK
FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

TOTAL BTEX/PAH
IN INTERMEDIATE SOIL
(13 TO 24 FEET)

PROJECT NO. 1620–C
DATE: OCTOBER 2002
SCALE: AS SHOWN
DRAWING NO. 4B

\\N4HCAD\work\1620\ROCKAWAYPARK\FINALS\MIP LOC. INTER.soil.dwg, 10/09/02 09:47:05 AM, APsolyn

LEGEND:

RPGP-01 (0) (0)	⊕	GROUNDWATER PROBE SAMPLE LOCATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN ug/l
RPMW-01S (0) (0)	⊕	MONITORING WELL SAMPLE LOCATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN ug/l
PZ-01 (1746) (402)	⊞	PEIZOMETER SAMPLE LOCATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN ug/l
RPGP-17 (12800) (2079)	⊕	GROUNDWATER PROBE SAMPLE LOCATION FROM THE TRANSMISSION CABLE INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN ug/l
RPGP-20 (129) (1815)	⊕	GROUNDWATER PROBE SAMPLE LOCATION FROM THE BULKHEAD INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN ug/l

- > 100 ug/l Total BTEX/PAH
- > 1,000 ug/l Total BTEX/PAH
- > 5,000 ug/l Total BTEX/PAH
- > 10,000 ug/l Total BTEX/PAH

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
– PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

NOTE: SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS.

0 50
SCALE IN FEET

NO.	DATE	REVISION	INT.

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DESIGNED BY: XXXX	CHECKED BY: XXXX

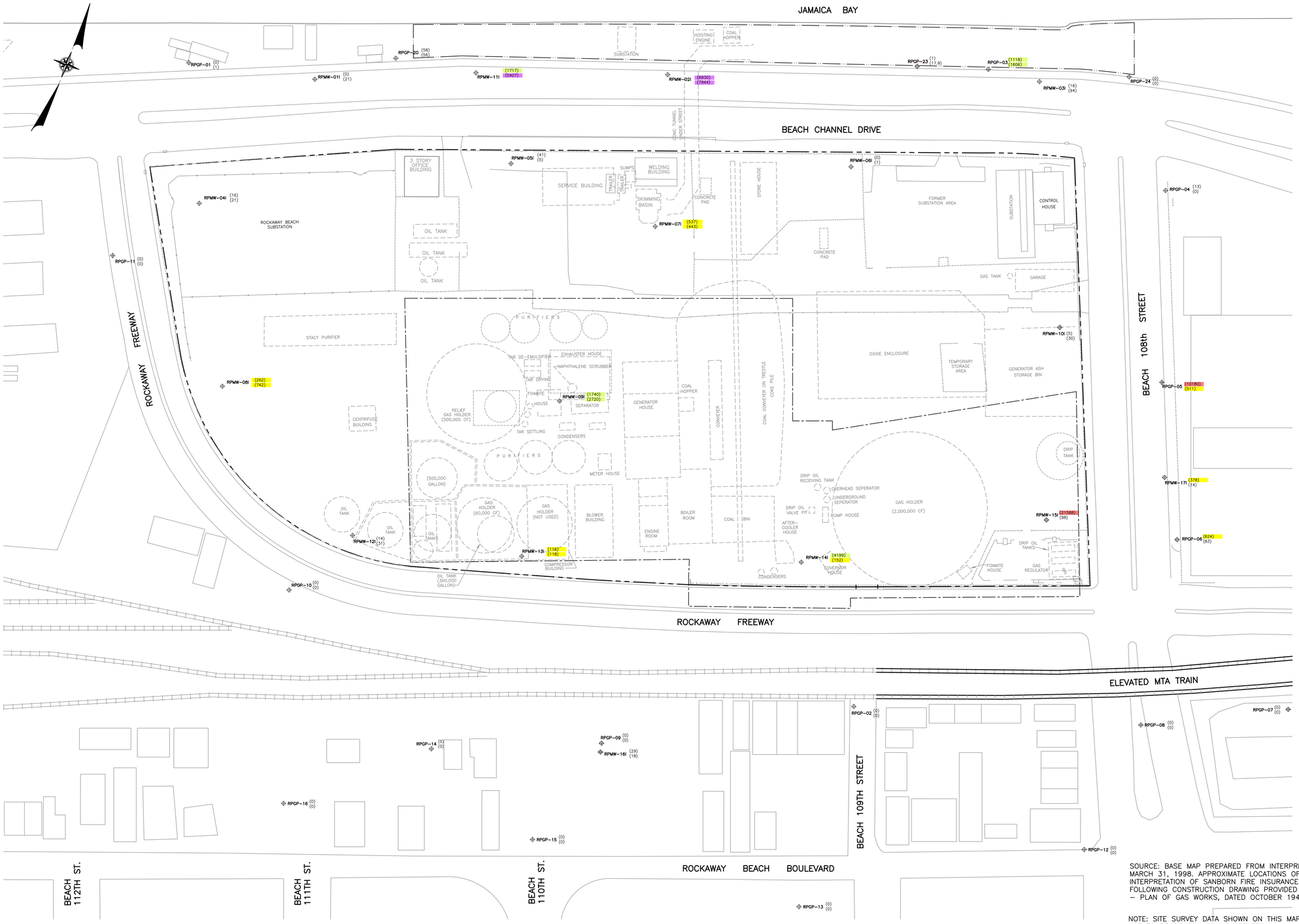
DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

ROCKAWAY PARK
FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

TOTAL BTEX/PAH
IN SHALLOW GROUNDWATER
(2 TO 16 FEET)

PROJECT NO. 1620–C
DATE: OCTOBER 2002
SCALE: AS SHOWN
DRAWING NO. 4c

\\NAS\CADworks\1620\ROCKAWAY\PARK\FINALS\MPP, LOC. SHALLOW.qw.dwg, 10/09/02 09:47:50 AM, AP\ap\n



LEGEND:

RPGP-01 (0) (1) — GROUNDWATER PROBE SAMPLE LOCATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN ug/l

RPMW-01I (0) (21) — MONITORING WELL SAMPLE LOCATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN ug/l

RPGP-20 (58) (56) — GROUNDWATER PROBE SAMPLE LOCATION FROM THE BULKHEAD INVESTIGATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN ug/l

- > 100 ug/l Total BTEX/PAH
- > 1,000 ug/l Total BTEX/PAH
- > 5,000 ug/l Total BTEX/PAH
- > 10,000 ug/l Total BTEX/PAH

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
– PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

NOTE: SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS.

0 50
SCALE IN FEET

NO.	DATE	REVISION	INT.

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PROJECT ENGINEER: XXXX	DRAWN BY: L.V.G.
DESIGNED BY: XXXX	CHECKED BY: XXXX

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

ROCKAWAY PARK
FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

TOTAL BTEX/PAH IN INTERMEDIATE GROUNDWATER (26 TO 45 FEET)

PROJECT NO. 1620–C
DATE: OCTOBER 2002
SCALE: AS SHOWN
DRAWING NO. 4D

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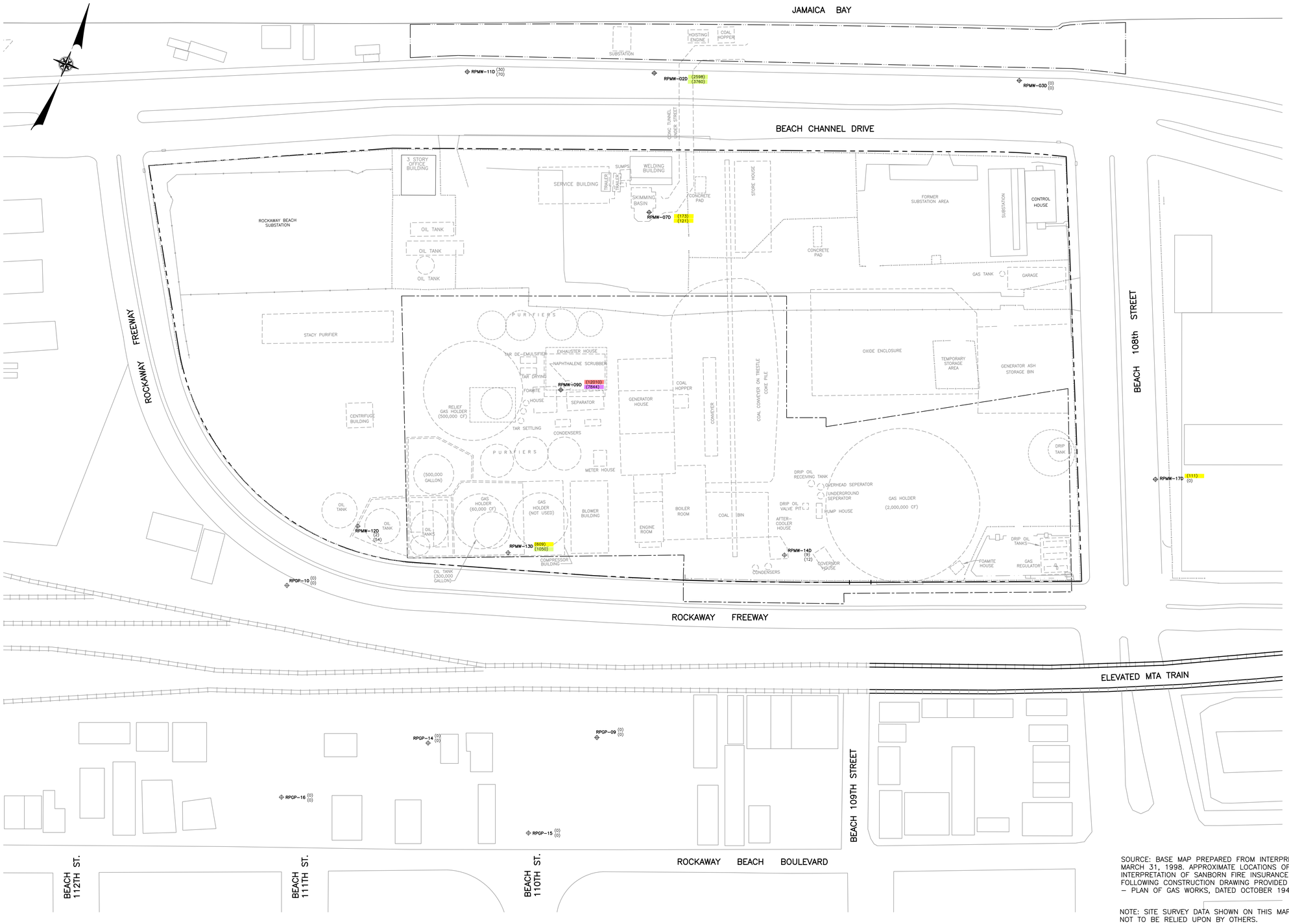

LEGEND:

RPGP-09 (0) (0) — GROUNDWATER PROBE SAMPLE LOCATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN ug/l

RPMW-02D (3760) (2598) — MONITORING WELL SAMPLE LOCATION SHOWING TOTAL BTEX (TOP) AND TOTAL PAH (BOTTOM.) CONCENTRATIONS IN ug/l

- > 100 ug/l Total BTEX/PAH
- > 1,000 ug/l Total BTEX/PAH
- > 5,000 ug/l Total BTEX/PAH
- > 10,000 ug/l Total BTEX/PAH

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
– PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

NOTE: SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS.

0 50
SCALE IN FEET

NO.	DATE	REVISION	INT.

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PROJECT ENGINEER: XXXX	DRAWN BY: L.V.G.
DESIGNED BY: XXXX	CHECKED BY: XXXX

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

ROCKAWAY PARK
FORMER MGP SITE REMEDIAL INVESTIGATION
ROCKAWAY PARK, NEW YORK

TOTAL BTEX/PAH
IN DEEP GROUNDWATER
(65 TO 75 FEET)

PROJECT NO. 1620-C
DATE: OCTOBER 2002
SCALE: AS SHOWN
DRAWING NO. 4E

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5.0 FATE AND TRANSPORT OF CHEMICAL CONSTITUENTS

5.1 Introduction

This section presents a description of the physical, chemical and biological processes that affect the fate and transport of chemical constituents within and downgradient of the Rockaway Park former MGP site. Integrating these natural processes along with information regarding the distribution of the chemical constituents detected in environmental media (e.g., soil, groundwater, etc.), as described in **Section 4.0**, provides insight into the fate and transport mechanisms at work in the environment. The basic factors affecting the fate and transport of chemicals in the environment include:

- Physical properties of the chemicals, including state (e.g., solid, liquid, gas), density/specific gravity, solubility in water, its propensity for volatilization and adsorption to soil;
- The environmental media in which the chemicals are released (e.g., air, soil, water) and the spatial and temporal changes in media as the chemical moves through the environment; and
- The physical, chemical and biological processes that degrade or limit the mobility of the chemicals.

Based on the results of the investigation presented in **Section 4.0**, with respect to current on-site conditions, the environmental media primarily affected include subsurface soil and groundwater. Off-site, the media principally affected is groundwater and subsurface soil. The principal chemical constituents affecting on-site and off-site environmental media are BTEX and PAHs compounds. In addition, because cyanide was also detected in soil and groundwater, the fate and transport of cyanide is also provided in this section. While metals were detected in on-site subsurface soil and groundwater, concentrations were generally low with metals being at or near typical background concentrations. Therefore, this discussion focuses on the behavior of BTEX and PAHs compounds and cyanide within the environment, including surface soil, subsurface soil, soil vapor and groundwater.

The basic physical, chemical and biological processes and chemical properties affecting the fate and transport of BTEX and PAH compounds within the environment are described below. Although the processes discussed below are biased toward their influence on BTEX and PAHs, most of these same processes also influence the fate and transport of cyanide. However, because in some cases the actual influences of these processes are manifested differently for cyanide than for BTEX and PAHs, discussions on cyanide fate and transport are deferred to **Section 5.4** of the report. **Table 5-1** summarizes the relative degree to which each process affects the fate and transport of BTEX compounds, low molecular weight PAHs, mid or transitional weight PAHs and high molecular weight PAHs.

- *Sorption* - Sorption is the process by which chemicals in either a liquid or gas phase become physically and/or chemically associated with the surface of a solid phase. The sorption of organic chemicals is primarily governed by the amount of naturally occurring organic carbon present in the matrix of the soil or aquifer and the chemical's susceptibility to sorption to organic carbon. Organic carbon is typically present as coatings on the surfaces of the solid matrix (e.g., sediment grains, fractured bedrock surfaces, etc.) of the aquifer or as particulate organic matter. The organic carbon partition coefficient (K_{oc}) is used as an indicator for the propensity of an organic chemical to adsorb to naturally occurring organic carbon. The affinity of a chemical to adsorb to organic carbon, as reflected by its K_{oc}, influences the mobility and/or attenuation of the chemical. Organic chemicals with higher K_{oc}s will adsorb to organic carbon more readily than chemicals with lower K_{oc}s.

  The migration rates of organic chemicals in groundwater that adsorb onto organic matter in the aquifer (i.e., that have higher K_{oc}s) are attenuated or retarded relative to the natural groundwater flow rate. Consistent with this principle, the migration rate of an organic chemical with a relatively high K_{oc}, is more strongly retarded as a result of sorption to organic carbon in the aquifer as compared to the migration rate for a chemical with a low $K_{oc.}$ In general, BTEX and low molecular weight PAH compounds, such as naphthalene have low to moderate K_{oc} values as compared to the higher molecular weight PAH compounds, such as benzo(a)pyrene. Accordingly, in soil and aquifers containing measurable TOC, the higher molecular weight PAHs will migrate at a slower rate than the BTEX and low molecular weight PAHs. Therefore, higher molecular weight PAHs would not be expected to migrate far from a source area in most soil environments and aquifers. An exception to this general rule is if the PAH compounds are migrating as a component of a NAPL, such as tar and oil. In this case the bulk of the NAPL containing PAHs may migrate through the soil at a higher rate irrespective of sorption considerations.

TABLE 5-1
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION

RELATIVE INFLUENCE OF CHEMICAL PROPERTIES AND PROCESSES RELATED TO THE FATE AND TRANSPORT OF BTEX AND PAH COMPOUNDS

COMPOUND GROUP/SPECIES	MOLECULAR WEIGHT (g/mol)[1]	SORPTION	Log K_{oc} [1][2]	SOLUBILITY	SOLUBILITY IN WATER (mg/L)[1]	VOLATILIZATION	BIOLOGICAL DEGRADATION	NET EFFECT
BTEX								
Benzene	78.11	**Low**	1.89	**High**	1,780	**High**	**High**	Mobile within most environments. Degrades quickly under favorable conditions.
Toluene	92.14		2.12		515			
Ethylbenzene	106.17		2.2		152			
Xylenes	106.17		2.54		174.3[3]			
LOW MOLECULAR WEIGHT PAHs								
Naphthalene	128.18	**Moderate**	3.14	**Moderate**	30	**Low**	**Moderate**	Moderate mobility within most environments. Degrades at moderate rates under favorable conditions.
Acenaphthylene	152.2		3.68		3.93			
Acenaphthene	154.21		1.25		3.47			
2-Methylnaphthalene	142.2		3.4		24.6			
MID OR TRANSITIONAL MOLECULAR WEIGHT PAHs								
Phenanthrene	178.24	**High**	4.22	**Low**	1.6	**Very Low**	**Low**	Immobile within most enviroments. Recalcitrant to biodegradation.
Dibenzofuran	168.2		3.91 - 4.10		10			
Fluorene	166.22		3.7		1.69			
Anthracene	178.24		4.3		0.075			
HIGH MOLECULAR WEIGHT PAHs								
Fluoranthene	202.26	**High to Very High**	4.62	**Low to Very Low**	0.265	**Very Low**	**Very Low**	Immobile within most enviroments. Recalcitrant to biodegradation.
Pyrene	202.26		4.84		0.16			
Chrysene	228.3		5.39		0.0015			
Benzo (b) fluoranthene	252.32		5.74		0.0012			
Benzo (k) fluoranthene	252.32		6.64		0.00055			
Benzo (a) anthracene	228.3		6.14		0.014			
Indeno (1,2,3-cd) pyrene	276.34		7.49		0.062			
Dibenzo (a,h) anthracene	278.36		6.22		0.0005			
Benzo (g,h,i) perylene	276.34		6.89		0.00026			
Benzo(a)pyrene	252.32		5.60 - 6.29		0.0038			

Notes

[1] From: Montgomery, John H., and Linda M. Welkom.*Groundwater Chemicals Desk Reference* (Chelsea, MI: Lewis Publishers, Inc., 1990), 640 p.

[2] Sorption Coefficient - The ratio of adsorbed chemical per unit weight of organic carbon to the aqueous solute concentration.

[3] Taken from average solubility of all three xylenes at or around 20° C.

- Aqueous *Solubility* - Aqueous solubility is a measure of the maximum mass of a chemical that can exist in an aqueous phase at equilibrium with the pure chemical. This chemical property is used indirectly to assign relative potentials for a chemical to leach into an aqueous phase from a source material, such as a NAPL. Chemicals with high solubilities will tend to leach easily and to remain in aqueous solution. The opposite conditions apply to chemicals with low aqueous solubilities. In general, high solubility chemicals, such as the BTEX compounds, are more mobile in the environment than chemicals with moderate solubilities, such as the low molecular weight PAH compounds such as naphthalene, acenaphthylene, acenaphthene and methylnaphthalene. The higher molecular weight PAH compounds, such as fluoranthene, pyrene and chrysene, have low to very low solubilities, are not very mobile and are not expected to migrate far from a source.

- *Volatilization* - Volatilization is the process by which a fraction of a chemical in a solid or liquid phase partitions into a gas phase. The extent to which this process proceeds is measured by the vapor pressure for a particular chemical. In general, chemicals with higher vapor pressures, such as BTEX, volatilize more readily than chemicals with low vapor pressures, such as PAHs. For these reasons, BTEX dissolved in groundwater are more likely to migrate to soil vapor and migrate through unsaturated soil, eventually releasing to the atmosphere. Low molecular weight PAHs have low vapor pressures relative to BTEX, therefore, while volatilization of these compounds does occur, the extent of volatilization of PAHs is negligible compared to BTEX. High molecular weight PAHs have very low vapor pressures indicating virtually no volatilization will occur under most conditions.

- *Biodegradation* – Biodegradation is the transformation of organic chemicals to innocuous secondary compounds and ultimately to carbon dioxide and water as the result of the metabolic activity of microbes, including bacteria and fungi, that are typically present in most natural environments (S.S. Suthersan, 1997). The processes that facilitate biodegradation have been extensively investigated and well documented and have been demonstrated to be effective in reducing concentrations of a wide range of organic compounds within soil, groundwater and surface water. Biological processes which take place in the natural environment can modify and destroy organic compounds at the point of introduction or during their transport within soil, groundwater or surface water. While rates of degradation are highly variable and are directly influenced by physical and chemical conditions in the environmental media, BTEX compounds are readily degraded under aerobic (oxygen-rich) conditions in soil, groundwater and surface water. Low molecular weight PAHs have been shown to naturally degrade at moderate rates under aerobic conditions.

The processes described above, along with the results of the remedial investigation and historical site investigations and our understanding of the on-site and off-site hydrogeologic conditions, are integrated in the following sections to develop a conceptual model that describes the fate and transport of chemicals detected in soil and groundwater at the site. The fate and

transport model proposed below identifies several possible on-site and limited off-site sources for NAPL, possible areas of the site where the NAPL may have originated, the modes of NAPL migration away from these source areas, leaching of the more mobile constituents (e.g., BTEX compounds) present in the source material(s), migration of these dissolved constituents through vadose zone soil to groundwater and, ultimately, the off-site migration and attenuation of the dissolved chemicals in groundwater.

Based on the processes and properties of the chemicals of interest described above, along with our understanding of the on-site and off-site hydrogeologic conditions, the following sections describe conceptual fate and transport mechanisms applicable to the site.

5.2 On-site Source Areas

5.2.1 Transport and Fate of NAPL

Low viscosity tar and oil that may have been discharged to the site would have behaved as NAPLs migrating vertically through the soil column under the force of gravity until contacting the water table which is approximately 5 feet below grade across the majority of the site. If denser than water (DNAPL), the DNAPL would likely continue to migrate below the water table and through the relatively permeable fill material and barrier beach deposits which underlie the site. Given that there appears to be no major stratigraphic confining units present within the site, vertical migration of DNAPL may continue until the volume required to sustain gravity-driven migration becomes inadequate due to solubilization or due to the loss of mass as the result of the DNAPL being immobilized in pore spaces.

Upon reaching the groundwater table, NAPL which is less dense than water (LNAPL) tends to spread laterally on the surface of the water table. The LNAPL would become further immobilized in the pore spaces of the soil as the water table naturally fluctuated in the vertical direction in response to changes in rates of groundwater recharge as well as any tidal influences. This would create a vertical zone of residual LNAPL, typically referred to as a “smear zone.”

Upon release to the environment, NAPLs typically distribute quickly within the subsurface (P.V. Noort, et al., 1994). Therefore, given that manufactured gas production operations at the site ceased at least 40 years ago, it can be concluded that the majority of NAPL currently present in the subsurface is likely to be at residual saturation levels within subsurface soil. Although NAPL present at residual saturation is relatively stable, it may migrate locally in response to changes in groundwater flow patterns resulting from seasonal and/or daily tidal fluctuations. As previously discussed, NAPL thicknesses were observed to decrease from March 2000 to November 2001, in monitoring wells PZ-05 and PZ-08. However, extensive migration at NAPL due to tidal influences is not likely.

Drawings 5A through **5C** identify the physical observations of NAPL-saturated soil, blebs and lenses of NAPL; observations of soil grains coated by NAPL; and stained and/or soil with naphthalene/hydrocarbon-like odors. **Drawings 5A through 5C** reflect these observations if one or more soil samples exhibited the observation in the shallow (0 to 12 feet bgs), intermediate (12 to 24 feet bgs) and deep (greater than 24 feet deep) zones, respectively. **Drawings 5A, 5B** and **5C** are provided in map pockets at the end of this section. As indicated by **Drawing 5A**, there are three general areas within the site that contain NAPL-saturated soil in the shallow zone 10-12 feet below grade, including:

- The former Gas Works area;
- An area including the former Oxide Enclosure and the southwest corner of the former electric substation; and
- The southeast corner of the site, immediately east of the former 2-Million Cubic Foot Gas Holder and within the area of several former Drip Oil Tanks.

The largest area containing NAPL-saturated soil is the former Gas Works area. The next largest area of NAPL in shallow soil appears to be present in the area of the former Oxide Enclosure and the southwest corner of the former electric substation. The southeast corner of the site appears to contain the smallest area of NAPL-saturated shallow soil.

Shallow Soil

As shown on **Drawing 5A**, off-site soil samples collected from 0 to 12 feet bgs did not exhibit NAPL at saturated levels. However, solid tar was observed at soil boring RPSB-03 which is located north of the site. With the exception of RPSB-03, only stained soil or soil exhibiting naphthalene/hydrocarbon-like odors were observed to the north of the site. At this location, solid tar was only observed in the 4 to 8 foot depth interval. NAPL-saturated soil was not observed in any of the 25 soil borings completed to the west and south of the site along Rockaway Freeway. However, staining and/or naphthalene/hydrocarbon-like odors were observed in 14 soil borings located along Rockaway Freeway.

It should be noted that piezometer PZ-08, located in the central portion of the former Gas Works area and screened at 5 to 15 feet bgs, contained approximately 3 feet of measurable LNAPL layer in March 2000 at the water table. Furthermore, NAPL-saturated soil identified north of this area at PZ-01 and RPSB-11 indicates NAPL present within the former Gas Works area may be migrating towards the north, consistent with the natural flow of groundwater. The detection of a thin LNAPL layer of less than 0 to 0.10-foot on the water table at monitoring wells RPMW-05S and RPMW-11S may also indicate a northerly migration of NAPL from this area. Monitoring wells RPMW-05S and RPMW-11S are located approximately 160 feet north of the former Gas Works area and 80 feet north of the site along Beach Channel Drive, respectively. However, groundwater measurements conducted in November 2001 indicate measurable levels of LNAPL only in piezometers PZ-05 and PZ-08 of 0.16 feet and 0.25 feet, respectively. As previously discussed, **Table 4-6** summarizes the measured NAPL thicknesses in monitoring wells and piezometers.

Soil samples collected from borings RPSB-98, RPSB-98A, RPSB-99, and RPSB-100 located to the east of the site, exhibited staining and/or naphthalene/hydrocarbon-like odors. However, odors described as sewer-like and/or solvent-like were observed in borings RPSB-61, RPSB-98A, RPSB-99, and RPSB-100. The sewer-like odors are likely related to the sewage treatment plant located east of Beach 108th Street.

Intermediate Soil

Comparing **Drawing 5A** with **Drawing 5B**, which summarizes field observations for intermediate soil, indicates that the NAPL-saturated soil area around the former Gas Works area is generally smaller than the lateral extent observed in the shallow zone. The lateral extent of blebs, lenses, and tar-coated soil generally is the same in the intermediate zone as in the shallow zone.

The area containing NAPL-saturated soil in the vicinity of the former electric substation appears to be less extensive in the intermediate zone when compared to the shallow zone. However, this could be attributed to the fact that there are fewer data points for this area in the intermediate zone given the majority of soil borings completed in this area as part of the 1999 Substation Investigation were terminated at a depth of less than 12 feet bgs. The NAPL-saturated soil area in the southeastern corner of the site appears to be as extensive in the intermediate zone as in the shallow zone.

Review of **Drawing 5B** indicates that off-site soil samples collected from soil borings RPSB-92 and RPSB-93 located to the north of the site, exhibited NAPL-saturated soil within the intermediate zone. Intermediate zone soil at RPSB-84 contained lesser degrees of tar in soil (blebs, lenses, sheen, etc.). Soil from the intermediate zone at borings RPSB-01, RPSB-02, RPSB-02A, RPSB-90, RPSB-91, RPSB-94, RPSB-95, RPSB-IRM-01, RPSB-83, RPSB-IRM-02, RPSB-03, RPSB-04, RPSB-05, and RPSB-116, located to the north of the site exhibited stained soil and/or naphthalene/hydrocarbon-like odors. Intermediate soil samples collected from RPSB-63, RPSB-96 and RPSB-98A located to the east the site exhibited staining and/or naphthalene/hydrocarbon-like odors.

Deep Soil

Review of **Drawing 5C** indicates that the NAPL-saturated soil in the deep interval within the former Gas Works area is nearly as extensive as has been observed in shallower soil. Soil recovered from several deep borings completed within this area, including RPSB-22, RPSB-29,

RPSB-31A, RPSB-36, RPSB-41, RPSB-42, RPSB-43, and RPSB-44 indicate NAPL at saturated levels as deep as 116 feet below grade (soil boring RPSB-44) indicates at least a portion of the NAPL released in this area contained a DNAPL component. In addition, deep monitoring well RPMW-09D2 screened from 95 to 105 feet bgs in the former Gas Works area exhibited evidence of DNAPL layer during the sampling of this well. As discussed in **Section 3.2**, the former Gas Works area of the site contained several silt-fine sand strata between 65 and 95 feet bgs. However, based on the vertical distribution of NAPL in this area, the silt-fine sand strata do not appear to behave as an effective confining unit.

Available soil data collected from the area south of the former electric substation at a depth below 24 feet, while limited, does indicate the presence of NAPL to at least 30 feet bgs in this area. Therefore, while the majority of the source of NAPL in this area may have been a LNAPL, it is apparent that there was also a DNAPL component to this source material. Similarly, the NAPL-saturated soil area in the southeastern corner of the site appears to extend as deep as 36 feet below grade, as indicated by soil recovered from RPSB-54, which also suggests a DNAPL component in this area of the site.

Additionally, the presence of NAPL at RPSB-92 may indicate NAPL migration from the former Gas Works area to the north within soil deeper than 24 feet bgs. Evidence of NAPL-saturated soil was observed north of the site along Beach Channel Drive in soil collected from RPSB-92. Soil collected from borings RPSB-84 and RPSB-116 exhibited blebs, lenses, sheen, etc. Other observations in the deep soil north of the site included soil staining and/or naphthalene/hydrocarbon-like odors at the locations of RPSB-01, RPSB-02, RPSB-02A, RPSB-03, RPSB-85, RPSB-91, RPSB-93, RPSB-04, RPSB-85, RPSB-05, and RPSB-95. It should be noted that, during the sampling of monitoring well RPMW-11D in March 2000, groundwater exhibited evidence of NAPL. However, groundwater measurements conducted in November 2001 did not indicate any measurable NAPL in monitoring well RPMW-11D. Monitoring well RPMW-11D is located approximately 80 feet north of the site along Beach Channel Drive and is screened from 65 to 75 feet bgs.

5.2.2 Transport of Chemical Constituents from Source Areas to the Atmosphere

While BTEX, and to a lesser degree, low molecular weight PAH compounds, may volatilize from residual NAPL and subsurface soil containing these compounds in a sorbed phase, the majority of the BTEX/PAH source is several feet below grade. As a result, BTEX and PAHs present in source areas are not directly exposed to the atmosphere. Therefore, while some volatile emissions may intermittently discharge to the atmosphere within the site, it does not appear to be a major migration pathway. This is supported by the fact that on-site ambient air results did not identify the presence of elevated levels of BTEX or naphthalene.

5.2.3 Transport of Chemical Constituents from Source Areas to Groundwater

While the loss of BTEX and PAH compounds from on-site source areas through volatilization may occur, the primary transport mechanism or migration pathway for these compounds is dissolution through direct infiltration of precipitation, as well as groundwater flow through the soil containing the residual NAPL and sorbed BTEX and PAH compounds.

Due to site conditions and the properties of the chemical constituents, the relatively soluble compounds such as BTEX and low molecular weight PAHs which become dissolved in groundwater will have a much greater propensity to stay in solution and migrate via the natural flow of groundwater. In contrast, the high molecular weight PAHs with lower rates of solubility and a higher potential for sorption would have a tendency to remain within the immobile NAPL present in the soil matrix or only migrate a limited distance from this source and become sorbed onto organic material present in the soil. This is supported by the groundwater data which indicates on-site groundwater collected from areas which contain evidence of NAPL, such as the former Gas Works area, exhibit elevated levels of BTEX and low molecular weight PAHs in addition to detections of high molecular PAHs, including: benzo(a)anthracene, chrysene, indeno (1,2,3-cd)pyrene and benzo(k)fluoranthene. In contrast, groundwater data collected from areas downgradient of the site, such as along Beach Channel Drive, indicates the off-site groundwater exhibiting BTEX and PAHs primarily contain low molecular weight PAHs such as naphthalene, 2-methylnaphthalene and acenaphthalene.

5.2.4 Weathering of Source Areas

As discussed above, dissolution of BTEX and PAHs from on-site source areas into groundwater is the principal transport mechanism for these compounds. This process has likely been occurring since the compounds entered the subsurface environment at least 40 years ago. Along with the process of dissolution are the ongoing physical, chemical and biological mechanisms associated with volatilization and biodegradation. This overall process, collectively referred to as "weathering," has been reducing the concentration of these compounds within on-site source areas on an ongoing basis.

5.3 Off-site Transport Mechanisms

5.3.1 Transport of Chemical Constituents Present in Surface Soil

As discussed in **Section 4.2.1**, the analysis of surface soil samples collected from the site identified relatively low concentrations of BTEX and PAHs in surface soil with total BTEX and total PAHs not exceeding 0.008 mg/kg and 185.59 mg/kg, respectively. The northernmost third of the site is either covered by asphalt, crushed stone or structures preventing transport mechanisms, such as wind erosion or overland flow during periods of heavy precipitation of effecting surface soil in these areas. The remaining portions of the site are covered by a relatively thick vegetative cover effectively minimizing wind erosion in these areas.

5.3.2 Transport of Chemical Constituents in Groundwater

On-site groundwater that has come into contact with BTEX and PAH source materials will contain BTEX and PAHs as a result of the processes described under **Section 5.2.3**. Groundwater containing these compounds will continue to migrate off-site in the direction of groundwater flow. Based on these conditions, flow of groundwater from on-site source areas to off-site locations is considered an important migration pathway for BTEX and PAH compounds.

As discussed in **Section 3.4**, groundwater flows through the majority of the site in a northerly direction. Therefore, BTEX and PAHs dissolved in groundwater would be expected to migrate off-site in a northerly direction. This migration pathway has been confirmed by virtue of the fact that BTEX and PAHs have been detected in groundwater samples collected from monitoring wells and groundwater probes completed north of the site along Beach Channel Drive. In addition, groundwater contour maps provided in **Section 3.0** indicate a more northeasterly flow of groundwater in the eastern portion of the site. This migration pathway is supported by the fact that groundwater samples collected from the eastern side of Beach 108th Street, approximately 100 feet east of the site boundary, exhibit concentrations of BTEX and PAHs. Off-site migration of BTEX and PAHs in groundwater flowing north appears to be primarily occurring in intermediate and deep groundwater, between 26 and 75 feet bgs. Shallow groundwater samples collected from between 2 and 16 feet bgs north of the site are relatively free of elevated levels of BTEX and PAHs. However, off-site migration of BTEX and PAHs from the easternmost portion of the site, which is occurring in a more northeasterly direction, appears to be primarily occurring in shallow groundwater of less than 16 feet bgs and to a lesser extent intermediate groundwater of less than 45 feet bgs.

The migration of BTEX and PAHs in groundwater will continue in the direction of groundwater flow away from the site until the compounds are attenuated by natural processes occurring in groundwater or until the groundwater discharges to a surface water body such as Jamaica Bay. Hydrocarbons, such as BTEX and PAHs, have been shown to degrade in groundwater as the result of physical and biological processes which naturally occur in aquifer systems. Research concerning the evolution of hydrocarbon plumes in groundwater indicate:

- Plumes tend to reach a stable shape and size even when a source is present;
- Plumes "shrink" or narrow (frequently longitudinally) when a source is reduced or removed; and
- Studies have shown that natural biodegradation process occurring within aquifers can be responsible for the reduction of 80 to 100 percent of the hydrocarbon mass of a plume within 1 to 1.5 years after source removal. Volatilization and advective dispersion each could account for only 3 to 5 percent of the BTEX losses in the plume studies (P.M. McAllister, C.Y. Chang, 1994; J.P. Salanitro, 1993; Rifai, et al., 1988). As previously discussed, biodegradation of low molecular weight PAHs present in

groundwater at the site (i.e., naphthalene, 2-methylnaphthalene and acenaphthylene) has been shown to occur at moderate rates under favorable conditions.

5.3.3 Transport of Chemical Constituents from Groundwater to Surface Water

Given that the predominant flow of groundwater is in the general direction of Jamaica Bay and that elevated levels of BTEX and PAHs have been detected in intermediate and deep groundwater samples collected immediately north of the site, it is possible that groundwater containing these compounds is discharging to this surface water.

BTEX and PAHs present in groundwater that may be discharging to Jamaica Bay will be rapidly attenuated as the result of the following fate and transport factors:

- Groundwater containing BTEX and PAHs which discharges to surface water will be diluted as the result of mixing with the surface water and other discharging water sources. This factor is especially important in the area of Jamaica Bay which may receive discharged groundwater from the site given the relatively strong tidal currents present in this area; and
- BTEX and PAHs dissolved in surface water will have the propensity to volatilize from the water as well as undergo biological decay. Studies have shown that BTEX compounds such as benzene readily degrade through natural processes within surface water (L.Y. Wick, et al., 2000).

5.3.4 Transport of Chemical Constituents from Groundwater to Soil Vapor

While volatilization of BTEX and low molecular weight PAH compounds are likely occurring to some degree within off-site areas, the maximum total BTEX concentration in soil vapor did not exceed 470 ppbv. Additionally, naphthalene was not detected in any of the soil vapor samples collected from off-site locations. Therefore, the volatilization of BTEX and naphthalene from groundwater to soil vapor does not appear to be a major transport mechanism.

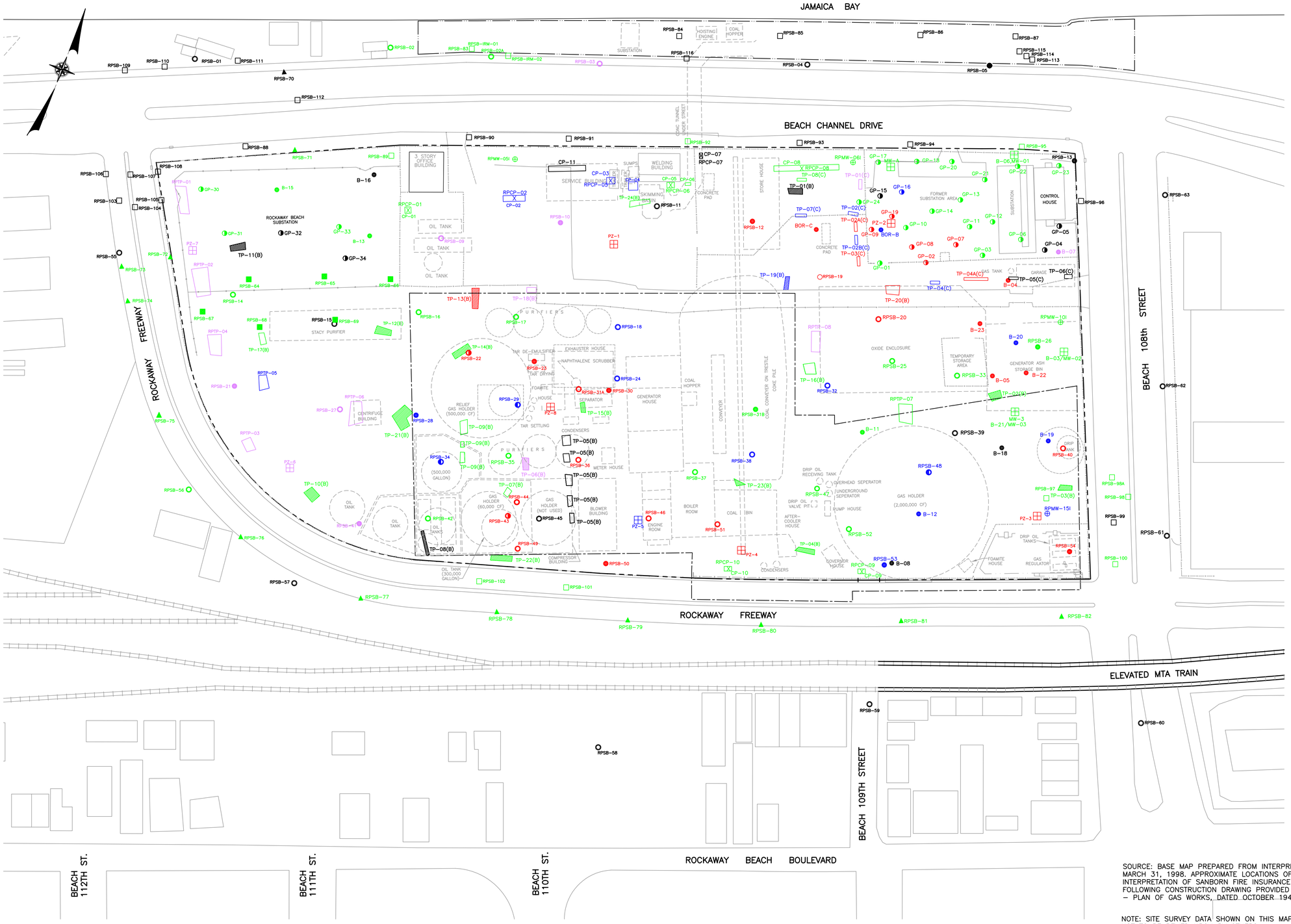
5.4 Fate and Transport of Cyanide

Carbon and nitrogen are abundant in the feedstocks used during gas production at MGPs. As a result, cyanide is produced in trace amounts in manufactured gas. After the gas is produced and prior to being sent to a gas holder for distribution, the gas was passed through a scrubber or purifier to remove sulfur. These closed structures were packed with wood shavings impregnated with iron oxides. In addition to removing sulfur, the purifier or scrubber also removed cyanide from the gas. The resulting spent wood shavings and/or oxides, commonly referred to as purifier waste, contained cyanide in the form of complexed iron cyanides. The purifier waste would commonly be disposed of at on-site locations creating potential sources of cyanide.

The fate and transport of cyanide in purifier waste primarily depends on whether it is present as metal-cyanide complexes, which are relatively insoluble, or as hydrogen cyanide (HCN), which is very mobile. The most common form of cyanide in purifier waste is hexacyanoferrate or the oxidized form, ferricyanide (GRI 1996), both of which are highly stable and insoluble under most conditions in the subsurface environment. When exposed to air, iron in hexacyanoferrate oxidizes to ferricyanide producing the classical Prussian blue color. As the complexed iron cyanides have low solubility, leaching from this form of cyanide is minimal.

As discussed in **Sections 4.2.3** and **4.3.3**, total cyanide was detected in on-site groundwater as well as in downgradient off-site groundwater located in the vicinity of Beach Channel Drive. Off-site migration of total cyanide in groundwater flowing north appears to be primarily occurring in shallow and intermediate groundwater, between 5 and 45 feet bgs.

As with BTEX and PAHs, total cyanide will continue to migrate in groundwater in the direction of groundwater away from the site until the groundwater discharges to a surface water body such as Jamaica Bay. Total cyanide present in groundwater that may be discharging to Jamaica Bay will be rapidly attenuated through dilution from strong tidal currents in the bay adjacent to the site.



LEGEND:

PZ-01	PIEZOMETER/WELL LOCATION FROM GEI PHASE I INVESTIGATION-FEBRUARY 1997
MW-01/ MW-A	PIEZOMETER/WELL LOCATION FROM GEI SUBSTATION INVESTIGATION-FEBRUARY 1999
TP-01(B)	GRAB SOIL SAMPLE FROM TEST PIT EXCAVATION FROM GEI PHASE I INVESTIGATION-JANUARY 1997
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (SAMPLING AT 5-FOOT INTERVALS)
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING)
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING 0-25 FEET BGS., SAMPLING AT 5-FOOT INTERVALS THEREAFTER)
TP-01(C)	TEST PIT EXCAVATION FROM GEI SUBTATION INVESTIGATION-FEBRUARY 1999
B-01/ BOR-A	SOIL BORING SAMPLING LOCATION FROM GEI SUBSTATION INVESTIGATION-FEBRUARY 1999
GP-01	GEOPROBE SOIL SAMPLING LOCATION FROM GEI SUBSTATION INVESTIGATION-FEBRUARY 1999
RPCP-01	APPROXIMATE LOCATION OF GRAB SOIL SAMPLE FROM "CUT AND PLUG" PROGRAM EXCAVATION-FEBRUARY 1999
CP-01	CUT AND PLUG EXCAVATION MARCH 1999
RPMW-01S	GROUNDWATER MONITORING WELL LOCATION (SHALLOW ZONE)
RPMW-01I	GROUNDWATER MONITORING WELL LOCATION (INTERMEDIATE ZONE)
RPSB-74	SOIL SAMPLE LOCATION FROM D&B FEEDER CABLE INVESTIGATION-MARCH 2000
RPSB-64	SOIL SAMPLE LOCATION FROM D&B SUBSTATION INVESTIGATION AND DELISTING PETITION-AUGUST 2000
RPSB-88	SOIL SAMPLE LOCATION FROM D&B TRANSMISSION CABLE INVESTIGATION-NOVEMBER 2001
RPSB-83	SOIL SAMPLE LOCATION FROM D&B BULKHEAD INVESTIGATION-APRIL 2002
	APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
	LOCATION OF EXISTING STRUCTURE
	APPROXIMATE 1912 SITE BOUNDARY
	CURRENT SITE BOUNDARY
	FORMERLY OWNED PROPERTY
	FENCE
	SHALLOW ZONE (0-12 FEET BELOW GRADE)
RPSB-93	TAR SATURATED
RPSB-84	BLEBS, GLOBS, LENSES, GRAIN-COATING, SHEENS
RPSB-98A	STAINING, AND/OR NAPHTHALENE/HYDROCARBON-LIKE ODORS
TP-01 (C)	SOILD TAR

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
- PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

NOTE: SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS.

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SCALE IN FEET

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ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

FIELD OBSERVATIONS OF SHALLOW SUBSURFACE SOIL

PROJECT NO. 1620-C
DATE: OCTOBER 2002
SCALE: AS NOTED
DRAWING NO. 5A

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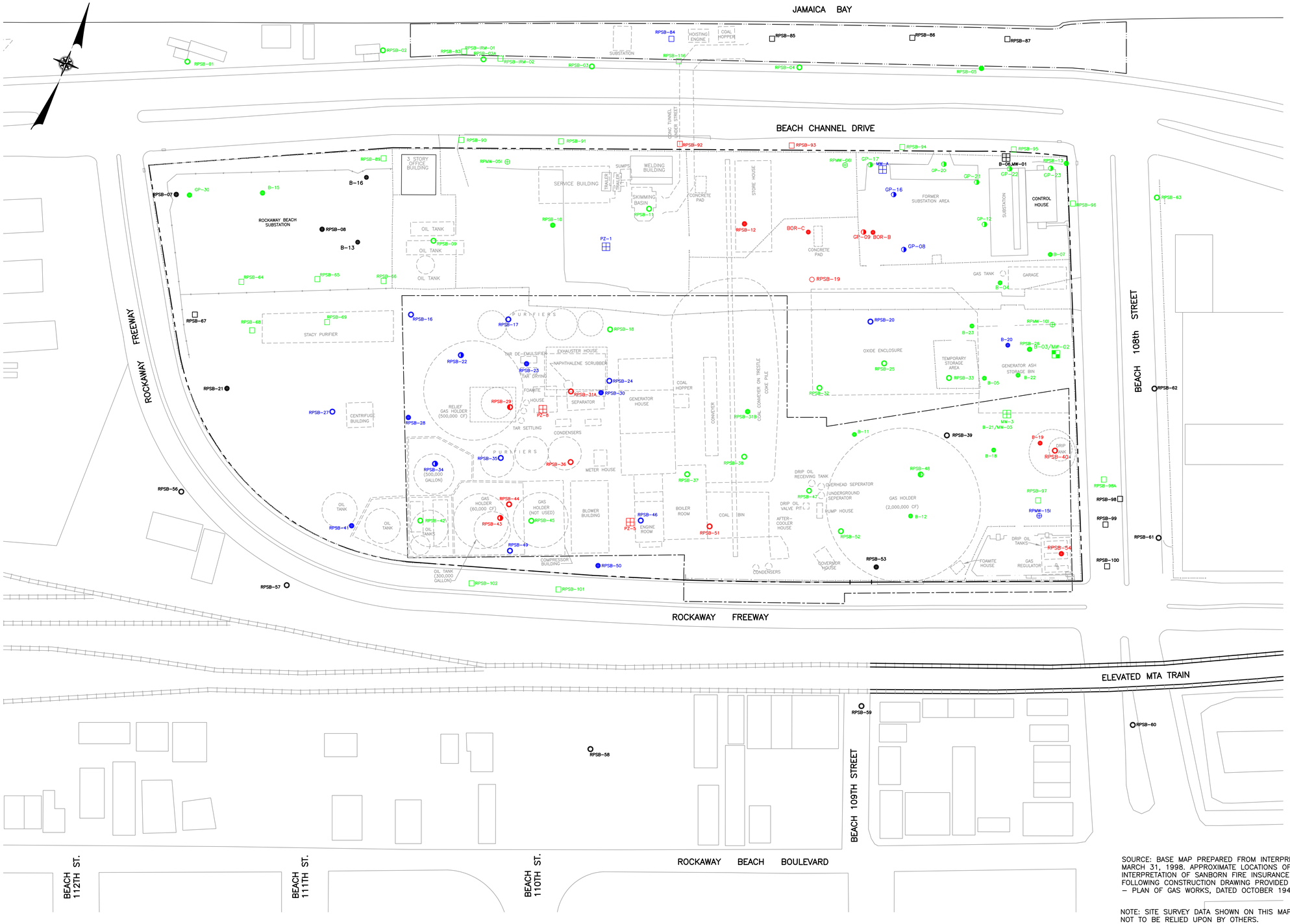

LEGEND:

PZ-01	PIEZOMETER/WELL LOCATION FROM GEI PHASE I INVESTIGATION–FEBRUARY 1997
MW-01/ MW-A	PIEZOMETER/WELL LOCATION FROM GEI SUBSTATION INVESTIGATION–FEBRUARY 1999
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (SAMPLING AT 5-FOOT INTERVALS)
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING)
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING 0–25 FEET BGS., SAMPLING AT 5-FOOT INTERVALS THEREAFTER)
B-01/ BOR-A	SOIL BORING SAMPLING LOCATION FROM GEI SUBSTATION INVESTIGATION–FEBRUARY 1999
GP-01	GEOPROBE SOIL SAMPLING LOCATION FROM GEI SUBSTATION INVESTIGATION–FEBRUARY 1999
RPMW-01S	GROUNDWATER MONITORING WELL LOCATION (SHALLOW ZONE)
RPMW-01I	GROUNDWATER MONITORING WELL LOCATION (INTERMEDIATE ZONE)
RPSB-64	SOIL SAMPLE LOCATION FROM D&B SUBSTATION INVESTIGATION AND DELISTING PETITION–AUGUST 2000
RPSB-89	SOIL SAMPLE LOCATION FROM D&B TRANSMISSION CABLE INVESTIGATION–NOVEMBER 2001
RPSB-83	SOIL SAMPLE LOCATION FROM D&B BULKHEAD INVESTIGATION–APRIL 2002
	APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
	LOCATION OF EXISTING STRUCTURE
	APPROXIMATE 1912 SITE BOUNDARY
	CURRENT SITE BOUNDARY
	FORMERLY OWNED PROPERTY
	FENCE
	INTERMEDIATE ZONE (12–24 FEET BELOW GRADE)
RPSB-93	TAR SATURATED
RPSB-84	BLEBS, GLOBS, LENSES, GRAIN-COATING, SHEENS
RPSB-98A	STAINED, AND/OR NAPHTHALENE/HYDROCARBON-LIKE ODORS

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
– PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

NOTE: SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS.

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ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

FIELD OBSERVATIONS OF INTERMEDIATE SUBSURFACE SOIL

PROJECT NO. 1620-C
DATE: OCTOBER 2002
SCALE: AS NOTED
DRAWING NO. 5B

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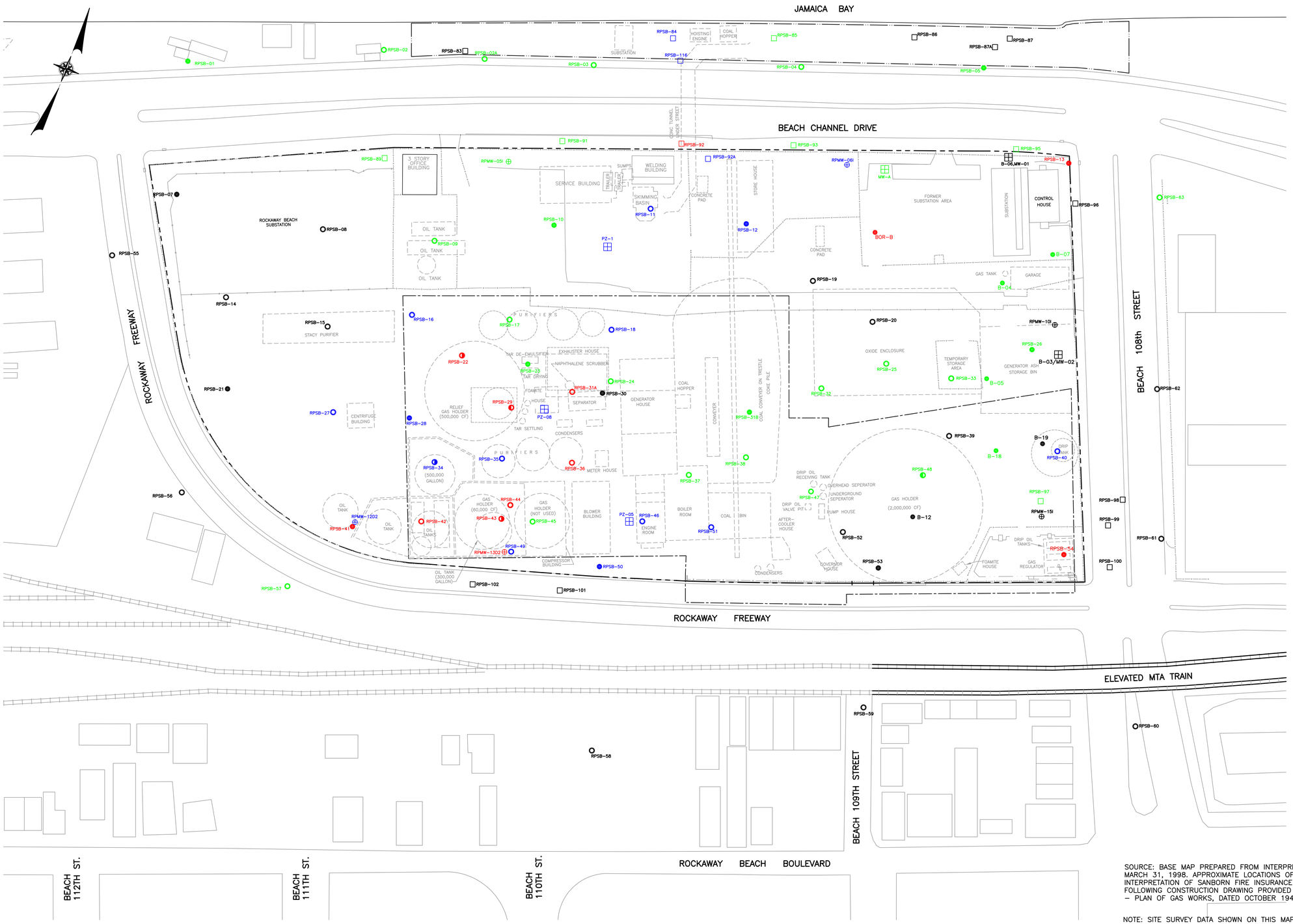

LEGEND:

PZ-01	PIEZOMETER/WELL LOCATION FROM GEI PHASE I INVESTIGATION–FEBRUARY 1997
MW-01/ MW-A	PIEZOMETER/WELL LOCATION FROM GEI SUBSTATION INVESTIGATION–FEBRUARY 1999
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (SAMPLING AT 5-FOOT INTERVALS)
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING)
RPSB-01	SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING 0–25 FEET BGS., SAMPLING AT 5-FOOT INTERVALS THEREAFTER)
B-01/ BOR-A	SOIL BORING SAMPLING LOCATION FROM GEI SUBSTATION INVESTIGATION–FEBRUARY 1999
GP-01	GEOPROBE SOIL SAMPLING LOCATION FROM GEI SUBSTATION INVESTIGATION–FEBRUARY 1999
RPMW-01S	GROUNDWATER MONITORING WELL LOCATION (SHALLOW ZONE)
RPMW-01I	GROUNDWATER MONITORING WELL LOCATION (INTERMEDIATE ZONE)
RPSB-64	SOIL SAMPLE LOCATION FROM D&B SUBSTATION INVESTIGATION AND DELISTING PETITION–AUGUST 2000
RPSB-89	SOIL SAMPLE LOCATION FROM D&B TRANSMISSION CABLE INVESTIGATION–NOVEMBER 2001
RPSB-83	SOIL SAMPLE LOCATION FROM D&B BULKHEAD INVESTIGATION–APRIL 2002
	APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
	LOCATION OF EXISTING STRUCTURE
	APPROXIMATE 1912 SITE BOUNDARY
	CURRENT SITE BOUNDARY
	FORMERLY OWNED PROPERTY
	FENCE
	DEEP ZONE (GREATER THAN 24 FEET BELOW GRADE)
RPSB-93	TAR SATURATED
RPSB-84	BLEBS, GLOBS, LENSES, GRAIN-COATING, SHEENS
RPSB-98A	STAINED, AND/OR NAPHTHALENE/HYDROCARBON-LIKE ODORS

SOURCE: BASE MAP PREPARED FROM INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN:
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ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
ROCKAWAY PARK, NEW YORK

FIELD OBSERVATIONS OF DEEP SUBSURFACE SOIL

PROJECT NO. 1620-C
DATE: OCTOBER 2002
SCALE: AS NOTED
DRAWING NO. **5C**

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6.0 FINDINGS

This section summarizes the findings of the remedial investigation regarding the nature and extent of chemical constituents present within the site and at off-site locations. Where appropriate, additional investigation activities are recommended to further delineate the nature and extent of chemical constituents. It is important to note that a qualitative exposure assessment and a Fish and Wildlife Resources Impact Analysis (FWRIA) will be presented as part of a separate report.

6.1 On-site Field Investigation Program

Surface Soil

- Total BTEX concentrations ranged from less than 0.001 mg/kg to 0.008 mg/kg (RPSS-16) in the 13 surface soil samples collected from the Rockaway Park site. Total PAH concentrations ranged from 3.55 mg/kg to 185.59 mg/kg (RPSS-10). Laboratory results indicate that all RCRA metals were found to be generally within typical background concentrations for soil in the eastern United States. Total cyanide was either not detected or detected at concentrations below the CRDL of 1 mg/kg in 6 of the 13 surface soil samples. Total cyanide ranges in concentration from 0.13 mg/kg to 9.4 mg/kg. Surface soil sample RPSS-10, located in the vicinity of the former Oxide Enclosure, exhibited the highest total cyanide concentration. None of the on-site surface soil samples exhibited detectable levels of total phenols. Surface soil within the northern most third of the Rockaway Park site is either covered by asphalt or crushed stone. The remaining portions of the site are covered by a relatively thick vegetative cover. Therefore, direct contact with surface soil is limited across the site.

Subsurface Soil

- Areas of the site where subsurface soil exhibited naphthalene-like odors, staining, sheens as well as tar/oil droplets or blebs, were encountered primarily in close proximity to the former MGP structures located in the central portion of the Rockaway Park site referred to as the former "Gas Works." Evidence of NAPL was observed at a maximum depth of 116 feet below grade surface (bgs) within the former Gas Works area the near the southern property boundary. Evidence of NAPL was also identified in subsurface soil between 12 and 24 feet bgs at several borings located 80 to 140 feet north of the former Gas Works area.

- NAPL-saturated soil was also observed in the vicinity of the former Oxide Enclosure and former electric substation. In addition, NAPL-saturated soil was observed in the southeast corner of the site adjacent to the former 2-Million Cubic Foot Gas Holder. The vertical extent of NAPL-saturated soil within the area of the former electric substation appears to extend to a depth of at least 30 feet bgs, however the soil borings completed in this area as part of the 1999 Interim Remedial Measure Investigation were terminated before fully defining the vertical extent of NAPL.

- Consistent with the areas of observed NAPL, the highest levels of BTEX and PAHs in subsurface soil were generally observed at shallow intervals (between 2 and 12 feet bgs) and were located within the former Gas Works area, the former Oxide Enclosure and the former 2-Million Cubic Foot Gas Holder. However, the highest total BTEX and PAH concentrations in subsurface soil were observed in soil sample RPSB-12 (14-16 feet) at 2,474 mg/kg and 21,575 mg/kg, respectively. Soil boring RPSB-12 is located in the north central portion of the site within the area of the former Store House.

- BTEX and PAH concentrations in subsurface soil appear to decrease below the intermediate zone of soil. With the exception of soil borings RPSB-22, RPSB-29 and RPSB-92A (located within the former Half-Million Cubic Foot Relief Gas Holder and the northeast of the former Store House), total BTEX and PAH concentrations do not exceed 0.616 mg/kg and 286.5 mg/kg, respectively below a depth of 27 feet below grade.

- Based on BTEX/PAH soil data, evidence of NAPL in recovered soil samples, and the direction of groundwater flow, the following former MGP structures and associated subsurface soil are considered source areas of BTEX and PAH constituents:

  - 2-Million Cubic Foot Gas Holder;
  - Store House;
  - Former Oil Tanks South of the Office Building;
  - Boiler Room;
  - Northern Portion of the Oxide Enclosure;
  - Half-Million Cubic Foot Relief Gas Holder;
  - Tar De-Emulsifier and Tar Drier;
  - Exhauster House/Naphthalene Scrubber;
  - Centrifuge Building;
  - Purifiers in the Central Portion of the Former Gas Works;
  - Oil Tanks on the Southwest Portion of the Site; and
  - Skimming Basin.

- RCRA metal concentrations within the Rockaway Park site were found to be at or below typical background concentrations. Of the 198 samples analyzed, the highest concentrations of arsenic, cadmium, chromium, selenium, silver, and cyanide were found in soil sample RPSB-09 (2-4 feet). Soil boring RPSB-09 was advanced in the

vicinity of the three former Aboveground Oil Tanks located to the south of the existing office building.

- One hundred-sixty-two out of 198 subsurface soil samples collected within the Rockaway Park site were found to be either free of detectable levels of total cyanide or exhibited cyanide concentrations below 1.0 mg/kg. The maximum total cyanide concentration of 138 mg/kg was detected in sample RPSB-09 (2-4 feet).

- Total phenols by USEPA Method 9065 were only detected in one of the 190 subsurface soil samples collected from the site. Subsurface soil sample RPSB-12 (14-16 feet) was the only sample with a detectable level of total phenols, exhibiting a concentration of 23 mg/kg.

- Analysis of 17 on-site subsurface soil samples for full NYSDEC TCL VOCs indicate that the most commonly detected VOCs, other than BTEX, are methylene chloride and acetone, both common laboratory related contaminants. The highest VOC constituent concentration was observed at soil sample RPSB-48 (4-6 feet) where styrene exhibited a concentration of 440 mg/kg. Soil sample RPSB-48 (4-6 feet), located at the former 2-Million Cubic Foot Gas Holder, also exhibited staining, odor, sheen and elevated PID measurements. It should be noted that styrene is a known constituent of coal tar.

- Analyses of the 17 subsurface soil samples selected for the full NYSDEC TCL SVOCs analysis by USEPA Method 8270 indicates that five non-PAH SVOCs were present in these samples. These SVOCs included 2-methylphenol, 4-methylphenol, phenol, bis(2-ethylhexyl)phthalate and carbazole. The highest concentration of non-PAH SVOCs was observed in soil sample RPSB-23 (2-4 feet) where carbazole was detected at a concentration of 4.6 mg/kg. It should be noted that carbazole is a known constituent of coal tar.

- Three out of 17 subsurface soil samples collected did not exhibit detectable levels of pesticides. The highest pesticide concentration of 0.5 mg/kg for 4,4-DDT was observed in soil sample RPSB-23 (2-4 feet). Soil boring RPSB-23 is located in the central portion of the former Gas Works area by the former Tar De-Emulsifier.

- Thirteen out of 17 subsurface soil samples collected did not exhibit detectable levels of PCBs. The highest PCB concentration of 0.32 mg/kg for Aroclor 1254 was observed in soil sample RPSB-23 (2-4 feet). Soil boring RPSB-23 is located in the central portion of the former Gas Works area by the former Tar De-Emulsifier.

<u>Groundwater</u>

- Depth to groundwater at the site is approximately 5 feet bgs. Site groundwater levels are strongly influenced by the cyclic tidal fluctuations of Jamaica Bay. Tidal influences are greatest in monitoring wells located closest to Jamaica Bay and at

wells screened at the intermediate and deep zones, between 35-45 feet bgs and 65-75 feet bgs, respectively. As a result of these tidal influences, there exists a southerly hydraulic gradient between Jamaica Bay and the northernmost portion of the site during periods of high tide. During periods of high tide, a relatively uniform groundwater flow pattern to the south exists within the deep groundwater zone from Jamaica Bay and throughout the site. However, this appears to be a transient condition with a relatively uniform northerly hydraulic gradient observed throughout the majority of the site during low and mid-tidal periods. Consequently, the net groundwater flow throughout the majority of the site is in a northerly direction towards Jamaica Bay. Groundwater in the eastern most portion of the site appears to flow in a more northeasterly direction during low and mid-tidal periods.

- Based on measurements obtained during the investigation in March 2000, two on-site monitoring wells screened at the water table contained measurable levels of LNAPL. Piezometer PZ-08, located within the central portion of the former Gas Works and screened at 5 to 15 feet below grade, contained approximately three feet of measurable LNAPL on the water table. Monitoring well RPMW-05S, located downgradient of piezometer PZ-08, exhibited a trace amount of LNAPL on the water table. DNAPL was also observed in deep monitoring well RPMW-09D2 (located downgradient of piezometer PZ-08) which is screened from 95 to 105 feet below grade. In addition, off-site monitoring wells RPMW-11S and 11D located downgradient or north of the site exhibited trace amounts of LNAPL.

- Groundwater measurements conducted in November 2001 only indicate measurable levels of LNAPL in piezometers PZ-05 and PZ-08 of 0.16 feet and 0.25 feet, respectively. Both of these piezometers are located within the former Gas Works area. A comparison of NAPL thicknesses from March 2000 to November 2001 indicates that the measurable NAPL in groundwater fluctuates as a function of time.

- Thirty-five out of the 38 on-site groundwater samples exhibited detectable levels of BTEX compounds. The maximum concentration of total BTEX of 78,800 ug/l was observed in a groundwater sample collected from monitoring well MW-03, located on the south side of the former Generator Ash Storage Bin (north of the former 2-Million Cubic Foot Gas Holder and the former Drip Oil Tank). Monitoring well MW-03 is screened between the depths of 4 and 14 feet bgs.

- Thirty-seven of the 38 on-site groundwater samples contained detectable levels of PAH constituents. The maximum total PAH concentration of 10,907 ug/l was observed at PZ-02, screened between the depths of 2 and 12 feet bgs and located on the southwest corner of the former substation.

- The distribution of BTEX and PAHs in groundwater are generally consistent with observed soil concentrations and the presence of NAPL. The highest concentrations of these constituents are observed in the vicinity of the former Gas Works area, the former Oxide Enclosure, and the former 2-Million Cubic Foot Gas Holder. In general, on-site groundwater concentrations of BTEX and PAHs decrease with increasing depth at most well clusters. An exception to this general trend was

observed at well cluster RPMW-09 centrally located in the former Gas Works area. BTEX and PAHs increase in concentration from the intermediate to the deep monitoring wells.

- Groundwater within the northwest portion of the site appears to be relatively free of BTEX and PAH constituents with the concentrations not exceeding 16 ug/l and 21 ug/l, respectively.

- Analysis of the 38 groundwater samples obtained from on-site monitoring wells and piezometers identified 15 VOCs in on-site groundwater. The five most common VOCs detected in on-site groundwater samples were: 1,3,5-trimethylbenzene; 1,2,4-trimethylbenzene; styrene; isopropylbenzene; and 4-isopropyltoluene. All five VOCs were detected in groundwater sampled from every on-site monitoring well and piezometer with the exceptions of PZ-07 and RPMW-04S (which exhibited no detected VOCs), RPMW-06I, and RPMW-14D. The highest concentrations of 1,3,5-trimethylbenzene (500 ug/l), 1,2,4-trimethylbenzene (550 ug/l), styrene (5,000 ug/l), isopropylbenzene (90 ug/l), and 4-isopropyltoluene (38 ug/l) were detected in groundwater samples PZ-03, RPMW-13S, MW-03, RPMW-14S, and RPMW-08S, respectively.

- Analysis of the 38 groundwater samples collected for full NYSDEC TCL SVOCs analysis indicated that five non-PAH SVOCs were most commonly detected in groundwater samples obtained from on-site monitoring wells and piezometers. These five SVOCs included phenol, 2-methylphenol, 2,4-dimethylphenol, isophorone, and bis(2-ethylhexyl)phthalate. The highest concentrations of phenol (34 ug/l), 2-methylphenol (89 ug/l), 2,4-dimethylphenol (120 ug/l), isophorone (4 ug/l), and bis(2-ethylhexyl)phthalate (15 ug/l) were detected in groundwater samples RPMW-10S, MW-03, MW-03, RPMW-12D, and RPMW-15I, respectively.

- Metals analysis of the 38 groundwater samples collected indicate that the majority of NYSDEC TAL metals are generally within concentration ranges that would be considered typical of ambient groundwater quality. However, anomalies to this general observation include maximum concentrations of the following metals: aluminum (1,760 ug/l); barium (157 ug/l); iron (35,100 ug/l); and magnesium (629,000 ug/l). These metals were detected in monitoring wells PZ-02, PZ-05, PZ-05 and RPMW-09D2, respectively.

- Twenty-two out of 38 groundwater samples collected exhibited levels of total cyanide greater than the CRDL of 20 ug/l. The highest total cyanide concentration of 748 ug/l was observed in groundwater sample PZ-08. Piezometer PZ-08 is located in the middle of the former Gas Works area.

- Thirty-six out of 38 groundwater samples collected did not exhibit levels of free cyanide greater than the CRDL of 20 ug/l. The highest free cyanide concentration of 41.4 ug/l was observed in groundwater sample RPMW-12S. Monitoring well RPMW-12S is located in the southwest portion of the former Gas Works area by the former Above Ground Oil Tanks.

Ambient Air

- Only one of the four ambient air samples exhibited detectable levels of targeted compounds. Ambient air sample RPAA-01 exhibited m,p-xylene, o-xylene and toluene at concentrations of 3.8 ppbv, 1.3 ppbv and 2.8 ppbv, respectively. Ambient air sample RPAA-01 was collected within the three-story office building on the north side of the site. Naphthalene was not detected in ambient air sample RPAA-01.

Recommendations

- Additional soil borings are recommended to determine the areal extent of NAPL in the areas within and north of the former Gas Works and to determine if the presence of this NAPL is the result of migration from source areas located within the former Gas Works area.

- Additional deep borings are recommended in the vicinity of the former electric substation to fully define the vertical extent of NAPL in this area.

- An additional groundwater investigation is recommended within and immediately downgradient of the identified source areas. The investigation is necessary to fully characterize the nature and extent of BTEX and PAHs as well as NAPL in on-site groundwater.

6.2 Off-site Field Investigation Program

Surface Soil

- Total BTEX concentrations ranged from less than 0.001 mg/kg to 0.019 mg/kg in the 11 off-site surface soil samples. Total PAH concentrations ranged from 0.78 mg/kg to 91.24 mg/kg. Metals analysis indicates that all RCRA metals and cyanide were found to be generally within typical background concentrations for soil in the eastern United States. Total cyanide concentrations ranged from 0.15 mg/kg to 21.3 mg/kg. The highest total cyanide concentration was detected in surface soil sample RPSS-17 which is located within the New York City-owned Bulkhead property. In addition, none of the off-site surface soil samples exhibited detectable levels of total phenols. The highest BTEX and PAH concentrations in surface soil were observed in samples collected form the New York City-owned Bulkhead property.

Subsurface Soil

- Subsurface soil samples collected from soil borings RPSB-71, RPSB-90, RPSB-91, RPSB-94, RPSB-95, RPSB-02, RPSB-02A, RPSB-83, RPSB-IRM-02, RPSB-03, RPSB-04, RPSB-05 and RPSB-116 located downgradient of the site exhibited staining and/or naphthalene/hydrocarbon-like odors. Soil samples collected from borings RPSB-92 and RPSB-93 exhibited NAPL-saturated soil.

- Fourteen soil borings advanced to the south of the site along Rockaway Freeway exhibited staining and/or naphthalene/hydrocarbon-like odors.

- Recovered subsurface soil samples collected from soil borings to the east of the site along Beach 108th Street, including RPSB-98, RPSB-98A, RPSB-99 and RPSB-100 exhibited staining and/or naphthalene/hydrocarbon-like odors. However, odors described as sewer-like and/or solvent-like were observed in borings RPSB-61, RPSB-98A, RPSB-99 and RPSB-100. The sewer-like odors are likely related to the sewage treatment plant located to the east of Beach 108th Street..

- BTEX compounds were detected in 66 of the 127 off-site subsurface soil samples, with the highest total BTEX concentration of 2,790 mg/kg observed in soil sample RPSB-61 (10-12 feet). The boring log for this sample indicated solvent odors as well as PID measurements of greater than 2,000 ppm. Soil boring RPSB-61 is located on the northeast corner of the intersection of Beach 108th Street and Rockaway Freeway.

- PAH constituents were detected in 59 of the 127 subsurface soil samples collected from off-site locations. The highest total PAH concentration was 2,139.9 mg/kg, reported for soil sample RPSB-85 (36-38 feet). Soil boring RPSB-85 is located on the New York City-owned Bulkhead property.

- Metals analysis indicates that all RCRA metals were found to be generally within typical background concentrations for soil in the eastern United States. Total cyanide analysis indicates that in 102 of the 127 subsurface soil samples, cyanide was either not detected or was detected at concentrations below the CRDL of 1 mg/kg. The highest total cyanide concentration of 12.8 mg/kg was detected in soil sample RPSB-96 (4-6 feet). Soil boring RPSB-96 is located on the west side of Beach 108th Street.

- Total phenols and PCBs were not detected in any off-site soil samples. Pesticide analysis was conducted for two off-site subsurface soil samples collected from within 10 feet bgs. Pesticides were not detected above the CRDL in soil sample RPSB-01 (5-7 feet). Pesticides present in sample RPSB-62 (5-7 feet) included beta-BHC at a concentration of 0.007 mg/kg, and delta-BHC at a concentration of 0.0071 mg/kg.

- Based on BTEX/PAH data and observed soil staining, subsurface soil containing BTEX and PAH constituents extend beyond the southeast and southern property boundaries of the Rockaway Park site along Rockaway Freeway. In addition,

subsurface soil data collected from soil borings RPSB-92 and RPSB-114 indicate PAH constituents extend beyond the northern property boundary of the Rockaway Park site.

- Off-site subsurface soil located upgradient or south of the site on the south side of the MTA tracks is generally free of BTEX and PAH constituents.

Groundwater

- Off-site groundwater levels are strongly influenced by the cyclic tidal fluctuations of Jamaica Bay. As a result of these tidal influences, groundwater to the north of the site follows a southerly hydraulic gradient during periods of high tide. However, this appears to be a transient condition. The net groundwater flow throughout the majority of the site and off-site areas to the south is in a northerly direction towards Jamaica Bay. Groundwater in the eastern most portion of the site appears to flow in a more northeasterly direction during low and mid-tidal periods.

- Salinity, chloride, and groundwater TDS concentrations were shown to increase with increasing well depth. These concentrations approached that of sea water in the deep monitoring wells screened between 95 to 105 feet bgs. Consequently, the groundwater beneath the Rockaway Park site is brackish and is not suitable as a potable water supply. It should be noted that public water is supplied to the Rockaway area by a series of aqueducts from a watershed located 125 miles north of New York City, and not from local groundwater resources.

- Several off-site groundwater samples exhibited hydrocarbon/naphthalene/hydrogen sulfide-like odors but only groundwater collected in March 2000 from off-site monitoring wells RPMW-11S and 11D located downgradient or north of the site exhibited trace amounts of LNAPL. Groundwater measurements conducted in November 2001 did not indicate any measurable amounts of LNAPL in these monitoring wells.

- With the exception of a portion of the groundwater samples collected from off-site locations to the north and east of the site, concentrations of BTEX and PAHs in shallow groundwater are higher when compared to the intermediate and deep intervals. The maximum total BTEX concentration of 18,600 ug/l was observed in groundwater probe sample RPGP-06 (6 to 10 feet) located east or side-gradient to the site along Beach 108th Street, approximately 150 feet east of the former Drip Oil Tanks. The maximum total PAH concentration of 7,944 ug/l was observed in groundwater monitoring well RPMW-02I located downgradient or north of the site along Beach Channel Drive.

- Off-site migration of BTEX and PAHs is occurring in shallow groundwater to the east of the site. This is supported by data from monitoring well RPMW-17S and groundwater probes RPGP-05, RPGP-06 and RPGP-17. However, while BTEX does

not appear to be present, some off-site migration of PAHs does appear to be occurring in shallow groundwater to the north of the site as indicated by data from monitoring well RPMW-02S and groundwater probes RPGP-20, RPGP-22 and RPGP-23.

- Off-site migration of BTEX and PAHs is occurring in intermediate groundwater to the north and east of the site. The migration to the north is supported by data from monitoring wells RPMW-11I, RPMW-02I and groundwater probes RPGP-03, RPGP-20 and RPGP-23. Similarly, migration of BTEX and PAHs to the east is supported by data from monitoring well RPMW-17I and groundwater probes RPGP-05, and RPGP-06. However, total PAHs were only detected at concentrations of 14 ug/l and 83 ug/l in groundwater collected from RPMW-17I and RPGP-06, respectively.

- Based on groundwater data for off-site groundwater samples, BTEX and PAHs appear to be migrating off-site to the north in the deep groundwater zone. This is supported by data collected from monitoring well RPMW-02D. In addition, BTEX constituents appear to be migrating off-site to the east in the deep groundwater zone as indicated by data from monitoring well RPMW-17D.

- Groundwater samples collected upgradient or south of the site do not exhibit BTEX or PAH concentrations greater than 30 ug/l. This observation is generally consistent with off-site soil quality.

- BTEX and PAH concentrations in intermediate groundwater are generally higher than the shallow depth for sample locations (RPMW-02 and RPGP-03) along Beach Channel Drive. This observation, combined with the fact that groundwater to the south of the site is relatively free of BTEX and PAH constituents, supports the conclusion that the overall groundwater flow direction is to the north towards Jamaica Bay.

- Analysis of the 16 off-site groundwater samples identified the following five most commonly detected VOCs: 1,2,4-trimethylbenzene; isopropylbenzene; 1,3,5-trimethylbenzene; acetone and chloroform. The highest concentrations of 1,2,4-trimethylbenzene (250 ug/l), isopropylbenzene (85 ug/l), 1,3,5-trimethylbenzene (110 ug/l), acetone (84 ug/l), and chloroform (29 ug/l) were detected in groundwater samples RPMW-02I, RPMW-11I, RPMW-02I, RPMW-17I and RPMW-17D, respectively.

- Analysis of the 16 groundwater samples collected for full NYSDEC TCL SVOCs analysis identified the following five most commonly detected non-PAH SVOCs: bis(2-ethylhexyl)phthalate; carbazole; di-n-butylphthalate; diethylphthalate; and 2,4-dimethylphenol. The highest concentrations of bis(2-ethylhexyl)phthalate (12 ug/l), carbozole (27 ug/l), di-n-butylphthalate (12 ug/l), diethylphthalate (2 ug/l), and 2,4-dimethylphenol. (8 ug/l) were detected in groundwater samples RPMW-17D, RPMW-02I, RPMW-03D, RPMW-17D and RPMW-17D, respectively.

- Metals analysis indicates that all NYSDEC TAL metals are generally within concentration ranges that would be considered typical of ambient groundwater quality. However, anomalies to this general observation include maximum concentrations of the following metals: aluminum (3,590 ug/l); barium (150 ug/l); potassium (792,000 ug/l); and magnesium (541,000 ug/l). These metals were detected in monitoring wells RPMW-11D, RPMW-17I, RPMW-11D and RPMW-03I, respectively.

- The highest total cyanide concentration of 688 ug/l was observed in groundwater sample RPMW-01I. Monitoring well RPMW-01I is located downgradient approximately 80 feet north of the site along the north side of Beach Channel Drive. The next highest concentration of total cyanide of 537 ug/l was detected in sample RPMW-11S, which is located north of the site along the north side of Beach Channel Drive. The highest free cyanide concentration of 182 ug/l was observed in groundwater sample RPMW-11D. Monitoring well RPMW-11D is located downgradient approximately 80 feet north of the site along the north side of Beach Channel Drive. Therefore, off-site migration of total cyanide is occurring in shallow and intermediate groundwater to the north of the site.

Soil Vapor

- Analysis of the soil gas samples identified toluene at concentrations above detection limits within all of the samples. The maximum concentration for toluene of 470 ppbv was detected in sample RPSV-03, which was located along the north side of Beach Channel Drive, approximately 90 feet north of the substation. Other compounds detected in these samples include m,p-xylene (detected in 8 of 12 samples), o-xylene and benzene (both detected in 4 of 12 samples), and ethyl benzene (detected in 2 of 12 samples). Naphthalene was not detected in any of the 12 soil vapor samples collected. The presence of toluene in soil vapor samples RPSV-03 and RPSV-06 is generally consistent with BTEX concentrations detected from groundwater probes RPGP-03 and RPGP-06. However, RPSV-07 exhibited a toluene concentration of 440 ppbv, but groundwater data associated with RPGP-08 indicated groundwater within the area of soil probe RPSV-07 to be free of BTEX compounds. This data suggests that the migration of BTEX in soil vapor is minimal and is not considered a major transport mechanism.

- Soil vapor samples collected and analyzed as part of the Underground Feeder Cable Investigation exhibited detectable concentrations of total BTEX ranging from 1.5 ppbv to 342.8 ppbv at locations RPSV-17 and RPSV-20, respectively. Toluene was detected at all sample locations ranging from 1.4 ppbv to 98 ppbv at locations RPSV-18 to RPSV-20, respectively. Naphthalene was not detected in any of the nine soil vapor samples collected.

- Soil vapor samples collected and analyzed as part of the Transmission Cable Investigation exhibited detectable concentrations of total BTEX ranging from 7.5 ppbv to 25.6 ppbv at locations RPSV-23 and RPSV-22, respectively. Naphthalene was not detected in any of the three soil samples collected.

Recommendations

- Additional soil borings and groundwater probes are recommended to be advanced immediately east of the site to determine the horizontal and vertical extent of BTEX and PAH concentrations.

- An additional groundwater probe is recommended to be advanced immediately west of the site to determine the horizontal and vertical extent of BTEX concentrations.

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APPENDIX A

DATABASE SEARCH REPORTS

Toxics Targeting Computerized Environmental Report

109-11 Beach Channel Dr

Rockaway Park, NY 11694

August 10, 2000

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Introduction

Toxics Targeting has combined environmental database searches, extensive regulatory analysis and sophisticated mapping techniques to produce your *Computerized Environmental Report.* It checks for the presence of 17 categories of government-reported toxic sites and provides detailed, up-to-date information on each identified site. The findings of your report are presented in an easy-to-understand format that:

1. ***Maps*** the approximate locations of selected government-reported toxic sites identified on or near a specified target address.

2. ***Estimates*** the distance and direction between the target address and each identified toxic site.

3. ***Reports*** air and water permit non-compliance and other regulatory violations.

4. ***Profiles*** some aspects of the usage, manufacture, storage, handling, transport or disposal of toxic chemicals at individual sites.

5. ***Summarizes*** some potential health effect information and drinking water standards for selected chemicals reported at individual sites.

The Three Sections Of Your Report

The first section highlights your report's findings by summarizing identified sites according to: **a)** distance intervals, **b)** direction, **c)** proximity to the target address and **d)** individual site categories. In addition, the locations of all identified toxic sites are illustrated on individual maps for each radius search distance used in your report. Finally, a close-up map illustrates the locations of all identified toxic sites, at the shortest radius search distance used in your report.

The second section of your report contains *Toxic Site Profiles* that provide detailed information on each identified toxic site. The information in each *Toxic Site Profile* varies according to its source. Some toxic site categories have extensive information, some have limited information. All the information is updated on a regular basis.

The third section of the report contains appendices that identify: **1)** on-site spills reported to the national Emergency Response Notification System (ERNS), **2)** various toxic sites that cannot be mapped due to incomplete or erroneous addresses or other mapping problems, **3)** codes that characterize hazardous wastes reported at various facilities, **4)** methods used to map toxic sites identified in your report and **5)** information sources used in your report.

How to Use Your Report

- Check Table One to see the number of <u>identified sites by distance intervals</u>.

- Check Table Two to see identified sites sorted by <u>direction</u>.

- Check Table Three to see identified sites ranked by <u>proximity to the target address</u>.

- Check Table Four to see identified sites <u>sorted by site categories</u>.

- Refer to the various maps to see the locations of identified toxic sites. Refer to the *Toxic Site Profile* and *Appendix* sections for additional information.

Toxic Site Databases Analyzed In Your Report

Search Radius

One-Mile

1) ***New York Inactive Hazardous Waste Disposal Site Registry****:* a state listing of sites that can pose environmental or public health hazards requiring investigation or clean up.

One-Mile

2) ***CERCLIS*** (Comprehensive Environmental Response, Compensation and Liability Information System): a federal listing of sites that can pose environmental or public health hazards requiring investigation or clean up.

One-Mile

3) ***National Priority List for Federal Superfund Cleanup****:* a listing of sites known to pose environmental or health hazards that are being investigated or cleaned up under the Federal Superfund program.

One-Mile

4) ***New York Hazardous Substance Disposal Site Draft Study****:* a state listing of sites contaminated with toxic substances that can pose environmental or public health hazards. These sites are not eligible for state clean up funding programs.

One-Mile

5) ***New York Solid Waste Facilities Registry, including New York City 1934 Sites****:* active and inactive landfills, incinerators, transfer stations or other solid waste management facilities.

One-Mile

6) ***New York State Major Oil Storage Facilities****:* sites with more than a 400,000 gallon capacity for storing petroleum products.

One-Mile

7) ***New York and Federal Hazardous Waste Treatment, Storage or Disposal Facilities****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System.

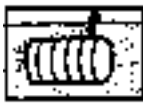
- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act.
- ***RCRIS corrective action activity (CORRACTS):*** waste facilities with RCRIS corrective action activity reported by the USEPA.

Half-Mile

8a) ***Toxic Spills: active*** stationary source spills reported to state environmental authorities, including unremediated leaking underground storage tanks.

Half-Mile

8b) ***Toxic Spills: closed*** stationary and non-stationary source spills reported to state authorities, including remediated leaking underground storage tanks.

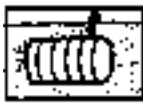
Quarter-Mile 

9) ***New York and Local Petroleum Bulk Storage Facilities****:* sites with more than an 1,100 gallon capacity for storing petroleum products.

Quarter-Mile

10) ***New York and Federal Hazardous Waste Generators and Transporters****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System.

- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act.
- ***RCRIS corrective action activity (CORRACTS):*** waste facilities with RCRIS corrective action activity reported by the USEPA.

Quarter-Mile 

11) ***New York Chemical Bulk Storage Facilities****:* Sites storing hazardous substances listed in 6 NYCRR Part 597 in aboveground tanks with capacities of 185 gallons or more and/or underground tanks of any size

Quarter-Mile

12) ***New York Toxic Release Inventory Facilities****:* discharges of selected toxic chemicals to air, land, water or treatment facilities.

Quarter-Mile

13) ***Historic New York City Utility Sites (1890's to 1940's)****:* power generating stations, manufactured gas plants, gas storage facilities, maintenance yards and other gas and electric utility sites.

Quarter-Mile

14) ***Air Discharges****:* Air pollution point sources monitored by U.S. EPA and/or state and local air regulatory agencies.

Quarter-Mile

15) ***Federal Permit Compliance System Toxic Wastewater Discharges****:* permitted toxic wastewater discharges.

Quarter-Mile

16) ***Federal Civil Enforcement Docket****:* civil judiciary cases filed on behalf of the U. S. Environmental Protection Agency by the Department of Justice.

Property only

17) ***ERNS: Federal Emergency Response Notification System Spills****:* a listing of federally reported spills.

Limitations Of The Information In Your Report

The information presented in your *Computerized Environmental Report* has been obtained from various local, state and federal government agencies. Please be aware that: **1)** additional information on individual sites may be available, **2)** newly discovered sites are continually reported and **3)** all map locations are approximate. As a result, this report is intended to be the FIRST STEP in the process of identifying and evaluating possible environmental threats to specific properties and can only serve as a guide for conducting on-site visits or additional, more detailed toxic hazard research.

Toxics Targeting tries to ensure that the information in your report is presented accurately and with minimal alteration. The only systematic changes that are made correct obvious address errors in order to allow sites to be mapped. Any address changes that are made are noted in the map information section at the top of each corresponding *Toxic Site Profile*. Since the information presented in your report is not edited, please be aware that it can contain reporting errors or typographical mistakes made by the site owners/operators or government agencies that produced the information. Please be aware of some other limitations of the information in your report:

- The computerized map used by *Toxics Targeting* is the same one used by the U. S. Census. While the map is generally accurate, no map is perfect. In addition, *Toxics Targeting's* mapping methods estimate where toxic site addresses are located if the address is not specifically designated on the Census map. FOR THESE REASONS, ALL MAP LOCATIONS OF ADDRESSES AND REPORTED TOXIC SITES SHOULD BE CONSIDERED APPROXIMATE AND SHOULD BE VERIFIED BY ON-SITE VISITS;

- UNDISCOVERED, UNREPORTED OR UNMAPPABLE TOXIC SITES MIGHT NOT BE IDENTIFIED BY THIS REPORT'S CHECK OF 17 TOXIC SITE CATEGORIES. TOXIC SITES REPORTED IN OTHER GOVERNMENT DATABASES MIGHT ALSO EXIST. FOR THESE REASONS, YOUR REPORT MIGHT NOT IDENTIFY ALL THE TOXIC SITES THAT EXIST IN THE AREA IT SEARCHES;

- The appendix of your report contains a listing of sites that could not be mapped due to incomplete or erroneous address information or other mapping problems. This listing includes unmappable toxic sites in zip code areas within one mile of the target address as well as toxic sites without zip codes reported in the same county. IF YOU WOULD LIKE INFORMATION ON ANY OF THE LISTED SITES, PLEASE CONTACT *TOXICS TARGETING AND REFER TO THE SITE ID NUMBER.*

- Some toxic sites identified in your report may be classified as **known hazards**. Most of the toxic sites identified in your report involve **potential hazards** related to the on-site use, manufacture, handling, storage, transport or disposal of toxic chemicals. <u>Some of the toxic sites identified in your report may be the addresses of parties responsible for toxic sites located elsewhere</u>. YOU SHOULD ONLY CONCLUDE THAT TOXIC HAZARDS ACTUALLY EXIST AT A SPECIFIC SITE WHEN GOVERNMENT AUTHORITIES MAKE THAT DETERMINATION OR WHEN THAT CONCLUSION IS FULLY DOCUMENTED BY THE FINDINGS OF AN APPROPRIATE SITE INVESTIGATION UNDERTAKEN BY LICENSED PROFESSIONALS;

- Compass directions and distances are approximate. Compass directions are calculated from the subject property address to the mapped location of each identified toxic site. The compass direction does not necessarily refer to the closest property boundary of an identified toxic site. The compass direction also can vary substantially for toxic sites that are located very close to the subject property address.

- The information presented in your report is a summary of the information that *Toxics Targeting* obtains from government agencies on reported toxic sites. YOU MAY BE ABLE TO OBTAIN ADDITIONAL INFORMATION ABOUT REPORTED SITES WITH THE FREEDOM OF INFORMATION REQUEST FORM LETTERS THAT ARE PROVIDED ON THE INSIDE OF THE BACK COVER.

Section One:

Report Summary

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- *Table Three:* *Identified Toxic Sites Ranked By Proximity*
- *Table Four:* *Identified Toxic Sites By Category*
- *Map One:* *One-Mile Radius Analysis*
- *Map Two:* *Half-Mile Radius Analysis*
- *Map Three:* *Quarter-Mile Radius Analysis*
- *Map Four:* *Quarter-Mile Radius Close up Analysis*

NUMBER OF IDENTIFIED SITES BY DISTANCE INTERVAL

Database Searched	0 - 100 ft	100 ft - 1/8 mi	1/8 mi - 1/4 mi	1/4 mi - 1/2 mi	1/2 mi - 1 mi	Site(s) Category Totals
NYS Inactive Hazardous Waste Disposal Sites *	0	1	0	0	0	1
CERCLIS Sites *	0	1	0	0	0	1
National Priority List Sites *	0	0	0	0	0	0
Hazardous Substance Waste Disposal Sites *	1	0	0	0	0	1
NYS Solid Waste Facilities *	0	0	0	0	0	0
NYS Major Oil Storage Facilities *	0	0	0	0	0	0
RCRA Hazardous Waste Treatment, Storage, Disposal Sites *	0	0	0	0	0	0
NYS Toxic Spills (incl. Leaking Undrgrnd Storage Tanks) **	0	5	15	16(14)	Not searched	36(14)
Local & State Petroleum Bulk Storage Sites ***	0	2	8	Not searched	Not searched	10
RCRA Hazardous Waste Generators & Transporters ***	2	4	7	Not searched	Not searched	13
NYS Chemical Bulk Storage Sites ***	0	0	1	Not searched	Not searched	1
Toxic Release Inventory Sites (TRI) ***	0	0	0	Not searched	Not searched	0
Historic Utility Facilities ***	2	0	0	Not searched	Not searched	2
Permit Compliance System Toxic Wastewater Discharges ***	0	0	1	Not searched	Not searched	1
NYS Air Discharges ***	0	1	0	Not searched	Not searched	1
Civil Enforcement Docket Facilities ***	0	0	0	Not searched	Not searched	0
ERNS (Onsite) *****	0	Not searched	Not searched	Not searched	Not searched	0
Distance Interval Totals	5	14	32	16(14)	0	67(14)

Search Radius: * 1 Mile Search Radius ** 1/2 Mile Search Radius *** 1/4 Mile Search Radius **** 1/8 Mile Search Radius ***** on-site only

Numbers in ( ) indicate spills not mapped and profiled, and are found in the tables at the end of the active and closed spills sections.
See these tables for a description of the parameters involved with identifying these spills.

Identified Toxic Sites by Direction

109-11 Beach Channel Dr
Rockaway Park, NY 11694

* Compass directions can vary substantially for sites located very close to the subject property address.

Sites less than 100 feet from subject property sorted by distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
1	LILCO - ROCKAWAY PARK	BEACH CHANNEL DRIVE & BEACH 108TH STREET	0 feet	NYSDEC Inactive Haz Waste Site
65			0 feet	Historic Utility Site
66			0 feet	Historic Utility Site
51	LILCO FAR ROCKAWAY GAS SERVICE BUILDING	BEACH CHANNEL DRIVE	0 feet	Hazardous Waste Generator/Transporter
52	NYCTA	10911 BEACH CHANNEL DRIVE	0 feet	Hazardous Waste Generator/Transporter
3	LILCO, ROCKAWAY GAS PLANT	BEACH 108TH STREET	0 feet	Hazardous Substance Waste Disposal Site

Sites between 100 ft and 660 ft from the subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
12	110 TH ST &	BEACH CHANNEL	377 feet to the N	Active Haz Spill (Unknown/Other Cause)
2	ROCKAWAY PARK GAS PLANT	ROCKAWAY PARK	378 feet to the NNE	CERCLIS Site
4	LILCO, ROCKAWAY GAS PLANT	BEACH 108TH STREET	378 feet to the NNE	Hazardous Substance Waste Disposal Site
56	ROCKAWAY WPCP-MANHOLE	W SIDE BEACH 108 ST	644 feet to the ENE	Hazardous Waste Generator/Transporter
41	P.S. 225	190 BEACH 110TH STREET	498 feet to the SE	Petroleum Bulk Storage Site
53	NYC BOARD OF EDUCATION	190 BEACH 110TH STREET	498 feet to the SE	Hazardous Waste Generator/Transporter
19		109-38 ROCKAWAY BEACH BLV	390 feet to the SSE	Active Haz Spill (Misc. Spill Cause)
55	NYNEX	BEACH 112TH STR & ROCKAWAY BCH	603 feet to the SSW	Hazardous Waste Generator/Transporter
9	112-01 BEACH CHANNEL/QNS	112001 BEACH CHANNEL	585 feet to the WNW	Active Tank Test Failure
31	112-01 BEACH CHANNEL	112-01 BEACH CHANNEL	585 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
68	MOBIL	112-01 BEACH CHANNEL	585 feet to the WNW	Air Discharge Site
42	MOBIL S/S # 17-HKT	112-01 BEACH CHANNEL DRIVE	589 feet to the WNW	Petroleum Bulk Storage Site
54	MOBIL OIL CORP SS HKT	112-01 BEACH CHANNEL DR	589 feet to the WNW	Hazardous Waste Generator/Transporter
30	110TH&112TH BCH CHANNELDR	110TH&112TH BCH CHANNELDR	409 feet to the NW	Closed Status Spill (Misc. Spill Cause)

Sites equal to or greater than 660 ft from subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category

34	108TH ST& BCH CHANNEL DR	108TH ST&BCH CHANNEL DR	731 feet to the NE	Closed Status Spill (Misc. Spill Cause)
62	ROCKAWAY WPCP	BEACH CHANNEL DR & 106 ST	1180 feet to the ENE	Hazardous Waste Generator/Transporter
14	DEP ROCKAWAY WATER PLANT	106-21 BEACH CHANNEL DR	1182 feet to the ENE	Active Haz Spill (Unknown/Other Cause)
38	ROCKAWAY SEWAGE PLANT	106-21 BEACH CHANNEL DRIV	1182 feet to the ENE	Closed Status Spill (Misc. Spill Cause)
48	ROCKAWAY POLLUTION CONTROL PLANT	BEACH CHANNEL DRIVE / BEACH 106TH ST	1182 feet to the ENE	Petroleum Bulk Storage Site
67	ROCKAWAY WTP	BEACH CHANNEL DRIVE & 106TH ST	1184 feet to the ENE	Wastewater Discharge Facility
63	DEP ROCKAWAY WATER CONTROL POLL PLANT	106-21 BEACH CHANNEL DRIVE	1189 feet to the ENE	Hazardous Waste Generator/Transporter
64	ROCKAWAY WATER POLLUTION CONTROL PLANT	BEACH CHANNEL DRIVE & 106 STREET	1189 feet to the ENE	Chemical Bulk Storage Facility
25	ROCKAWAY BEACH/QUEENS	ROCKAWAY BCH/104 & 108 ST	1366 feet to the E	Closed Status Spill (Unk/Other Cause)
10	107-10 SHOREFRONT PKWY	107-10 SHOREFRONT PKWY	1295 feet to the SE	Active Tank Test Failure
40	107-10 SHORE FRONT PKWY	107-10 SHORE FRONT PKWY	1295 feet to the SE	Closed Status Spill (Misc. Spill Cause)
50	SURFSIDE PARK #1	107-10 SHORE FRONT PKWY	1312 feet to the SE	Petroleum Bulk Storage Site
44	ST. JOHNS HOME FOR BOYS	150 BEACH 110TH STREET	799 feet to the SSE	Petroleum Bulk Storage Site
47	ST JOHN'S HOME FOR BOYS	144 BEACH 111TH STREET	984 feet to the SSE	Petroleum Bulk Storage Site
27	110TH ST BEACH/QUEENS	110TH STREET BEACH	1518 feet to the SSE	Closed Status Spill (Unk/Other Cause)
45	STELLA MARIS HIGH SCHOOL	BEACH 112TH STREET	921 feet to the S	Petroleum Bulk Storage Site
22	111-14 BEACH 112TH ST./ST	111-14 BEACH 112TH ST.	1235 feet to the S	Closed Status Tank Test Failure
49	OCEAN PROMENADE NURSING CENTER, INC.	140 BEACH 113TH ST	1218 feet to the SSW	Petroleum Bulk Storage Site
28	116 116 STREET	116 116 STREET	1747 feet to the SSW	Closed Status Spill (Unk/Other Cause)
60	NYNEX	ROCKAWAY BEACH BLVD AND 114TH	1037 feet to the SW	Hazardous Waste Generator/Transporter
8		180 BEECH 117 TH ST	1808 feet to the SW	Active Tank Failure
11	1ST ROCKAWAY COAST CORP	131 BEACH 119TH ST	2460 feet to the SW	Active Tank Test Failure
20	245 BEACH 117TH ST.	245 BEACH 117TH ST.	1812 feet to the WSW	Closed Status Tank Failure
16	246 118TH STREET	246 118TH STREET	2006 feet to the WSW	Active Haz Spill (Unknown/Other Cause)
29	ROCKAWAY PARK 119TH ST	ROCKAWAY PARK 119TH ST	2279 feet to the WSW	Closed Status Spill (Unk/Other Cause)
21	241 BEACH 119TH ST	241 BEACH 119TH ST	2310 feet to the WSW	Closed Status Tank Failure
17	COMMERCIAL BUILDING	120-10 ROCKAWAY BEACH BVD	2575 feet to the WSW	Active Haz Spill (Unknown/Other Cause)
18		120-10 ROCKAWAY BCH BLVD	2575 feet to the WSW	Active Haz Spill (Unknown/Other Cause)
57	HARBOR AUTO BODY INC	112-16 BEACH CHANNEL DR	737 feet to the W	Hazardous Waste Generator/Transporter
35	BEACH CHNL RD & BEACH 113	BEACH CHNL RD & BEACH 113	825 feet to the W	Closed Status Spill (Misc. Spill Cause)
36	BCH 113TH ST & BCH CH DR	BCH 113TH ST & BCH CH DR	825 feet to the W	Closed Status Spill (Misc. Spill Cause)
46	113-10 BEACH CHANNEL DRIVE	113-10 BEACH CHANNEL DR.	929 feet to the W	Petroleum Bulk Storage Site
58	SUNOCO SERVICE STATION	113-10 BEACH CHANNEL DR	929 feet to the W	Hazardous Waste Generator/Transporter
59	BELL BOY CLEANERS	113-13 BEACH CHANNEL DRIVE	929 feet to the W	Hazardous Waste Generator/Transporter
5	GASETERIA	113-10 BEACH CHANNEL DR	931 feet to the W	Active Tank Failure
37	JOES CORP. / ROCKAWAY PAR	113-10 BEACH CHANNEL DR.	931 feet to the W	Closed Status Spill (Misc. Spill Cause)
61	CHANNEL CLEANERS	114-11 BEACH CHANNEL	1172 feet to the W	Hazardous Waste Generator/Transporter
39		114-10 BEACH CHANNEL DR	1198 feet to the W	Closed Status Spill (Misc. Spill Cause)
6	115-05 BEACH CHANNEL DR	115-05 BEACH CHANNEL DRIV	1338 feet to the W	Active Tank Failure
7	OLD EXXON STATION	115-05 BEACH CHANNEL DR	1338 feet to the W	Active Tank Failure
15	EXXON STATION	115-05 BEACH CHANNEL DR	1338 feet to the W	Active Haz Spill (Unknown/Other Cause)
23	115-05 BEACH CHANNEL DR./	115-05 BCH. CHANNEL DR.	1338 feet to the W	Closed Status Tank Test Failure
26	AMOCO GAS STATION	116TH ST/BEACH CHANEL DR	1399 feet to the W	Closed Status Spill (Unk/Other Cause)

43	112-10 BEACH CHANNEL DRIVE INCORPORATED	112-10 BEACH CHANNEL DRIVE	694 feet to the WNW	Petroleum Bulk Storage Site
13	112-10 BEACH CHANNEL DR	112010 BEACH CHANNEL DR	698 feet to the WNW	Active Haz Spill (Unknown/Other Cause)
24	112-10 BEACH CHANNEL DR	112010 BEACH CHANNEL DR	698 feet to the WNW	Closed Status Spill (Unk/Other Cause)
32	112-10 BEACH CHANNEL DR.	112-10 BEACH CHANNEL DR	698 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
33	112-10 BEACH CHANNEL	112-10 BEACH CHANNEL	701 feet to the WNW	Closed Status Spill (Misc. Spill Cause)

Identified Toxic Sites by Proximity

109-11 Beach Channel Dr, Rockaway Park, NY 11694

* Compass directions can vary substantially for sites located very close to the subject property address.

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
1	LILCO - ROCKAWAY PARK	BEACH CHANNEL DRIVE & BEACH 108TH STREET	0 feet	NYSDEC Inactive Haz Waste Site
65			0 feet	Historic Utility Site
66			0 feet	Historic Utility Site
51	LILCO FAR ROCKAWAY GAS SERVICE BUILDING	BEACH CHANNEL DRIVE	0 feet	Hazardous Waste Generator/Transporter
52	NYCTA	10911 BEACH CHANNEL DRIVE	0 feet	Hazardous Waste Generator/Transporter
3	LILCO, ROCKAWAY GAS PLANT	BEACH 108TH STREET	0 feet	Hazardous Substance Waste Disposal Site
12	110 TH ST &	BEACH CHANNEL	377 feet to the N	Active Haz Spill (Unknown/Other Cause)
2	ROCKAWAY PARK GAS PLANT	ROCKAWAY PARK	378 feet to the NNE	CERCLIS Site
4	LILCO, ROCKAWAY GAS PLANT	BEACH 108TH STREET	378 feet to the NNE	Hazardous Substance Waste Disposal Site
19		109-38 ROCKAWAY BEACH BLV	390 feet to the SSE	Active Haz Spill (Misc. Spill Cause)
30	110TH&112TH BCH CHANNELDR	110TH&112TH BCH CHANNELDR	409 feet to the NW	Closed Status Spill (Misc. Spill Cause)
41	P.S. 225	190 BEACH 110TH STREET	498 feet to the SE	Petroleum Bulk Storage Site
53	NYC BOARD OF EDUCATION	190 BEACH 110TH STREET	498 feet to the SE	Hazardous Waste Generator/Transporter
9	112-01 BEACH CHANNEL/QNS	112001 BEACH CHANNEL	585 feet to the WNW	Active Tank Test Failure
31	112-01 BEACH CHANNEL	112-01 BEACH CHANNEL	585 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
68	MOBIL	112-01 BEACH CHANNEL	585 feet to the WNW	Air Discharge Site
42	MOBIL S/S # 17-HKT	112-01 BEACH CHANNEL DRIVE	589 feet to the WNW	Petroleum Bulk Storage Site
54	MOBIL OIL CORP SS HKT	112-01 BEACH CHANNEL DR	589 feet to the WNW	Hazardous Waste Generator/Transporter
55	NYNEX	BEACH 112TH STR & ROCKAWAY BCH	603 feet to the SSW	Hazardous Waste Generator/Transporter
56	ROCKAWAY WPCP-MANHOLE	W SIDE BEACH 108 ST	644 feet to the ENE	Hazardous Waste Generator/Transporter
43	112-10 BEACH CHANNEL DRIVE INCORPORATED (112-10	112-10 BEACH CHANNEL DRIVE	694 feet to the WNW	Petroleum Bulk Storage Site
13	112-10 BEACH CHANNEL DR	112010 BEACH CHANNEL DR	698 feet to the WNW	Active Haz Spill (Unknown/Other Cause)
24	112-10 BEACH CHANNEL DR	112010 BEACH CHANNEL DR	698 feet to the WNW	Closed Status Spill (Unk/Other Cause)
32	112-10 BEACH CHANNEL DR.	112-10 BEACH CHANNEL DR	698 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
33	112-10 BEACH CHANNEL	112-10 BEACH CHANNEL	701 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
34	108TH ST& BCH CHANNEL DR	108TH ST&BCH CHANNEL DR	731 feet to the NE	Closed Status Spill (Misc. Spill Cause)
57	HARBOR AUTO BODY INC	112-16 BEACH CHANNEL DR	737 feet to the W	Hazardous Waste Generator/Transporter
44	ST. JOHNS HOME FOR BOYS	150 BEACH 110TH STREET	799 feet to the SSE	Petroleum Bulk Storage Site
35	BEACH CHNL RD & BEACH 113	BEACH CHNL RD & BEACH 113	825 feet to the W	Closed Status Spill (Misc. Spill Cause)
36	BCH 113TH ST & BCH CH DR	BCH 113TH ST & BCH CH DR	825 feet to the W	Closed Status Spill (Misc. Spill Cause)
45	STELLA MARIS HIGH SCHOOL	BEACH 112TH STREET	921 feet to the S	Petroleum Bulk Storage Site
46	113-10 BEACH CHANNEL DRIVE	113-10 BEACH CHANNEL DR.	929 feet to the W	Petroleum Bulk Storage Site
58	SUNOCO SERVICE STATION	113-10 BEACH CHANNEL DR	929 feet to the W	Hazardous Waste Generator/Transporter
59	BELL BOY CLEANERS	113-13 BEACH CHANNEL DRIVE	929 feet to the W	Hazardous Waste Generator/Transporter
5	GASETERIA	113-10 BEACH CHANNEL DR	931 feet to the W	Active Tank Failure
37	JOES CORP. / ROCKAWAY PAR	113-10 BEACH CHANNEL DR.	931 feet to the W	Closed Status Spill (Misc. Spill Cause)
47	ST JOHN'S HOME FOR BOYS	144 BEACH 111TH STREET	984 feet to the SSE	Petroleum Bulk Storage Site
60	NYNEX	ROCKAWAY BEACH BLVD AND 114TH	1037 feet to the SW	Hazardous Waste Generator/Transporter
61	CHANNEL CLEANERS	114-11 BEACH CHANNEL	1172 feet to the W	Hazardous Waste Generator/Transporter
62	ROCKAWAY WPCP	BEACH CHANNEL DR & 106 ST	1180 feet to the ENE	Hazardous Waste Generator/Transporter
14	DEP ROCKAWAY WATER PLANT	106-21 BEACH CHANNEL DR	1182 feet to the ENE	Active Haz Spill (Unknown/Other Cause)
38	ROCKAWAY SEWAGE PLANT	106-21 BEACH CHANNEL DRIV	1182 feet to the ENE	Closed Status Spill (Misc. Spill Cause)
48	ROCKAWAY POLLUTION CONTROL PLANT	BEACH CHANNEL DRIVE / BEACH 106TH ST	1182 feet to the ENE	Petroleum Bulk Storage Site
67	ROCKAWAY WTP	BEACH CHANNEL DRIVE & 106TH ST	1184 feet to the ENE	Wastewater Discharge Facility
63	DEP ROCKAWAY WATER CONTROL POLL PLANT	106-21 BEACH CHANNEL DRIVE	1189 feet to the ENE	Hazardous Waste Generator/Transporter

64	ROCKAWAY WATER POLLUTION CONTROL PLANT	BEACH CHANNEL DRIVE & 106 STREET	1189 feet to the ENE	Chemical Bulk Storage Facility
39		114-10 BEACH CHANNEL DR	1198 feet to the W	Closed Status Spill (Misc. Spill Cause)
49	OCEAN PROMENADE NURSING CENTER, INC.	140 BEACH 113TH ST	1218 feet to the SSW	Petroleum Bulk Storage Site
22	111-14 BEACH 112TH ST./ST	111-14 BEACH 112TH ST.	1235 feet to the S	Closed Status Tank Test Failure
10	107-10 SHOREFRONT PKWY	107-10 SHOREFRONT PKWY	1295 feet to the SE	Active Tank Test Failure
40	107-10 SHORE FRONT PKWY	107-10 SHORE FRONT PKWY	1295 feet to the SE	Closed Status Spill (Misc. Spill Cause)
50	SURFSIDE PARK #1	107-10 SHORE FRONT PKWY	1312 feet to the SE	Petroleum Bulk Storage Site
6	115-05 BEACH CHANNEL DR	115-05 BEACH CHANNEL DRIV	1338 feet to the W	Active Tank Failure
7	OLD EXXON STATION	115-05 BEACH CHANNEL DR	1338 feet to the W	Active Tank Failure
15	EXXON STATION	115-05 BEACH CHANNEL DR	1338 feet to the W	Active Haz Spill (Unknown/Other Cause)
23	115-05 BEACH CHANNEL DR./	115-05 BCH. CHANNEL DR.	1338 feet to the W	Closed Status Tank Test Failure
25	ROCKAWAY BEACH/QUEENS	ROCKAWAY BCH/104 & 108 ST	1366 feet to the E	Closed Status Spill (Unk/Other Cause)
26	AMOCO GAS STATION	116TH ST/BEACH CHANEL DR	1399 feet to the W	Closed Status Spill (Unk/Other Cause)
27	110TH ST BEACH/QUEENS	110TH STREET BEACH	1518 feet to the SSE	Closed Status Spill (Unk/Other Cause)
28	116 116 STREET	116 116 STREET	1747 feet to the SSW	Closed Status Spill (Unk/Other Cause)
8		180 BEECH 117 TH ST	1808 feet to the SW	Active Tank Failure
20	245 BEACH 117TH ST.	245 BEACH 117TH ST.	1812 feet to the WSW	Closed Status Tank Failure
16	246 118TH STREET	246 118TH STREET	2006 feet to the WSW	Active Haz Spill (Unknown/Other Cause)
29	ROCKAWAY PARK 119TH ST	ROCKAWAY PARK 119TH ST	2279 feet to the WSW	Closed Status Spill (Unk/Other Cause)
21	241 BEACH 119TH ST	241 BEACH 119TH ST	2310 feet to the WSW	Closed Status Tank Failure
11	1ST ROCKAWAY COAST CORP	131 BEACH 119TH ST	2460 feet to the SW	Active Tank Test Failure
17	COMMERCIAL BUILDING	120-10 ROCKAWAY BEACH BVD	2575 feet to the WSW	Active Haz Spill (Unknown/Other Cause)
18		120-10 ROCKAWAY BCH BLVD	2575 feet to the WSW	Active Haz Spill (Unknown/Other Cause)

Identified Toxic Sites by Category

109-11 Beach Channel Dr
Rockaway Park, NY 11694

* Compass directions can vary substantially for sites located very close to the subject property address.

NYSDEC Inactive Hazardous Waste Sites

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
1	LILCO - ROCKAWAY PARK	BEACH CHANNEL DRIVE & BEACH 108TH STREET	0 feet

CERCLIS Sites

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
2	ROCKAWAY PARK GAS PLANT	ROCKAWAY PARK	378 feet to the NNE

Hazardous Substance Waste Disposal Sites

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
3	LILCO, ROCKAWAY GAS PLANT	BEACH 108TH STREET	0 feet
4	LILCO, ROCKAWAY GAS PLANT	BEACH 108TH STREET	378 feet to the NNE

Active Tank Failures

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
5	GASETERIA	113-10 BEACH CHANNEL DR	931 feet to the W
6	115-05 BEACH CHANNEL DR	115-05 BEACH CHANNEL DRIV	1338 feet to the W
7	OLD EXXON STATION	115-05 BEACH CHANNEL DR	1338 feet to the W
8		180 BEECH 117 TH ST	1808 feet to the SW

Active Tank Test Failures

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
9	112-01 BEACH CHANNEL/QNS	112001 BEACH CHANNEL	585 feet to the WNW
10	107-10 SHOREFRONT PKWY	107-10 SHOREFRONT PKWY	1295 feet to the SE
11	1ST ROCKAWAY COAST CORP	131 BEACH 119TH ST	2460 feet to the SW

Active Haz Spills (Unknown Causes & Other Causes)

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
12	110 TH ST &	BEACH CHANNEL	377 feet to the N
13	112-10 BEACH CHANNEL DR	112010 BEACH CHANNEL DR	698 feet to the WNW
14	DEP ROCKAWAY WATER PLANT	106-21 BEACH CHANNEL DR	1182 feet to the ENE
15	EXXON STATION	115-05 BEACH CHANNEL DR	1338 feet to the W
16	246 118TH STREET	246 118TH STREET	2006 feet to the WSW
17	COMMERCIAL BUILDING	120-10 ROCKAWAY BEACH BVD	2575 feet to the WSW
18		120-10 ROCKAWAY BCH BLVD	2575 feet to the WSW

Active Haz Spills (Miscellaneous Spill Causes)

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
19		109-38 ROCKAWAY BEACH BLV	390 feet to the SSE

Closed Status Tank Failures

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
20	245 BEACH 117TH ST.	245 BEACH 117TH ST.	1812 feet to the WSW
21	241 BEACH 119TH ST	241 BEACH 119TH ST	2310 feet to the WSW

Closed Status Tank Test Failures

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
22	111-14 BEACH 112TH ST./ST	111-14 BEACH 112TH ST.	1235 feet to the S
23	115-05 BEACH CHANNEL DR./	115-05 BCH. CHANNEL DR.	1338 feet to the W

Closed Status Spills (Unknown Causes & Other Causes)

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
24	112-10 BEACH CHANNEL DR	112010 BEACH CHANNEL DR	698 feet to the WNW
25	ROCKAWAY BEACH/QUEENS	ROCKAWAY BCH/104 & 108 ST	1366 feet to the E
26	AMOCO GAS STATION	116TH ST/BEACH CHANEL DR	1399 feet to the W
27	110TH ST BEACH/QUEENS	110TH STREET BEACH	1518 feet to the SSE
28	116 116 STREET	116 116 STREET	1747 feet to the SSW
29	ROCKAWAY PARK 119TH ST	ROCKAWAY PARK 119TH ST	2279 feet to the WSW

Closed Status Spills (Miscellaneous Spill Causes)

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
30	110TH&112TH BCH CHANNELDR	110TH&112TH BCH CHANNELDR	409 feet to the NW
31	112-01 BEACH CHANNEL	112-01 BEACH CHANNEL	585 feet to the WNW
32	112-10 BEACH CHANNEL DR.	112-10 BEACH CHANNEL DR	698 feet to the WNW
33	112-10 BEACH CHANNEL	112-10 BEACH CHANNEL	701 feet to the WNW
34	108TH ST& BCH CHANNEL DR	108TH ST&BCH CHANNEL DR	731 feet to the NE
35	BEACH CHNL RD & BEACH 113	BEACH CHNL RD & BEACH 113	825 feet to the W

36	BCH 113TH ST & BCH CH DR	BCH 113TH ST & BCH CH DR	825 feet to the W
37	JOES CORP. / ROCKAWAY PAR	113-10 BEACH CHANNEL DR.	931 feet to the W
38	ROCKAWAY SEWAGE PLANT	106-21 BEACH CHANNEL DRIV	1182 feet to the ENE
39		114-10 BEACH CHANNEL DR	1198 feet to the W
40	107-10 SHORE FRONT PKWY	107-10 SHORE FRONT PKWY	1295 feet to the SE

Petroleum Bulk Storage Sites

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
41	P.S. 225	190 BEACH 110TH STREET	498 feet to the SE
42	MOBIL S/S # 17-HKT	112-01 BEACH CHANNEL DRIVE	589 feet to the WNW
43	112-10 BEACH CHANNEL DRIVE INCORPORATED	112-10 BEACH CHANNEL DRIVE	694 feet to the WNW
44	ST. JOHNS HOME FOR BOYS	150 BEACH 110TH STREET	799 feet to the SSE
45	STELLA MARIS HIGH SCHOOL	BEACH 112TH STREET	921 feet to the S
46	113-10 BEACH CHANNEL DRIVE	113-10 BEACH CHANNEL DR.	929 feet to the W
47	ST JOHN'S HOME FOR BOYS	144 BEACH 111TH STREET	984 feet to the SSE
48	ROCKAWAY POLLUTION CONTROL PLANT	BEACH CHANNEL DRIVE / BEACH 106TH ST	1182 feet to the ENE
49	OCEAN PROMENADE NURSING CENTER, INC.	140 BEACH 113TH ST	1218 feet to the SSW
50	SURFSIDE PARK #1	107-10 SHORE FRONT PKWY	1312 feet to the SE

Hazardous Waste Generators, Transporters

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
51	LILCO FAR ROCKAWAY GAS SERVICE BUILDING	BEACH CHANNEL DRIVE	0 feet
52	NYCTA	10911 BEACH CHANNEL DRIVE	0 feet
53	NYC BOARD OF EDUCATION	190 BEACH 110TH STREET	498 feet to the SE
54	MOBIL OIL CORP SS HKT	112-01 BEACH CHANNEL DR	589 feet to the WNW
55	NYNEX	BEACH 112TH STR & ROCKAWAY BCH	603 feet to the SSW
56	ROCKAWAY WPCP-MANHOLE	W SIDE BEACH 108 ST	644 feet to the ENE
57	HARBOR AUTO BODY INC	112-16 BEACH CHANNEL DR	737 feet to the W
58	SUNOCO SERVICE STATION	113-10 BEACH CHANNEL DR	929 feet to the W
59	BELL BOY CLEANERS	113-13 BEACH CHANNEL DRIVE	929 feet to the W
60	NYNEX	ROCKAWAY BEACH BLVD AND 114TH	1037 feet to the SW
61	CHANNEL CLEANERS	114-11 BEACH CHANNEL	1172 feet to the W
62	ROCKAWAY WPCP	BEACH CHANNEL DR & 106 ST	1180 feet to the ENE
63	DEP ROCKAWAY WATER CONTROL POLL PLANT	106-21 BEACH CHANNEL DRIVE	1189 feet to the ENE

Chemical Bulk Storage Facilities

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
64	ROCKAWAY WATER POLLUTION CONTROL PLANT	BEACH CHANNEL DRIVE & 106 STREET	1189 feet to the ENE

Historic Utility Sites

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
65			0 feet
66			0 feet

Wastewater Discharge Facilities

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
67	ROCKAWAY WTP	BEACH CHANNEL DRIVE & 106TH ST	1184 feet to the ENE

Air Discharge Sites

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
68	MOBIL	112-01 BEACH CHANNEL	585 feet to the WNW

Toxics Targeting
1 Mile Radius Map

109-11 Beach Channel Dr

Rockaway Park, NY 11694

Queens County

- NPL/CERCLIS/NYSDEC Inactive Hazardous Waste Disposal Site
- Hazardous Waste Treater, Storer, Disposer
- Hazardous Substance Waste Disposal Site
- Solid Waste Facility
- Major Oil Storage Facility

- Site Location
- Waterbody
- Minor Roads
- Major Roads
- County Border
- Expressways
- Railroad Tracks
- 1 Mile Radius
- 1/2 Mile Radius
- 1/4 Mile Radius
- 1/8 Mile Radius

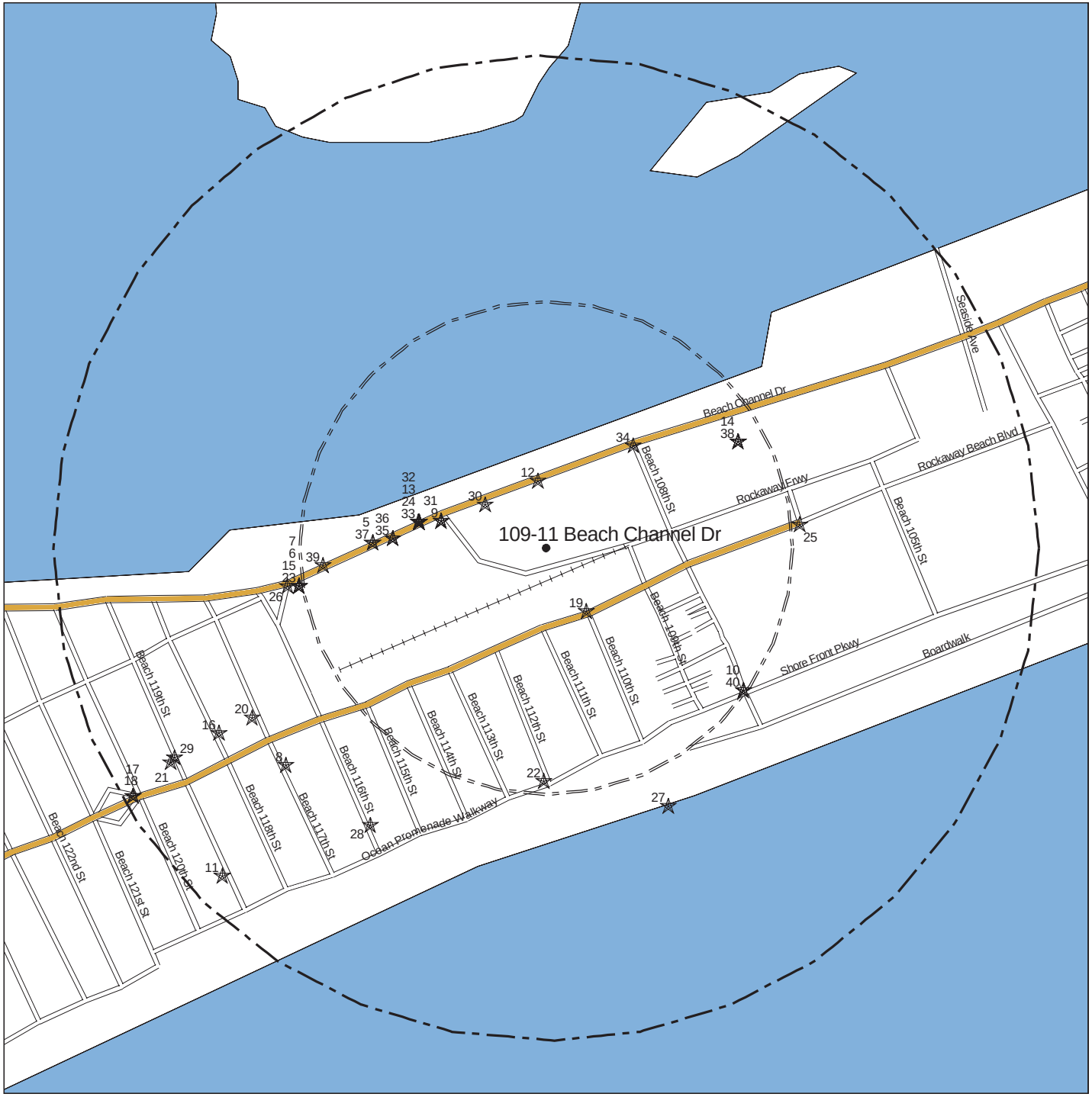
1 0 1/8 1/4 1/2 1

Distance in Miles

Toxics Targeting
1/2 Mile Radius Map

109-11 Beach Channel Dr

Rockaway Park, NY 11694



Queens County

MTBE Gasoline Additive Spill

Hazardous Material Spill

Site Location

Waterbody

Minor Roads

Major Roads

County Border

Expressways

Railroad Tracks

1 Mile Radius

1/2 Mile Radius

1/4 Mile Radius

1/8 Mile Radius

1/2 0 1/16 1/8 1/4 1/2

Distance in Miles

Toxics Targeting
1/4 Mile Radius Map

109-11 Beach Channel Dr

Rockaway Park, NY 11694

Queens County

- Chemical Storage Facility
- Hazardous Waste Generator, Transp.
- Toxic Release
- Air Release
- Wastewater Discharge
- Historic Utility Site
- Civil Enforcement Docket Facility
- Petroleum Bulk Storage Facility
- Site Location
- Waterbody
- Minor Roads
- Major Roads
- County Border
- Expressways
- Railroad Tracks
- 1 Mile Radius
- 1/2 Mile Radius
- 1/4 Mile Radius
- 1/8 Mile Radius

1/4 0 1/8 1/4

Distance in Miles

Toxics Targeting
1/4 Mile Closeup Map

109-11 Beach Channel Dr

Rockaway Park, NY 11694

Queens County

- NPL/CERCLIS/NYSDEC Inactive Hazardous Waste Disposal Site *
- Hazardous Waste Treater, Storer, Disposer *
- MTBE Gasoline Additive Spill
- Hazardous Substance Waste Disposal Site *
- Solid Waste Facility *
- Major Oil Storage Facility *
- Hazardous Material Spill **
- Chemical Storage Facility ***
- Hazardous Waste Generator, Transp. ***
- Toxic Release ***
- Air Release ***
- Wastewater Discharge ***
- Historic Utility Site ***
- Civil Enforcement Docket Facility ***
- Petroleum Bulk Storage Facility ***
- Site Location
- Waterbody
- Minor Roads
- Major Roads
- County Border
- Expressways
- Railroad Tracks
- 1 Mile Radius
- 1/2 Mile Radius
- 1/4 Mile Radius
- 1/8 Mile Radius

1/4 0 1/8 1/4

Distance in Miles

* 1 Mile Search Radius

** 1/2 Mile Search Radius

*** 1/4 Mile Search Radius

Section Two: Toxic Site Profiles

The heading of each *Toxic Site Profile* refers to the site's map location and details:

- The facility name, address, city, state, and zip code (This information does not appear in the headings for Inactive Hazardous Waste Disposal Sites).
- Any changes that were made to a site's address in order to map its location.
- The site mapping method that was used (see ***How Sites are Located***, at the end of this section for more information).

Toxic Site Profiles summarize information provided by site owners or operators and government agencies regarding various toxic chemical activities reported at each site, such as:

- Whether chemicals were stored, produced, transported, discharged or disposed of.
- The name of chemicals and their Chemical Abstract Series (CAS) numbers;
- The amount of chemicals and the units (gallons/pounds) the chemical was measured in.
- Whether the site or storage tanks at the site are currently active or inactive.
- Special codes used by government agencies to regulate hazardous waste activities at some sites
  (A complete description of the codes follows the profiles section).

For selected individual chemicals reported at various toxic sites, some potential health effect summary information appears below the site profile. Each potential health effect summary identifies chemicals by name and by Chemical Abstract Series (CAS) Number. An "x" under each potential health effect heading indicates positive toxicity testing results reported by the National Institute of Occupational Safety and Health's Registry of Toxic Effects of Chemical Substances (RTECS). Some chemicals (mostly appearing in profiles of Hazardous Waste facilities), are reported as mixtures, and RTECS health effect information is only available for individual chemicals. In addition, RTECS only provides information on approximately 100,000 common chemicals. Consequently, the absence of potential health effect summary information for a particular chemical identified in a Toxic Site Profile does not necessarily mean that the chemical does not pose potential health effects.

The Maximum Contaminant Level (MCL) in drinking water allowed for selected chemicals is also noted. In most cases, the only applicable MCL has been set by the New York State Department of Health (NYSDOH). Where NYSDOH has not set an MCL, the federal standard, if one exists, is listed and is marked by an asterisk.

Presented below are column headings that describe the health effect definitions used in RTECS and applicable New York State and federal drinking water standards. Reference sources for information presented in this section are also provided.

ACUTE TOX: **Acute Toxicity**: Short-term exposure to this chemical can cause lethal and non-lethal toxicity effects not included in the following four categories.

TUMOR TOX: **Tumorigenic Toxicity**: The chemical can cause an increase in the incidence of tumors.

MUTAG TOX: **Mutagenic Toxicity**: The chemical can cause genetic alterations that are passed from one generation to the next.

REPRO TOX: **Reproductive toxicity**: May signify one of the following effects: maternal effects, paternal effects, effects on fertility, effects on the embryo or fetus, specific developmental abnormalities, tumorigenic effects, or effects on the newborn (only positive reproductive effects data for mammalian species are referenced)

IRRIT TOX: **Primary Irritant**: The chemical can cause eye or skin irritation

MCL: **Drinking Water Standard - Maximum Contaminant Level** (MCL) listed under Drinking Water Supplies, 10 NYCRR Part 5, Subparts 1.51(f),(g), and (h) for NYDOH MCL's and under the Safe Drinking Water Act, 40 CFR 141, Subparts B and G, (* indicates value for total trihalomethanes) for federal MCL's.

Reference Source for Toxicity Information: Registry of Toxic Effects of Chemical Substances (RTECS), NIOSH (on-line database); For further information, contact: NIOSH, 4676 Columbia Parkway, Cincinnati, OH, 45226, 800/35-NIOSH.

Reference Source for Drinking Water Standards: New York State Department of Health, Bureau of Toxic Substances Assessment, 2 University Place, Room 240, Albany, NY 12203, 518/458-6373.

U.S. Environmental Protection Agency, Office of Drinking Water, 401 M St SW, Mailstop WH-556, Washington, DC, 20460, 202/260-5700.

Inactive Hazardous Waste Disposal Site Classifications: 1 -- Causing or presenting an imminent danger of causing irreversible or irreparable damage to the public health or the environment -- immediate action required;

2 -- Significant threat to the public health or environment -- action required;

3 -- Does not Present a significant threat to the environment or public health -- action may be deferred;

4 -- Site properly closed --requires continued management;

5 -- Site properly closed, no evidence of present or potential adverse impact -- no further action required;

2a -- This temporary classification has been assigned to sites where there is inadequate data to assign them to the five classifications specified by law.

$D_{1, 2, 3}$ -- Delisted Site (1: hazardous waste not found; 2: remediated; 3: consolidated site or site incorrectly listed)

**** NPL/CERCLIS/INACTIVE HAZARDOUS WASTE DISPOSAL SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS ****

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 1 **LILCO - ROCKAWAY PARK** **Facility Id: 241029**
BEACH CHANNEL DRIVE & BEACH 108TH STREET ROCKAWAY PARK NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: BEACH CHANNEL DR / BEACH 108TH ST
Revised zip code: NO CHANGE

SITE DESIGNATION: NPL- CERCLIS- NYSDEC REGISTRY-X

****

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL SITE INFORMATION

SITE CODE: 241029
CLASSIFICATION CODE: 2 REGION: 2 EPA ID:
CLASSIFICATION CODE DESCRIPTION:
Significant threat to the public health or environment - action required.

NAME OF SITE: LILCO - Rockaway Park
STREET ADDRESS: Beach Channel Drive & Beach 108th Street
TOWN/CITY: Rockaway Park ZIP: 11694 COUNTY: Queens

SITE TYPE: Dump- Structure-X Lagoon- Landfill- Treatment Pond- ESTIMATED SIZE: 9.8 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S):
NAME.....: Long Island Lighting Company (LILCO)
ADDRESS..: 445 Broadhollow Road, Melville, NY
OWNER DURING DISPOSAL:
NAME.....: Long Island Lighting Company (LILCO)
OPERATOR(S) DURING DISPOSAL:
NAME.....: Long Island Lighting Company (LILCO)
ADDRESS..: 445 Broadhollow Road, Melville, NY

HAZARDOUS WASTE DISPOSAL PERIOD: from 1894 to 1959

SITE DESCRIPTION:

This site is located in a commercial area of the Rockaway Park Section of the Borough of Queens, New York City. The site is bounded by Beach Channel Drive to the north, Beach 108th Street to the east, and Rockaway Freeway to the west and south. Jamaica Bay is located 200 feet north of the site, and the Atlantic Ocean is one-quarter mile to the south. The site has been occupied by various gas and electric companies for over 100 years, with Manufactured Gas Plant (MGP) operations being conducted on site for the first 65 years. The Long Island Lighting Company (LILCO) has owned the site since 1926. The USEPA conducted a Site Investigation in 1989 which revealed surficial soil contamination consistent with MGP operations. A subsequent investigation performed by LILCO in the fall of 1995 indicated soil and groundwater contamination with benzene and cyanide.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
benzene (D018 Waste)	unknown

ANALYTICAL DATA AVAILABLE FOR: Air- Surface Water- Groundwater-X Soil-X Sediment-
APPLICABLE STANDARDS EXCEEDED IN: Groundwater-X Drinking Water- Surface Water- Air-

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE: Sand and gravel.
GROUNDWATER DEPTH: 5 feet

LEGAL ACTION: Type: State- Federal-
STATUS: Negotiation in Progress- Order Signed-
REMEDIAL ACTION: Proposed- Under Design- In Progress- Completed-
NATURE OF ACTION:

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
Past site operations have contaminated on-site soils and groundwater. Further investigation is required to determine the extent of contamination.

ASSESSMENT OF HEALTH PROBLEMS:
Groundwater is contaminated with benzene, cyanide and polyaromatic hydrocarbons (PAHs) above public drinking water standards. There are no drinking water supply wells downgradient of the site, so community exposure to contaminated groundwater is not expected. Subsurface soils contain benzene and PAHs above NYSDEC soil cleanup objectives. However, exposures are unlikely unless subsurface excavations were to occur. The site is fenced, minimizing the potential for trespassers and the surrounding community to come in contact with contaminated surface soils.

Map Identification Number 2 **ROCKAWAY PARK GAS PLANT** **EPA Facility Id: NYD986881688**
ROCKAWAY PARK QUEENS NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE (1)
Approximate distance from property: 378 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

SITE DESIGNATION: NPL- CERCLIS-X NYSDEC REGISTRY-

****

USEPA COMPREHENSIVE ENVIRONMENTAL RESPONSE
COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)

SITE INFORMATION

EPA-ID: NYD986881688 Site-ID: 0202894
Site Name: ROCKAWAY PARK GAS PLANT
Site Street: ROCKAWAY PARK
Site City/State/Zip: QUEENS, NY 11694

NFRAP (No Further Remedial Activity Planned) Indicator: NO FURTHER REMEDIAL ACTION PLANNED

Owner Indicator: Other
Incident Type:
Incident Category:
Federal Facility Flag: Not a Federal Facility

NPL Status Indicator: Not on the NPL
USGS Hydrological Unit:
RCRA Flag:

SITE ALIAS INFORMATION

Alias Name: ROCKAWAY PARK GAS PLANT Alias ID: 101
Alias Street:
Alias City/State/Zip: QUEENS, NY

OPERABLE UNIT INFORMATION

Operable Unit ID: 00 Operable Unit Name: SITEWIDE

ACTION INFORMATION

Name: DISCOVERY
Lead: EPA Fund-Financed
Qualifier:
Category:
Planning Status:
Anomaly Indicator:
IFMS Entry: No Entry into IFMS

Current Plan Start Date:
Current Plan Completion Date:
Actual Start Date:
Actual Completion Date: 19881222
Operable Unit ID: 00
Financial Budget Source:

Name: PRELIMINARY ASSESSMENT

Current Plan Start Date:

Lead:	EPA Fund-Financed	Current Plan Completion Date:	
Qualifier:	Low	Actual Start Date:	19890228
Category:		Actual Completion Date:	19890331
Planning Status:		Operable Unit ID:	00
Anomaly Indicator:		Financial Budget Source:	Remedial
IFMS Entry:	Both Intramural and Extramural Entry into IFMS		

Name:	SITE INSPECTION	Current Plan Start Date:	
Lead:	EPA Fund-Financed	Current Plan Completion Date:	
Qualifier:	NFRAP (No Futher Remedial Action Planned)	Actual Start Date:	19891101
Category:		Actual Completion Date:	19891231
Planning Status:		Operable Unit ID:	00
Anomaly Indicator:		Financial Budget Source:	Remedial
IFMS Entry:	Both Intramural and Extramural Entry into IFMS		

Name:	REMOVAL ASSESSMENT	Current Plan Start Date:	
Lead:	EPA Fund-Financed	Current Plan Completion Date:	
Qualifier:		Actual Start Date:	19901025
Category:		Actual Completion Date:	19910429
Planning Status:		Operable Unit ID:	00
Anomaly Indicator:		Financial Budget Source:	Removal
IFMS Entry:	Both Intramural and Extramural Entry into IFMS		

FINANCIAL INFORMATION

No financial information was provided

**** HAZARDOUS SUBSTANCE WASTE DISPOSAL SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS ****

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 3 **LILCO, ROCKAWAY GAS PLANT** **Site Number Id HS2034** **Registry ID 241029**
BEACH 108TH STREET ROCKAWAY PARK NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Hazardous Waste Remediation
Hazardous Substance Waste Disposal Site Study

Inventory Status: Removed from the Hazardous Substance Inventory
Reason site did not qualify for the Inventory:
Regisrty site

SITE INFORMATION

Site Name: LILCO, ROCKAWAY GAS PLANT
Site Street: BEACH 108TH STREET
Site City: ROCKAWAY PARK
Site Zip: 11694
Region: 2

Site Number: HS2034
Registry: No
Registry Site ID: 241029
RCRA: No
EPA ID: NYD986881688

US EPA No Further Remedial Action Planned? Unknown

Site Code: 2A
Description: COAL GASIFICATION PLANT

Acres: 9.80
Completed Investigation? PA/SI
Is Site Active: No
Years of Operation: 1880 to 1958

Quadrangle: FAR ROCKWAY
HRS Score: 7.42
HRS Date: 09/23/93

Site Description:
The site is located in an urban/commercial area adjacent to Jamaica Bay in the Rockway Park section of the borough of Queens. The site was operated as a coal gasification plant for 78 years. Wastes previously generated at the site include drip oils, coal tars, clinker, pitch, and coal ash. Wastes were either

reused, sold, or disposed. Specifics of waste management are unknown. The site is currently used as an electrical substation, pipeline pigging station, workshop, and storage area by LILCO. The site is a class 2 registry site #241029.

Owner:	Private	Operator:	Unknown
Owner Name:	LILCO	Operator Name:	Unknown
Owner Street:	173 E. OLD COUNTRY ROAD	Operator Street:	Unknown
Owner City/ZIP/State:	HICKSVILLE	Operator City/ZIP/State:	
Owner Telephone:	(516)933-4590	Operator Telephone:	Unknown

SITE IMPACT DATA

Affected Media:

		Hazardous Substance Exposed?	Yes
Contamination of...		Controlled Site Access?	No
...Surface Water?	Unknown	Ambient Air Contamination?	Unknown
...Groundwater?	Unknown	Threat of Direct Contact?	Yes
...Drinking Water?	No	Documented Fish or Wildlife Mortality?	Unknown
Surface Water Class:	SB	Impact on Special Status Fish or Wildlife Resource?	Unknown
Groundwater Class:	Sole	Active Drinking Water Supply?	Yes

Descriptions:

Surface Water:
nearest surface water: 100ft., north

Groundwater:
nearest groundwater depth: 8ft., flow: north

Drinking Water:
nearest water supply: 3miles, northeast

Fish or Wildlife Mortality: None provided
Special Status Fish or Wildlife Resource: None provided

Building:
nearest building: onsite, administrative

THREAT TO THE ENVIRONMENT OR PUBLIC HEALTH

Threat to the Environment or the Public Health: Environment/Public Health

Threat Posed by Disposed Hazardous Substance:
Wastes disposed from past onsite activities have contaminated the surface soils. It is unknown if the contamination has affected the groundwater and the surface water surrounding the site. The site is enclosed by a fence, but it has been intentionally broken through, presumably to use the property for recreation. Potential for direct contact with hazardous substances exists for trespassers, since contamination was found in surface soil samples.

HAZARDOUS SUBSTANCES DISPOSED:

VOCs: No Semi-VOCs: Yes PCBs: No Pesticides: Yes Metals: Yes Asbestos: No

Hazardous Substances Disposed:
lead, benzo(a)pyrene, pyrene, benzo(a)fluoranthene, benzo(g,h,i)perylene, indeno(1,2,3-cd)pyrene, chrysene, fluoranthene, 4,4-DDT

SELECTED ANALYTICAL INFORMATION:

Samples Collected:
Surface Soil

Air: None provided
Surface Water: None provided

Surface Soil:
lead, benzo(b)fluoranthene, benzo(a)pyrene, pyrene, indeno(1,2,3-cd)pyrene, 4,4-DDT

Waste: None provided
EPToxicity: None provided
Groundwater: None provided
Sediment: None provided
Subsurface Soil: None provided
Leachate: None provided
TCLP: None provided

AGENCY INFORMATION:

Regulatory Agencies Involved:
USEPA NYSDEC

Preparer:
David K. Harrington Environmental Engineer 1 NYSDEC May 24, 1994

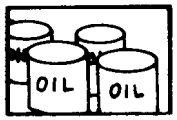
Map Identification Number 4 **LILCO, ROCKAWAY GAS PLANT** **Site Number Id HS2034** **Registry ID 241029**
BEACH 108TH STREET ROCKAWAY PARK NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE (1)
Approximate distance from property: 378 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

See initial profile for 'LILCO, ROCKAWAY GAS PLANT' above.

**** NO SOLID WASTE FACILITIES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS ****



**** NO OIL STORAGE FACILITIES LARGER THAN 400,000 GALLONS IDENTIFIED WITHIN 1 MILE SEARCH RADIUS ****

**** NO HAZARDOUS WASTE TREATMENT/STORAGE/DISPOSERS IDENTIFIED WITHIN THE 1 MILE SEARCH RADIUS ****

HAZARDOUS MATERIAL SPILLS INTRODUCTION

The Hazardous Material Spills in this section are divided into eight spill cause groupings. These include:

Active Spills Section: Spills with incomplete paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

1) Tank Failures
2) Tank Test Failures
3) Unknown Spill Cause or Other Spill Cause Hazardous Spills
4) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, and Vandalism.

Closed Status Spills Section: Spills with completed paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

5) Tank Failures
6) Tank Test Failures
7) Unknown Spill Cause or Other Spill Cause Hazardous Spills
8) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, and Vandalism.

All spills within each spill cause category are presented in order of proximity to the subject site address.

Please note that spills reported within 0.25 mile (or one-eighth mile in Manhattan) are mapped and profiled.

Between 0.25 mile (or one-eighth mile in Manhattan) and 0.5 mile, only the following spills are mapped and profiled:

* Tank Failures;

* Tank Test Failures;

* Unknown Spill Cause or Other Spill Cause;

* Spills greater than 100 units of quantity; and

* Spills reported in the NYSDEC Fall 1998 MTBE Survey.

A table at the end of each section presents a listing of reported Miscellanous Spills with less than 100 units located between 0.25 mile (or one-eighth mile in Manhattan) and 0.5 mile. These spills are neither mapped nor profiled.

ACTIVE TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 5 **GASETERIA** **Spill Number: 9904951** **Close Date:**
113-10 BEACH CHANNEL DR QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 931 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11310 BEACH CHANNEL DR
Revised zip code: NO CHANGE

Source of Spill: GASOLINE STATION
Spiller: GASETERIA
Spiller Phone: (516) 851-1600
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name: MATT BOECKEL
Caller Agency: GCI INC
Caller Phone: (516) 851-1600
DEC Investigator: ROMMEL
Contact for more spill info: CALLER
Contact Person Phone: (516) 851-1600

Spill Class: KNOWN RELEASE THAT CREATES POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
06/01/1999		TANK FAILURE	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	NO

Caller Remarks: CALLER REPORTS THAT 12 TANKS WERE REMOVED IN 1997 AND THEY TESTED GROUNDWATER AND SOIL AND FOUND CONTAMINATION.

DEC Investigator Remarks: CON ED E2MIS NOTES07-18-99 01-18-99 @ 15:30hrs. 2 gallons of a tar like substance in service box, Clean Harbors is on location to perform cleanup, they are treating substance as 50-499ppm 8/9/99 Matt Boquel to send report of 3 borings to gw to rommel‘s attention.

Map Identification Number 6 **115-05 BEACH CHANNEL DR** **Spill Number: 9513259** **Close Date:**
115-05 BEACH CHANNEL DRIV QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1338 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11505 BEACH CHANNEL DR
Revised zip code: 11694

Source of Spill: OTHER COMM/INDUSTRIAL
Spiller:
Spiller Phone:
Notifier Type: LOCAL AGENCY
Notifier Name: MR HIRSHMAN
Notifier Phone: (516) 239-3495
Caller Name: SHANTEL VINSON
Caller Agency: NYC DEP
Caller Phone: (718) 595-6777
DEC Investigator: TOMASELLO
Contact for more spill info:
Contact Person Phone: ( ) -

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
01/20/1996		TANK FAILURE	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
WASTE OIL	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	NO

Caller Remarks: LEAK FROM 200 GALLON WASTE OIL TANK IN FRONT OF LOCATION. UNKNOWN AMOUNT SO FAR. HAZ-MAT BEING NOTIFIED AS WELL.

DEC Investigator Remarks: CALLED DEP HAZMAT, NOT AN EMERGENCY, JUST NEED FOLLOW UP, DEP HAS NO ON ETO SEND.

Map Identification Number 7 **OLD EXXON STATION** **Spill Number: 3609** **Close Date:**
115-05 BEACH CHANNEL DR ROCKAWAY PARK, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1338 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11505 BEACH CHANNEL DR
Revised zip code: UNKNOWN

Source of Spill: GASOLINE STATION
Spiller: EXXON/MOBIL
Spiller Phone: (631) 218-6956
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: SIGONA
Contact for more spill info: DENIIS SHIN
Contact Person Phone: (631) 218-6956

Spill Class: KNOWN RELEASE THAT CREATES POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
06/23/2000		TANK FAILURE	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	NO

Caller Remarks: CALLER ON SITE REMOVING UST AND FOUND SOIL CONTAMINATION

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 8 **Spill Number: 3091** **Close Date:**

180 BEECH 117 TH ST ROCKAWAY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1808 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: 180 BEACH 117TH ST
Revised zip code: 11694

Source of Spill: PRIVATE DWELLING
Spiller:
Spiller Phone:
Notifier Type: FIRE DEPARTMENT
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: SACCACIO
Contact for more spill info: BACCI
Contact Person Phone: (718) 476-6288

Spill Class: KNOWN RELEASE THAT CREATES POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
06/12/2000		TANK FAILURE	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#2 FUEL OIL	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	YES

Caller Remarks: REQ CALL AND RESPONSE ASAP - TANK HAS BEEN LEAKING FOR A WEEK AND HAS NOT BEEN REPAIRED - IF IT CONTINUES - WILL LEAK INTO SEWER

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

ACTIVE TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 9 **112-01 BEACH CHANNEL/QNS** **Spill Number: 9007832** **Close Date:**
112001 BEACH CHANNEL NEW YORK CITY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 585 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 11201 BEACH CHANNEL DR
Revised zip code: 11694

Source of Spill: GASOLINE STATION
Spiller: MOBIL
Spiller Phone: (718) 474-8671
Notifier Type: RESPONSIBLE PARTY
Notifier Name:
Notifier Phone:
Caller Name: SCOTT GOTTSCHALL
Caller Agency: MOBIL OIL
Caller Phone: (703) 849-5319
DEC Investigator: SULLIVAN
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE THAT CREATES A FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
10/17/1990		TANK TEST FAILURE	GROUNDWATER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	-1.000	GALLONS	NO	0.000	GALLONS	NO

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
	0.000	TANK TESTING METHOD NOT GIVEN IN DATA	0.	UNKNOWN

Caller Remarks: LINE TEST FAILURE, PETROTITE. LR=-0.012. ALVIN PETROLEUM WILL REPAIR AND RETEST ON 10/18/90.
NOBLE GAS STATION

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 10 107-10 SHOREFRONT PKWY Spill Number: 9504157 Close Date:
107-10 SHOREFRONT PKWY QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1295 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: 10710 SHORE FRONT PKWY
Revised zip code: 11694

Source of Spill: OTHER COMM/INDUSTRIAL Spiller: SAME Spiller Phone:
Notifier Type: TANK TESTER Notifier Name: Notifier Phone:
Caller Name: RANDY PARESE Caller Agency: TANKNOLOGY Caller Phone: (800) 666-2605
DEC Investigator: MULQUEEN Contact for more spill info: Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
07/06/1995		TANK TEST FAILURE	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#4 FUEL OIL	PETROLEUM	-1.000	GALLONS	NO	0.000	GALLONS	NO

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
	0.000	TANK TESTING METHOD NOT GIVEN IN DATA	0.	UNKNOWN

Caller Remarks: HIGHWATER TABLE - NO PBS NUMBER - 25000 GAL TANK - USED VACUTECH NO VAVUUM REPAIRED - PROBABLY A PROBLEM ABOVE THE LINE.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 11 1ST ROCKAWAY COAST CORP Spill Number: 9408550 Close Date:
131 BEACH 119TH ST ROACKAWAY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2460 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill: OTHER COMM/INDUSTRIAL Spiller: MR. A. KOTOWICZ Spiller Phone:
Notifier Type: FEDERAL GOVERNMENT Notifier Name: Notifier Phone:
Caller Name: WILLIAM BUNN Caller Agency: BONAFIDE INDUSTRIES Caller Phone: (516) 758-7421
DEC Investigator: MILLER Contact for more spill info: Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
09/27/1994		TANK TEST FAILURE	AIR	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#2 FUEL OIL	PETROLEUM	-1.000	UNKNOWN	NO	0.000	UNKNOWN	NO

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
	0.000	TANK TESTING METHOD NOT GIVEN IN DATA	0.	UNKNOWN

Caller Remarks: BELLMORE OIL-516/239-8420-WILL E/I/R.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

ACTIVE UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 12 **110 TH ST &** **Spill Number: 9708581** **Close Date:**
BEACH CHANNEL ROCK PARK, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 377 feet to the N

ADDRESS CHANGE INFORMATION
Revised street: B 110TH ST / BEACH CHANNEL DR
Revised zip code: 11694

Source of Spill: OTHER COMM/INDUSTRIAL Spiller: NEW YORK CITY TRANSIT AUT Spiller Phone: (718) 243-4581
Notifier Type: RESPONSIBLE PARTY Notifier Name: JOSEPHINE BROWN Notifier Phone: (718) 243-4581
Caller Name: JOSEPHINE BROWN Caller Agency: NEW YORK CITY TRANSIT AUT Caller Phone: (718) 243-4581
DEC Investigator: ’ HALE’ Contact for more spill info: JOHN COLON Contact Person Phone: (718) 243-5366

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;NO DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
09/12/1997		UNKNOWN	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
TRANSFORMER OIL	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	NO

Caller Remarks: TRANSFORMER HAS BEEN OFF LINE FOR APPROX 13 YRS - CALLER BELIEVES THERE IS SOME TYPE OF FAILURE WITH UNIT - NO CLEAN UP - CALLER STATES PRODUCT CONTAINS PCB‘S 291 PPM

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 13 **112-10 BEACH CHANNEL DR** **Spill Number: 9002300** **Close Date:**
112010 BEACH CHANNEL DR NEW YORK CITY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 698 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 11210 BEACH CHANNEL DR
Revised zip code: 11694

Source of Spill: UNKNOWN Spiller: Spiller Phone:
Notifier Type: OTHER Notifier Name: Notifier Phone:
Caller Name: GENE SULLIVAN Caller Agency: NYSDEC Caller Phone: (718) 776-6080
DEC Investigator: SULLIVAN Contact for more spill info: Contact Person Phone:

Spill Class: KNOWN RELEASE THAT CREATES A FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended

05/29/1990	UNKNOWN	GROUNDWATER		NO			NO
Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	-1.000	UNKNOWN	NO	0.000	UNKNOWN	NO

Caller Remarks: CONTRACTOR EXCAVATED FOR NEW TANK DISCOVERED STRONG ODOR OF GASOLINE IN WATER OF EXCAVATION, SAMPLE TAKEN FOR ANALYSIS.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 14 **DEP ROCKAWAY WATER PLANT** **Spill Number: 9606528** **Close Date:**
106-21 BEACH CHANNEL DR QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 1182 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: 10621 BEACH CHANNEL DR
Revised zip code: NO CHANGE

Source of Spill: OTHER COMM/INDUSTRIAL
Spiller: DEP ROCKAWAY WATER PLANT
Spiller Phone:
Notifier Type: OTHER
Notifier Name: CHRIS SCHEMPP
Notifier Phone: (516) 249-3150
Caller Name: CHRIS SCHEMPP
Caller Agency: TYREE ENVIROMENTAL
Caller Phone: (516) 249-3150
DEC Investigator: KRIMGOLD
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE THAT CREATES POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected		Meets Cleanup Standards		Penalty Recommended
08/21/1996		UNKNOWN	ON LAND		NO		NO
Material Spilled		Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE		PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	NO

Caller Remarks: encountered contaminated soil during underground tank removal

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 15 **EXXON STATION** **Spill Number: 9610023** **Close Date:**
115-05 BEACH CHANNEL DR ROCKAWAY BEACH, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1338 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11505 BEACH CHANNEL DR
Revised zip code: NO CHANGE

Source of Spill: GASOLINE STATION
Spiller: EXXON STATION
Spiller Phone: ( ) -
Notifier Type: RESPONSIBLE PARTY
Notifier Name: GEOLOGICAL SERVICES CORP
Notifier Phone: (860) 528-4723
Caller Name: MIKE MEOLA
Caller Agency: EXXON
Caller Phone: (516) 876-4671
DEC Investigator: O'DOWD/TOMASELLO
Contact for more spill info: MIKE MEOLA
Contact Person Phone: (516) 876-4671

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
11/11/1996		UNKNOWN	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
HYDRAULIC OIL	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	NO

Caller Remarks: caller states notifier is doing pre class work for removal of lifts and found hydraulic fluid - caller is not sure of cause - groundwater 8 ft down is also affected

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 16 **246 118TH STREET** **Spill Number: 9416336** **Close Date:**
246 118TH STREET ROCKAWAY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2006 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: 246 BEACH 118TH STREET
Revised zip code: NO CHANGE

Source of Spill: UNKNOWN
Spiller: MANIS OIL CO
Spiller Phone:
Notifier Type: LOCAL AGENCY
Notifier Name:
Notifier Phone:
Caller Name: TASHA GERENA
Caller Agency: NYCDEP
Caller Phone: (718) 595-6777
DEC Investigator: SIGONA
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
02/25/1995		UNKNOWN	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#2 FUEL OIL	PETROLEUM	-1.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: OIL COMPANY SPILLED UNK QUANTITY OF OIL - HOMEOWNER NOTIFIED OIL COMPANY, HAVE NEVER AIDED ON SPILL. NOW HAS HEAVY ODOR OF OIL IN HOUR. STILL NOT CLEANED. DEC SIGONA RESPOPNDED

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 17 **COMMERCIAL BUILDING** **Spill Number: 1032** **Close Date:**
120-10 ROCKAWAY BEACH BVD QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2575 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: 12010 ROCKAWAY BEACH BLVD
Revised zip code: 11694

Source of Spill: OTHER COMM/INDUSTRIAL
Spiller: UNK
Spiller Phone: (000) 000-0000
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: DEMEO
Contact for more spill info: UNK
Contact Person Phone: (000) 000-0000

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
04/25/2000		UNKNOWN	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#4 FUEL OIL	PETROLEUM	5.000	GALLONS	NO	0.000	GALLONS	YES

Caller Remarks: DELIVERY WAS MADE TO COMMERCIAL BLDG-SPILL IS UNDER INVESTIGATION AS TO HOW AND WHY IT HAPPENED. PETROLEUM TANK CLEANERS AND A SPILL TEAM ARE ON WAY FOR CLEANUP.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 18 **Spill Number: 1028** **Close Date:**
120-10 ROCKAWAY BCH BLVD QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2575 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: 12010 ROCKAWAY BEACH BLVD
Revised zip code: 11694

Source of Spill: TANK TRUCK
Spiller: P&S TRUCKING CO
Spiller Phone: (718) 499-2300
Notifier Type: LOCAL AGENCY
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: DEMEO
Contact for more spill info: THERESA MOULTERIE
Contact Person Phone: (718) 595-6777

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
04/25/2000		UNKNOWN	IN SEWER	NO	NO

Material	Material	Quantity	Unk Quantity	Quantity	Unk Quantity

Spilled	Class	Spilled	Units	Spilled ?	Recovered	Units	Recovered ?
#2 FUEL OIL	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	YES

Caller Remarks: company truck making delivery spilled unk quantity of oil on sidewalk and was observed by citizen. in attempting to clean this up - driver put oil in sewer adn in road alloc\ver the area

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

ACTIVE HAZARDOUS SPILLS - MISC. SPILL CAUSES - EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, AND VANDALISM - IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/4 Mile. Between 1/4 Mile and 1/2 Mile, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled. Spills reported to be less than 100 units are listed in a table at the end of this section.

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 19 **Spill Number: 449** **Close Date:**

109-38 ROCKAWAY BEACH BLV QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 390 feet to the SSE

ADDRESS CHANGE INFORMATION
Revised street: 10938 ROCKAWAY BEACH BLVD
Revised zip code: 11694

Source of Spill: OTHER NON COMM/INSTITUTIONAL
Spiller:
Spiller Phone:
Notifier Type: CITIZEN
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: SACCACIO
Contact for more spill info: FARRELL MURPHY
Contact Person Phone: (718) 634-0566

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
04/11/2000		HOUSEKEEPING	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
UNKNOWN PETROLEUM	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	YES

Caller Remarks: land was a school bus lot at one time and is now closed caller states it was never maimtained or cleaned ups

DEC Investigator Remarks: Spoke with Mr. Murphy regarding location and he told me that he orininally filed a complaint with the Clair Schulman, Queens Burough Office. Dept. of Sanatation Cummunity Service was cantacted by the QBO. Ground is black. The whole lot was filled with buss

THE FOLLOWING ACTIVE SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/4 MILE AND 1/2 MILE FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, OR VANDALISM. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY
9703787	LAND	BEACH 116TH & CHANNEL DR	FAR ROCKAWAY
9905408	ROCKAWAY BEACH	180 BEACH 117 STREET	QUEENS

CLOSED STATUS TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 20 245 BEACH 117TH ST. Spill Number: 9213561 Close Date:03/30/1995
245 BEACH 117TH ST. ROCKAWAY PARK, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1812 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill: PRIVATE DWELLING
Spiller: J. COBURN - RESID.
Spiller Phone: (407) 231-0645
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name: KEVIN ZAREMBA
Caller Agency: SLOMIN'S OIL
Caller Phone: (516) 932-7000
DEC Investigator: MILLER
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
03/09/1993	03/30/1995	TANK FAILURE	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#2 FUEL OIL	PETROLEUM	10.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: SPILL ON DIRT OUTSIDE TANK. LEAK IS PATCHED & TO REPLACE TANK. WOULD LIKE CALL BACK. HOME OWNER AWAY ON VACATION. OUTSIDE TANK LEAKED UNTIL EMPTY.

DEC Investigator / / : 03/30/95 CONFIRMED CLEANUP.
Remarks:

Map Identification Number 21 241 BEACH 119TH ST Spill Number: 9515841 Close Date:08/14/1996
241 BEACH 119TH ST QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2310 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill: OTHER NON COMM/INSTITUTIONAL
Spiller: UNKNOWN
Spiller Phone:
Notifier Type: LOCAL AGENCY
Notifier Name: FDNY
Notifier Phone:
Caller Name: GWENN HAWKINS
Caller Agency: DEP
Caller Phone: (718) 595-6777
DEC Investigator: GUTIERREZ
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;NO DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
03/11/1996		TANK FAILURE	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#2 FUEL OIL	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	YES

Caller Remarks: tank broke in basement - unk info after that

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

CLOSED STATUS TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 22 111-14 BEACH 112TH ST./ST Spill Number: 8705982 Close Date:11/05/1993
111-14 BEACH 112TH ST. NEW YORK CITY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1235 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11694

Source of Spill: OTHER NON COMM/INSTITUTIONAL Spiller: STELLA MARIS HIGH SCHOOL Spiller Phone: (718) 634-4994
Notifier Type: TANK TESTER Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: BATTISTA Contact for more spill info: Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;NO DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	PBS # Involved	Resource Affected	Meets Cleanup Standards	Penalty Recommended
10/15/1987	11/05/1993	TANK TEST FAILURE	2-359505	GROUNDWATER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#2 FUEL OIL	PETROLEUM	-1.000	UNKNOWN	NO	0.000	UNKNOWN	NO

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
	0.000	TANK TESTING METHOD NOT GIVEN IN DATA	0.	UNKNOWN

Caller Remarks: 20K TANK FAILED TEST WITH A LEAK RATE OF -.23 G/HR. REGION 1 WAS FIRST NOTIFIED 0N 10/16/87 AT 14:39. CONTACT:SISTER RUTH 718 634-4994

DEC Investigator Remarks: / / : WILL EXCAVATE, ISOLATE, AND RETEST. 11/05/93: WILL EXCAVATE, ISOLATE, AND RETEST. NEW ENGLAND TANK DID REPAIRS RETESTED AND PASSED 9/12/88.

Map Identification Number 23 **115-05 BEACH CHANNEL DR./** **Spill Number: 8706012** **Close Date:12/10/1990**
115-05 BCH. CHANNEL DR. NEW YORK CITY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1338 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11505 BEACH CHANNEL DR
Revised zip code: 11694

Source of Spill: GASOLINE STATION
Spiller: EXXON STATION
Spiller Phone:
Notifier Type: TANK TESTER
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: BATTISTA
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	PBS # Involved	Resource Affected	Meets Cleanup Standards	Penalty Recommended
10/16/1987	12/10/1990	TANK TEST FAILURE	2-188794	GROUNDWATER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	-1.000	UNKNOWN	NO	0.000	UNKNOWN	NO

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
	0.000	TANK TESTING METHOD NOT GIVEN IN DATA	0.	UNKNOWN

Caller Remarks: 4K TANK- NO LEAK RATE, WILL DISCONNECT PIPING TO SUBMERSIBLE PUMP, WILL REPIPE AND RETEST.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

CLOSED STATUS UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 24 **112-10 BEACH CHANNEL DR** **Spill Number: 9002213** **Close Date:06/30/1990**
112010 BEACH CHANNEL DR NEW YORK CITY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 698 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 11210 BEACH CHANNEL DR
Revised zip code: 11694

Source of Spill: GASOLINE STATION
Spiller: GAS STATION
Spiller Phone:
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name: JOHN
Caller Agency: PETROLEUM CONST
Caller Phone: (718) 385-8800
DEC Investigator: SULLIVAN
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE THAT CREATES A FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
05/25/1990		UNKNOWN	GROUNDWATER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	-1.000	POUNDS	NO	0.000	POUNDS	NO

Caller Remarks: WHILE EXCAVATING CONTAMINATED SOIL & GROUNDWATER WAS DISCOVERED.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 25 **ROCKAWAY BEACH/QUEENS** **Spill Number: 8805199** **Close Date:02/27/1989**
ROCKAWAY BCH/104 & 108 ST NEW YORK CITY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 1366 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: B 104TH ST B 108TH ST
Revised zip code: 11694

Source of Spill: UNKNOWN
Spiller:
Spiller Phone:
Notifier Type: FEDERAL GOVERNMENT
Notifier Name:
Notifier Phone:
Caller Name: CARL PELLEGRINO
Caller Agency: USEPA
Caller Phone: (201) 321-6744
DEC Investigator: SIGONA
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
09/15/1988	02/27/1989	UNKNOWN	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
UNKNOWN PETROLEUM	PETROLEUM	-1.000	UNKNOWN	NO	0.000	UNKNOWN	NO

Caller Remarks: ABANDONED DRUM ON BEACH, PARTIALLY BURIED IN SAND, WILL NOTIFY USCG. /USCG OR DEP HAVE NOT YET SEEN CONTAINER.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 26 **AMOCO GAS STATION** **Spill Number: 9604218** **Close Date:06/27/1996**

116TH ST/BEACH CHANEL DR ROCKAWAY PARK, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1399 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: BEACH 116TH ST / BEACH CHANNEL DR
Revised zip code: 11694

Source of Spill: GASOLINE STATION
Spiller: UNKNOWN
Spiller Phone:
Notifier Type: CITIZEN
Notifier Name: KUMAR CANA
Notifier Phone: (000) 000-0000
Caller Name: KUMAR CANA
Caller Agency: CUSTOMER
Caller Phone: (000) 000-0000
DEC Investigator: O'DOWD
Contact for more spill info: UNKNOWN
Contact Person Phone: (000) 000-0000

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;NO DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
06/27/1996		UNKNOWN	SURFACE WATER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	YES

Caller Remarks: caller states large amt of gasoline was spilled going into jamaic bay

DEC Investigator Remarks: 18:00 - USCG - GAVE REPORT TO USCG JOE BOWES - WILL SEND OUT POLLUTION RESPONSE TEAM - WILL CALL BACK OR WE CALL BACK. 8:45 - SPOKE TO MR. BOWES, SENT OUT A SMALL BOAT TO CHECK IT OUT & GOUND NOTHING WILL CHECK. BEACH TOMORROW TO SEE IF THEY FIND ANYTHING.

Map Identification Number 27 110TH ST BEACH/QUEENS Spill Number: 8904536 Close Date:08/07/1989
110TH STREET BEACH NEW YORK CITY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 1518 feet to the SSE

ADDRESS CHANGE INFORMATION
Revised street: BEACH 110TH ST
Revised zip code: 11694

Source of Spill: UNKNOWN
Spiller:
Spiller Phone:
Notifier Type: AFFECTED PERSONS
Notifier Name:
Notifier Phone:
Caller Name: JOANNE UHL
Caller Agency: CITIZEN
Caller Phone: (212) 532-5580
DEC Investigator: FINGER
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
08/06/1989	08/07/1989	UNKNOWN	SURFACE WATER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
UNKNOWN PETROLEUM	PETROLEUM	-1.000	UNKNOWN	NO	0.000	UNKNOWN	NO

Caller Remarks: PERSON WENT IN WATER & CAME OUT WITH TAR ON LEG, BECAME SICK FROM MATERIAL.

DEC Investigator Remarks: 08/07/89: DEC NOTIFIED CALLER TO REPORT INCIDENT TO THE DEPT OF HEALTH. 10/10/95: This is additional information about material spilled from the translation of the old spill file: TAR LIKE MATERIAL.

Map Identification Number 28 116 116 STREET Spill Number: 9302986 Close Date:06/05/1993
116 116 STREET ROCKAWAY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1747 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: 116 B116TH ST
Revised zip code: 11694

Source of Spill: UNKNOWN
Spiller:
Spiller Phone:
Notifier Type: FEDERAL GOVERNMENT
Notifier Name:
Notifier Phone:
Caller Name: L. JOHNSON
Caller Agency: USCG
Caller Phone: (212) 668-7936
DEC Investigator: O'DOWD.
Contact for more spill info:
Contact Person Phone:

Spill Class: POSSIBLE REL WITH MIN POTENTIAL FOR FIRE OR HAZARD (OR KNOWN REL W/ NO DAMAGE);NO DEC RESP;WILLING RP;CORR ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
06/04/1993	06/05/1993	UNKNOWN	AIR	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
DIESEL	PETROLEUM	0.000	UNKNOWN	NO	0.000	UNKNOWN	NO

Caller Remarks: 6/5/93 11:30 AM SPOICE TO USCG SCESELFUEL UNRECOV. COULDN'T FIND A SOURCE - EVERYTHING LOOKS GOOD TODAY
6/5/93 1PM RECEIVED FULL REPORT FROM GEORGE MAY-NRC, NYCDEP NOTIFIED NO CALL BACK NECESSARY.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 29 **ROCKAWAY PARK 119TH ST** **Spill Number: 9303787** **Close Date:06/23/1993**
ROCKAWAY PARK 119TH ST QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 2279 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: BEACH 119TH ST
Revised zip code: 11694

Source of Spill: UNKNOWN
Spiller: UNK
Spiller Phone:
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name: MARY FORD
Caller Agency: CITIZEN
Caller Phone: (718) 945-7442
DEC Investigator:
Contact for more spill info:
Contact Person Phone:

Spill Class: POSSIBLE REL WITH MIN POTENTIAL FOR FIRE OR HAZARD (OR KNOWN REL W/ NO DAMAGE);NO DEC RESP;WILLING RP;CORR ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
06/20/1993	06/23/1993	UNKNOWN	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
UNKNOWN MATERIAL	UNKNOWN	0.000	UNKNOWN	NO	0.000	UNKNOWN	NO

Caller Remarks: A SYRING WAS STEPP ON BY JOHN TRACEY 718-253-6429 - CALLER WOULD LIKE INTO ON SYRING ETC. PLEASE CALL.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

CLOSED STATUS HAZARDOUS SPILLS - MISC. SPILL CAUSES - EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, AND VANDALISM - IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/4 Mile. Between 1/4 Mile and 1/2 Mile, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled.
Spills reported to be less than 100 units are listed in a table at the end of this section.

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 30 110TH&112TH BCH CHANNELDR Spill Number: 9011891 Close Date:03/30/1995
110TH&112TH BCH CHANNELDR NEW YORK CITY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 409 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: BEACH CHANNEL DR / BEACH 110TH ST
Revised zip code: 11694

Source of Spill: GASOLINE STATION
Spiller:
Spiller Phone:
Notifier Type: CITIZEN
Notifier Name:
Notifier Phone:
Caller Name: KOON TANG
Caller Agency: NYSDEC
Caller Phone: (718) 482-4933
DEC Investigator: TANG
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE THAT CREATES POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
02/12/1991	03/30/1995	DELIBERATE	SURFACE WATER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	-1.000	UNKNOWN	NO	0.000	UNKNOWN	NO

Caller Remarks: SUNOCO PERSONNEL PUMPING GAS INTO JAMAICA BAY,APPROX (6) BUCKETS,NYCFDNYCDEP,USCG & NYSDEC NOTIFIED, ECOS RESPONDING TO INVESTIGATE,

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 31 **112-01 BEACH CHANNEL** **Spill Number: 9312513** **Close Date:09/06/1994**
112-01 BEACH CHANNEL ROCKAWAY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 585 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 11201 BEACH CHANNEL DR
Revised zip code: 11694

Source of Spill: GASOLINE STATION
Spiller: MOBIL S/S
Spiller Phone:
Notifier Type: RESPONSIBLE PARTY
Notifier Name:
Notifier Phone:
Caller Name: MARTHA
Caller Agency: MOBIL OIL
Caller Phone: (713) 752-7495
DEC Investigator: SIGONA
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
01/24/1994	09/06/1994	EQUIPMENT FAILURE	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	-1.000	UNKNOWN	NO	0.000	UNKNOWN	NO

Caller Remarks: LEAK DETECTOR SOUNDED, CONTRACTOR NOTIFIED TO INVESTIGATE - CALLED MARTHA ON 1/26/94 NO ANSWER BUSY - REFERED TO KERRI-ANNE O'DOWD FOR FOLLOW UP.

DEC Investigator Remarks: 09/28/94: SEE EPS LETTER DATED 9/6/94.

Map Identification Number 32 **112-10 BEACH CHANNEL DR.** **Spill Number: 9500205** **Close Date:04/05/1995**
112-10 BEACH CHANNEL DR QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 698 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 11210 BEACH CHANNEL DR
Revised zip code: NO CHANGE

Source of Spill: GASOLINE STATION
Spiller: ULTIMATE TRANSPORT
Spiller Phone: (718) 349-6416
Notifier Type: RESPONSIBLE PARTY
Notifier Name:
Notifier Phone:
Caller Name: ANTHONY TAYLOR
Caller Agency: ULTIMATE TRANSPORT
Caller Phone: (718) 349-6416
DEC Investigator: ZHITOMIRSKY
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
04/05/1995	04/05/1995	TANK OVERFILL	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	3.000	GALLONS	NO	3.000	GALLONS	NO

Caller Remarks: SPEEDY DRY FOR CLEAN UP

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 33 **112-10 BEACH CHANNEL** **Spill Number: 9206808** **Close Date:09/13/1992**
112-10 BEACH CHANNEL ROCKAWAY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 701 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 11210 BEACH CHANNEL DR
Revised zip code: 11694

Source of Spill: GASOLINE STATION
Spiller:
Spiller Phone:
Notifier Type: FEDERAL GOVERNMENT
Notifier Name:
Notifier Phone:
Caller Name: JOHN HOWK
Caller Agency: USCG
Caller Phone: (212) 668-7936
DEC Investigator: TOMASELLO
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;NO DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
09/13/1992	09/13/1992	TANK OVERFILL	SURFACE WATER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	50.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: VINCE OVER FILLED BOAT SPILL DISIPATING CLOSED OUT

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 34 **108TH ST& BCH CHANNEL DR** **Spill Number: 9003871** **Close Date:07/07/1990**
108TH ST&BCH CHANNEL DR NEW YORK CITY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 731 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: BEACH 108TH ST/BEACH CHANNEL DR
Revised zip code: NO CHANGE

Source of Spill: COMMERCIAL VEHICLE
Spiller: TRIBOROUGH COACHES
Spiller Phone:
Notifier Type: CITIZEN
Notifier Name:
Notifier Phone:
Caller Name: PATTY MACCABE
Caller Agency: CITIZEN
Caller Phone: (718) 474-3308
DEC Investigator: SIGONA
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
07/07/1990	07/07/1990	DELIBERATE	AIR	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?

DIESEL	PETROLEUM	-1.000	UNKNOWN	NO	0.000	UNKNOWN	NO

Caller Remarks: FUMES FROM BUSES PARKED IN THE AREA ARE AFFECTING CITIZENS.

DEC Investigator Remarks: 07/07/90: REFERRED TO NYCDEP.

Map Identification Number 35 **BEACH CHNL RD & BEACH 113** **Spill Number: 9500206** **Close Date:04/06/1995**

BEACH CHNL RD & BEACH 113 ROCKAWAY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 825 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: BEACH CHANNEL DR / BEACH 113TH ST
Revised zip code: UNKNOWN

Source of Spill: GASOLINE STATION
Spiller: UNKNOWN
Spiller Phone:
Notifier Type: FIRE DEPARTMENT
Notifier Name:
Notifier Phone:
Caller Name: FIRE FIGHTER HAACH
Caller Agency: NYCFD
Caller Phone: (917) 882-5464
DEC Investigator: ZHITOMIRKSY
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
04/05/1995	04/06/1995	TANK OVERFILL	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	150.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: FILLING TANK AT A GAS STATION - OVERFILL AND APPROX. 150 GAL. SPILLED INTO SEWER. REQ. CALL BACK.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 36 **BCH 113TH ST & BCH CH DR** **Spill Number: 9104100** **Close Date:07/17/1991**

BCH 113TH ST & BCH CH DR QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 825 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: BEACH CHANNEL DR / BEACH 113TH ST
Revised zip code: 11694

Source of Spill: GASOLINE STATION
Spiller: SUNOCO
Spiller Phone:
Notifier Type: CITIZEN
Notifier Name:
Notifier Phone:
Caller Name: TOM COYLE
Caller Agency: CITIZEN
Caller Phone: (718) 474-3110
DEC Investigator: GELLER
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
07/16/1991	07/17/1991	HUMAN ERROR	SURFACE WATER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	1.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: DISPENSING OPERATION, BOATS. WHEN HOSE IS DISCONNECTED, PRODUCT ENTERSWATER NEAR WILDLIFE REFUGE. ****** ONGOING ******

DEC Investigator / / : REFERRED TO ECO'S.
Remarks:

Map Identification Number 37 **JOES CORP. / ROCKAWAY PAR** **Spill Number: 8607261** **Close Date:02/26/1987**
113-10 BEACH CHANNEL DR. FAR ROCKAWAY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 931 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11310 BEACH CHANNEL DR
Revised zip code: 11694

Source of Spill: GASOLINE STATION
Spiller: JOES CORPORATION
Spiller Phone:
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator:
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
02/26/1987	02/26/1987	TANK OVERFILL	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	10.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: NO REMARKS GIVEN FOR THIS SPILL

DEC Investigator See spill # 9904951 - rommel
Remarks:

Map Identification Number 38 **ROCKAWAY SEWAGE PLANT** **Spill Number: 9810102** **Close Date:11/10/1998**
106-21 BEACH CHANNEL DRIV ROCKAWAY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 1182 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: 10621 BEACH CHANNEL DR
Revised zip code: 11694

Source of Spill: COMMERCIAL VEHICLE
Spiller: ROCKAWAY SEWER PLANT
Spiller Phone:
Notifier Type: FEDERAL GOVERNMENT
Notifier Name: MR HELMSTADT
Notifier Phone: (718) 474-3663
Caller Name: MS BERNARD
Caller Agency: DEP
Caller Phone: (718) 595-6700
DEC Investigator: ZHAO
Contact for more spill info: MR HELMSTADT
Contact Person Phone: (718) 474-3663

Spill Class: POSSIBLE REL WITH MIN POTENTIAL FOR FIRE OR HAZARD (OR KNOWN REL W/ NO DAMAGE);NO DEC RESP;WILLING RP;CORR ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
10/01/1998		EQUIPMENT FAILURE	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
HYDRAULIC OIL	PETROLEUM	20.000	GALLONS	NO	20.000	GALLONS	NO

Caller Remarks: they were using a forklift to lift a 55 gallon drum and the line on the forklift broke.spill was cleaned upk

DEC Investigator Remarks: SPILL IS ON PAVEMENT. NO DRAINS. ALL CLEANED UP.

Map Identification Number 39 **Spill Number: 1370** **Close Date:05/08/2000**
114-10 BEACH CHANNEL DR ROCKAWAY PK IN QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1198 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11410 BEACH CHANNEL DR
Revised zip code: UNKNOWN

Source of Spill: OTHER COMM/INDUSTRIAL
Spiller: LIPA
Spiller Phone: (516) 545-5589
Notifier Type: RESPONSIBLE PARTY
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: TIPPLE
Contact for more spill info: CALLER
Contact Person Phone: ( ) -

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
05/03/2000		EQUIPMENT FAILURE	ON LAND	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
TRANSFORMER OIL	PETROLEUM	100.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: callers vault spilled non PCB oil a clean up crew is on te way to the scene. 646-235-0406 the number for this evening

DEC Investigator Remarks: CLEANED BY RP

Map Identification Number 40 **107-10 SHORE FRONT PKWY** **Spill Number: 9404454** **Close Date:06/30/1994**
107-10 SHORE FRONT PKWY ROCKAWAY, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1295 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: 10710 SHORE FRONT PKWY
Revised zip code: NO CHANGE

Source of Spill: RAILROAD CAR
Spiller: COMM BLDG-DAYTON MGMT
Spiller Phone: (718) 634-8600
Notifier Type: RESPONSIBLE PARTY
Notifier Name:
Notifier Phone:
Caller Name: JULIE
Caller Agency: MILRO
Caller Phone: (516) 379-6100
DEC Investigator: MARTINKAT
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;NO DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
06/30/1994	06/30/1994	EQUIPMENT FAILURE	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#6 FUEL OIL	PETROLEUM	50.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: LEAKED INTO TROUGH-BROKEN FEED LINE. WILL REMOVE CONTAMINATED SOIL & PUMP OUT.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

THE FOLLOWING CLOSED SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/4 MILE AND 1/2 MILE FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, OR VANDALISM. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY
9108560	115-05 BCH CHANNEL/HARPER	115-05 BCH CHANNEL/HARPER	QUEENS
9601330	HORNET SERVICE STATION	115-20 BEACH CHANNEL DR	ROCKAWAY PARK
9714409	AMOCO GAS STATION	115-20 BEACH CHANNEL DRIV	ROCKAWAY
9502159	JAMAICA SAVINGS BANK	BEACH 116TH STREET	ROCKAWAY PARK
9515013	116-15 ROCKAWAY BEACH BLV	116-15 ROCKAWAY BEACH BLV	ROCKAWAY
9815509		180 BEACH 117TH ST	ROCKAWAY BEACH
9214338	245 BEECH 117TH ST.	245 BEECH 117TH ST.	ROCKAWAY PARK
9416447	246 BEACH 118TH STREET	246 BEACH 118TH STREET	QUEENS
9103332	BEACH CHANNEL DR/BCH 104	BEACH CHANNEL DR/BCH 104	ROCKAWAY BEACH, POLE 225
9515846	241 BEACH 119TH ST	241 BEACH 119TH ST	NEW YORK

**** PETROLEUM BULK STORAGE FACILITIES LESS THAN 400,000 GALLONS IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS ****

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 41 **P.S. 225** **Facility Id 2-353159 Source: NYS DEC**
190 BEACH 110TH STREET QUEENS, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 498 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 06/28/2003
Facility Phone Number: (718) 391-6000

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	IN SERVICE	#5 OR 6 FUEL OIL	8000	ABOVEGROUND ON LEGS RACKS ETC	00/00		
002	IN SERVICE	#5 OR 6 FUEL OIL	8000	ABOVEGROUND ON LEGS RACKS ETC	00/00		

Map Identification Number 42 **MOBIL S/S # 17-HKT** **Facility Id 2-156965 Source: NYS DEC**
112-01 BEACH CHANNEL DRIVE ROCKAWAY PARK, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 589 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 11201 BEACH CHANNEL DR
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 10/29/2002
Facility Phone Number: (718) 474-8671

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	CLOSED-RMVD FROM GROUND	UNLEADED GASOLINE	550	UNDERGROUND	12/62		04/95
002	CLOSED-RMVD FROM GROUND	UNLEADED GASOLINE	550	UNDERGROUND	12/62		04/95
003	CLOSED-RMVD FROM GROUND	UNLEADED GASOLINE	550	UNDERGROUND	12/62		04/95
004	CLOSED-RMVD FROM GROUND	UNLEADED GASOLINE	550	UNDERGROUND	12/62		04/95
005	CLOSED-RMVD FROM GROUND	UNLEADED GASOLINE	550	UNDERGROUND	12/62		04/95
006	CLOSED-RMVD FROM GROUND	UNLEADED GASOLINE	550	UNDERGROUND	12/62		04/95
007	CLOSED-RMVD FROM GROUND	UNLEADED GASOLINE	550	UNDERGROUND	12/62		04/95
008	CLOSED-RMVD FROM GROUND	UNLEADED GASOLINE	550	UNDERGROUND	12/62		04/95

009	CLOSED-RMVD FROM GROUND	LEADED GASOLINE	4000	UNDERGROUND	12/62		05/87
101	IN SERVICE	UNLEADED GASOLINE	4000	UNDERGROUND	08/87	02/94	
102	IN SERVICE	UNLEADED GASOLINE	4000	UNDERGROUND	08/87	02/94	
103	IN SERVICE	UNLEADED GASOLINE	4000	UNDERGROUND	08/87	02/94	
104	IN SERVICE	UNLEADED GASOLINE	4000	UNDERGROUND	08/87	02/94	
105	IN SERVICE	UNLEADED GASOLINE	4000	UNDERGROUND	08/87	02/94	
106	CLOSED-RMVD FROM GROUND	OTHER	10000	UNDERGROUND	11/89		04/95
107	CLOSED-RMVD FROM GROUND	#1 2 OR 4 FUEL OIL	10000	UNDERGROUND	02/90		04/95

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
UNLEADED GASOLINE	113373000	X	X			X	
UNLEADED GASOLINE	113373000	X	X			X	

Map Identification Number 43 112-10 BEACH CHANNEL DRIVE INCORPORATED (112-10 Facility Id 2-478164 Source: NYS DEC
112-10 BEACH CHANNEL DRIVE ROCKAWAY PARK, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 694 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 11210 BEACH CHANNEL DR
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 11/28/1999
Facility Phone Number: (718) 318-7385

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	IN SERVICE	UNLEADED GASOLINE	4000	UNDERGROUND	09/89	10/95	
002	IN SERVICE	UNLEADED GASOLINE	4000	UNDERGROUND	09/98	10/95	

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
UNLEADED GASOLINE	113373000	X	X			X	

Map Identification Number 44 **ST. JOHNS HOME FOR BOYS** **Facility Id 2-603509 Source: NYS DEC**
150 BEACH 110TH STREET ROCKAWAY, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 799 feet to the SSE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 06/04/2003
Facility Phone Number: (718) 945-2800

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	IN SERVICE	#1 2 OR 4 FUEL OIL	3000	UNDERGROUND	00/00	04/98	

Map Identification Number 45 **STELLA MARIS HIGH SCHOOL** **Facility Id 2-359505 Source: NYS DEC**
BEACH 112TH STREET ROCKAWAY PARK, NY 11694-2491

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 921 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: 114 BEACH 112TH ST
Revised zip code: 11694

Expiration Date of the facility's registration certificate: 11/19/2002
Facility Phone Number: (718) 634-4994

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	IN SERVICE	#1 2 OR 4 FUEL OIL	20000	ABOVEGROUND	00/00	04/98	

Map Identification Number 46 **113-10 BEACH CHANNEL DRIVE** **Facility Id 2-349704 Source: NYS DEC**
113-10 BEACH CHANNEL DR. ROCKAWAY,QUEENS, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 929 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11310 BEACH CHANNEL DR
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 05/19/1993
Facility Phone Number: (516) 569-3977

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00		00/00
002	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00		00/00
003	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00		00/00
004	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00		00/00
005	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00		00/00

006	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00	00/00
007	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00	00/00
008	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00	00/00
009	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00	00/00
010	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00	00/00
011	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00	00/00
012	CLOSED BEFORE 4/1/91	OTHER	550	UNDERGROUND	00/00	00/00

Map Identification Number 47 **ST JOHN'S HOME FOR BOYS** **Facility Id 2-258202 Source: NYS DEC**
144 BEACH 111TH STREET ROCKAWAY BEACH, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 984 feet to the SSE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 07/10/2002
Facility Phone Number: (718) 945-2800

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	IN SERVICE	#1 2 OR 4 FUEL OIL	3000	ABOVEGROUND	12/70	10/87	
002	IN SERVICE	#1 2 OR 4 FUEL OIL	3000	ABOVEGROUND	12/70	10/84	
The following tank was deleted from the reported data. Data reflects last reported information.							
003	IN SERVICE	#1 2 OR 4 FUEL OIL	3000	UNDERGROUND	12/70		

Map Identification Number 48 **ROCKAWAY POLLUTION CONTROL PLANT** **Facility Id 2-600393 Source: NYS DEC**
BEACH CHANNEL DRIVE / BEACH 106TH ST ROCKAWAY, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 1182 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: BEACH CHANNEL DRIVE / 106TH ST
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 01/06/2004
Facility Phone Number: (718) 474-3663

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
R001	CLOSED-IN PLACE	LEADED GASOLINE	1100	UNDERGROUND	05/81		09/96
R002	IN SERVICE	DIESEL	1100	UNDERGROUND	06/74		
R003	IN SERVICE	#1 2 OR 4 FUEL OIL	15000	UNDERGROUND	06/74	10/96	
R004	IN SERVICE	#1 2 OR 4 FUEL OIL	15000	UNDERGROUND	06/74	11/96	

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE	TUMOR	MUTAG	REPRO	IRRIT	MCL

		TOX	TOX	TOX	TOX	TOX
DIESEL	68334305	X	X			X

Map Identification Number 49 **OCEAN PROMENADE NURSING CENTER, INC.** **Facility Id 2-081906 Source: NYS DEC**
140 BEACH 113TH ST ROCKAWAY PARK, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1218 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 01/14/2002
Facility Phone Number: (718) 945-6350

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	IN SERVICE	#1 2 OR 4 FUEL OIL	10000	UNDERGROUND VAULTED W/ ACCESS	05/76		

Map Identification Number 50 **SURFSIDE PARK #1** **Facility Id 2-117196 Source: NYS DEC**
107-10 SHORE FRONT PKWY ROCK PARK, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1312 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: 10710 SHORE FRONT PKWY
Revised zip code: NO CH

Expiration Date of the facility's registration certificate: 06/05/2002
Facility Phone Number: (718) 634-8600

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	IN SERVICE	#5 OR 6 FUEL OIL	25000	UNDERGROUND	00/00		

**** HAZARDOUS WASTE GENERATORS/TRANSPORTERS IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS ****

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 51 **LILCO FAR ROCKAWAY GAS SERVICE BUILDING** **Facility Id NYD982276461**
BEACH CHANNEL DRIVE FAR ROCKAWAY, NY 11694
EPA (FINDS) Name: FAR ROCKAWAY GAS SERVICE BLDG (LILCO)
EPA (FINDS) Address: 109-11 BEACHANNEL DRIVE FAR ROCKAWAY, 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: 10911 BEACH CHANNEL DRIVE
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator:
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
B007	Other PCB Wastes including contaminated soil, solids, sludges, clothing, etc.	275	GALLONS	GENERATED	98
B007	Other PCB Wastes including contaminated soil, solids, sludges, clothing, etc.	6287	KILOGRAMS	GENERATED	98
B003	Petroleum oil or other liquid containing 500 ppm or greater of PCBs.	23813	KILOGRAMS	GENERATED	97
B005	PCB Articles containing 500 ppm or greater of PCBs, excluding small capacitors.	175	KILOGRAMS	GENERATED	97
B007	Other PCB Wastes including contaminated soil, solids, sludges, clothing, etc.	11930	LITERS	GENERATED	97

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
Other PCB Wastes including contaminated soil, solids, sludge	1336363	X	X		X		5 ug/L

Map Identification Number 52 **NYCTA** **Facility Id NYR000046912**
10911 BEACH CHANNEL DRIVE FAR ROCKAWAY, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator: LARGE QUANTITY GENERATOR
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
NONE	No hazardous waste activity reported to NYS 1/89 to 1/1/99.				

Map Identification Number 53 **NYC BOARD OF EDUCATION** **Facility Id NYR000011262**
190 BEACH 110TH STREET QUEENS, NY 11694
EPA (FINDS) Name: NYC BD OF ED - PUBLIC SCHOOL 225 QUEENS
EPA (FINDS) Address: 190 BEACH 110TH ST QUEENS, 11694

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 498 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
D008	Lead	250	POUNDS	GENERATED	95

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
Lead	7439921	X	X	X	X		0.05mg/L*

Map Identification Number 54 **MOBIL OIL CORP SS HKT** **Facility Id NYD986956357**
112-01 BEACH CHANNEL DR ROCKAWAY PARK, NY 11694
EPA (FINDS) Name: MOBIL OIL CORP SS #HKT
EPA (FINDS) Address: 112-01 BEACH CHANNEL DR ROCKAWAY PARK, 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 589 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 11201 BEACH CHANNEL DR
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator: SMALL QUANTITY GENERATOR
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
NONE	Site reported by US EPA. No hazardous waste activity reported to NYS.				

Map Identification Number 55 **NYNEX** **Facility Id NYP000910562**
BEACH 112TH STR & ROCKAWAY BCH QUEENS, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 603 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: BEACH 112TH ST / ROCKAWAY BEACH BLVD
Revised zip code: NO CHANGE

US EPA RCRA (Resource Conservation and Recovery Act) information not reported; Site information reported by NYS DEC.

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
D008	Lead	165	GALLONS	GENERATED	93

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL

Lead	7439921	X	X	X	X	0.05mg/L*

Map Identification Number 56 **ROCKAWAY WPCP-MANHOLE** **Facility Id NYW200026221**
W SIDE BEACH 108 ST ROCKAWAY, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 644 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: WEST SIDE BEACH 108TH ST
Revised zip code: NO CHANGE

US EPA RCRA (Resource Conservation and Recovery Act) information not reported; Site information reported by NYS DEC.

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
NONE	No hazardous waste activity reported to NYS 1/89 to 1/1/99.				

Map Identification Number 57 **HARBOR AUTO BODY INC** **Facility Id NYR000062208**
112-16 BEACH CHANNEL DR ROCKAWAY PARK, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 737 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11216 BEACH CHANNEL DR
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator: SMALL QUANTITY GENERATOR
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
NONE	Site reported by US EPA. No hazardous waste activity reported to NYS.				

Map Identification Number 58 **SUNOCO SERVICE STATION** **Facility Id NYD000707299**
113-10 BEACH CHANNEL DR ROCKAWAY PARK, NY 11694
EPA (FINDS) Name: SUNOCO SERVICE STATION
EPA (FINDS) Address: 113-10 BEACH CHANNEL DR ROCKAWAY PARK, 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 929 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11310 BEACH CHANNEL DRIVE
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator: LARGE QUANTITY GENERATOR
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
NONE	Site reported by US EPA. No hazardous waste activity reported to NYS.				

Map Identification Number 59 **BELL BOY CLEANERS** **Facility Id NYD986900280**
113-13 BEACH CHANNEL DRIVE QUEENS, NY 11401
EPA (FINDS) Name: BELL BOY CLEANERS
EPA (FINDS) Address: 113-13 BEACH CHANNEL DR FAR ROCKAWAY, 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 929 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11313 BEACH CHANNEL DRIVE
Revised zip code: 11694

US EPA RCRA Type: Generator:
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
F002	Spent halogenated solvents	4305	POUNDS	GENERATED	98
D039	Tetrachloroethylene	120	POUNDS	GENERATED	94

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE	TUMOR	MUTAG	REPRO	IRRIT	MCL

		TOX	TOX	TOX	TOX	TOX	
Tetrachloroethylene	127184	X	X	X	X	X	5 ug/L

Map Identification Number 60 **NYNEX** **Facility Id NYP000931600**
ROCKAWAY BEACH BLVD AND 114TH QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1037 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: ROCKAWAY BEACH BLVD / BEACH 114TH ST
Revised zip code: 11694

US EPA RCRA (Resource Conservation and Recovery Act) information not reported; Site information reported by NYS DEC.

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
D008	Lead	1200	POUNDS	GENERATED	96

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
Lead	7439921	X	X	X	X		0.05mg/L*

Map Identification Number 61 **CHANNEL CLEANERS** **Facility Id NYD981086648**
114-11 BEACH CHANNEL ROCKAWAY PARK, NY 11694
EPA (FINDS) Name: CHANNEL CLEANERS
EPA (FINDS) Address: 114-11 BEACH CHANNEL DR FAR ROCKAWAY, 11696

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1172 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 11411 BEACH CHANNEL DR
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
F002	Spent halogenated solvents	780	POUNDS	GENERATED	98

Map Identification Number 62 **ROCKAWAY WPCP** **Facility Id NYW000026221**
BEACH CHANNEL DR & 106 ST ROCKAWAY, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 1180 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: BEACH CHANNEL DRIVE / BEACH 106TH ST
Revised zip code: NO CHANGE

US EPA RCRA (Resource Conservation and Recovery Act) information not reported; Site information reported by NYS DEC.

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
NONE	No hazardous waste activity reported to NYS 1/89 to 1/1/99.				

Map Identification Number 63 **DEP ROCKAWAY WATER CONTROL POLL PLANT** **Facility Id NYR000029405**
106-21 BEACH CHANNEL DRIVE QUEENS, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 1189 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: 10621 BEACH CHANNEL DRIVE
Revised zip code: 11694

US EPA RCRA Type: Generator:
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
D018	BENZENE	55	GALLONS	GENERATED	96

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE	TUMOR	MUTAG	REPRO	IRRIT	MCL

		TOX	TOX	TOX	TOX	TOX	
BENZENE	71432	X	X	X	X	X	5 ug/L

**** CHEMICAL STORAGE FACILITIES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS ****

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 64 **ROCKAWAY WATER POLLUTION CONTROL PLANT** **Facility Id 2-000231**
BEACH CHANNEL DRIVE & 106 STREET ROCKAWAY, NY 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 1189 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: BEACH CHANNEL DR / BEACH 106TH ST
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 08/27/2001
Operator Name: ANDREW DIPACE Facility Phone #: (718) 474-3663
Site Status: ACTIVE Site Type: UTILITY (I.E. WASTEWATER TREATMENT PLANT)

TANK NUMBER	TANK STATUS	CHEMICAL NAME	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	DATE CLOSED
4211	IN SERVICE	SODIUM HYPOCHLORITE	6000	ABOVEGROUND	00/00	
4212	IN SERVICE	SODIUM HYPOCHLORITE	6000	ABOVEGROUND	00/00	
4213	IN SERVICE	SODIUM HYPOCHLORITE	12000	ABOVEGROUND	00/00	
4214	IN SERVICE	SODIUM HYPOCHLORITE	12000	ABOVEGROUND	00/00	
R0001	IN SERVICE	SODIUM HYPOCHLORITE	12000	ABOVEGROUND	00/00	
The following tank(s) were either deleted from the reported data or the number was re-assigned.						
R0002	IN SERVICE	SODIUM HYPOCHLORITE	12000	ABOVEGROUND	00/00	
R0003	IN SERVICE	SODIUM HYPOCHLORITE	6000	ABOVEGROUND	00/00	
R0004	IN SERVICE	SODIUM HYPOCHLORITE	6000	ABOVEGROUND	00/00	

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
SODIUM HYPOCHLORITE	7681529	X	X	X		X	

**** NO TOXIC AIR, LAND AND WATER RELEASES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS ****

**** HISTORIC UTILITY SITES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS ****

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 65

QUEENS NY

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street:
Revised zip code: 11694

DATE ASSOCIATED WITH THIS SITE BY
REFERENCED HISTORICAL RECORDS: 1912

COMPANY NAME ASSOCIATED WITH THIS SITES: QUEENS BORO GAS AND EL CO

FACILITY TYPE(S) FOUND AT THIS LOCATION: GENERATING HOUSE
HOLDER
MACHINE REPAIR SHOP
OIL OR GAS TANKS
BOILER HOUSE

Map Identification Number 66

QUEENS NY

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: BEACH CHANNEL AV & WAINWRIGHT
Revised zip code: 11694

DATE ASSOCIATED WITH THIS SITE BY
REFERENCED HISTORICAL RECORDS: 1933

COMPANY NAME ASSOCIATED WITH THIS SITES: QUEENS BORO GAS & EL LT

FACILITY TYPE(S) FOUND AT THIS LOCATION: COKE STORAGE
EXHAUSTER HOUSE

PURIFIER HOUSE
BOILER HOUSE

**** WASTEWATER DISCHARGES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS ****

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 67 **ROCKAWAY WTP** **Facility Id: NY0026221** **EPA(FINDS) Id: NYD987010576**
BEACH CHANNEL DRIVE & 106TH ST NEW YORK, NY 11694
EPA (FINDS) Name: ROCKAWAY WTP
EPA (FINDS) Address: BEACH CHANNEL DRIVE & 106TH ST NEW YORK 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 1184 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: BEACH CHANNEL DRIVE /BEACH 106TH ST
Revised zip code: NO CHANGE

STANDARD INDUSTRIAL CODE DESCRIPTION	FACILITY TYPE	DISCHARGE INDICATOR	FACILITY STATUS	PERMIT ISSUED DATE
SEWERAGE SYSTEMS	MUNICIPAL	MAJOR	ACTIVE	112895

**** AIR DISCHARGE FACILITIES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS ****

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 68 **MOBIL** **State-county CDS Id: 3608100172**
112-01 BEACH CHANNEL ROCKAWAY BEACH, NY 11694 State-county NED id:
EPA (FINDS) Name: MOBIL
EPA (FINDS) Address: 112-01 BEACH CHANNEL ROCKAWAY BEACH 11694

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 585 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 11201 BEACH CHANNEL DR
Revised zip code: NO CHANGE

CDS-ID: 00172 NED-ID: None Given EPA-ID: NYD986956357 FINDS-ID: NYD986956357
Plant Phone #1: None Given Plant Phone #2: None Given
Operating Status: OPERATING
EPA Classification:
State Classification: POTENTIAL UNCONTROLLED EMISSIONS < 100 TONS/YEAR
EPA Plant Compliance Status:
State Plant Compliance Status: IN COMPLIANCE - INSPECTION

AIR PROGRAM INFORMATION
Regulatory Air Program: SIP SOURCE Program Status: OPERATING

POLLUTANT INFORMATION
Pollutant: VOLATILE ORGANIC COMPOUNDS
State Pollutant Compliance for this pollutant: IN COMPLIANCE - INSPECTION

**** NO CIVIL ENFORCEMENT DOCKET FACILITIES IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS ****

U.S. EPA EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS)
AT THE LOCATION OR POTENTIALLY AT THE LOCATION OF
109-11 Beach Channel Dr
Rockaway Park, NY 11694

* Any ERNS Spills listed below are NOT mapped in this report *

ONSITE ERNS (A count of these spills can be found in the distance interval table):
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

POTENTIALLY ONSITE ERNS:
****

Spill Number (ID): 556064 Spill Date: 09/12/1997

Location: 100 AND 10TH STREET AND BEACH CHANNEL
Spill City: ROCK PARK NY

Material Spilled	Quantity Spilled	Units	Pounds	Quantity Released in Water	Units	Casno
OIL, MISC: TRANSFORMER	0.00	UNK	0.00	0.00	NON	

Potentially Responsible Party (Discharger): NYC TRANSIT
Discharger Address: 370 JAY
BROOKLYN NY 11201
Dun and Bradstreet Number: Organization Type: LOCAL GOVERNMENT

Medium(s) Affected:
Air: F Land: T Water: F Groundwater: F Contained within Fixed Facility: F Other: F
Waterway Affected: SOIL
Damages Incurred: F Estimated Cost of Property Damage: $0.00

Cause(s):
Transportation Accident: F Equipment Failure: F
Operator Error: F Natural Phenomenon: F
Dumping: F Other Cause: F
Unknown: F
Cause of the incident: Source of Release:
Type of Transportation Involved: FIXED FACILITY

Action: ORIGINALLY 4000 GAL CONTAINED IN TRANSFORMER / UNKNOWN REMAINING AMOUNTVISIBLE STAINING OF SOIL EXISTED NEAR TRANSFORMER

Description: OLD TRANSFORMER / CAUSE OF RELEASE UNKNOWN

Miscellaneous: CONTACT PERSON: JOHN COLON (718) 243-5366,OR 5367, OR 5368

****

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Unmappable facilities for 'Queens' County

Solid Waste Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
41T95	TULLY ENVIRONMENTAL, INC.			UNKNOWN
41T63	LIZZA, LIZZA, HOCHREITER			UNKNOWN
41T58	BERLIN WRECKING			UNKNOWN
41T43	SALVATORE RUSSO INC.			UNKNOWN
41T31	M. DELLACONA CARTING T.S.			UNKNOWN
41D09	HARRY M GREENFIELD			UNKNOWN
41D04	MTA DEMO SITE			UNKNOWN
41D03	CAPITAL PROJECT SE-43A			UNKNOWN
41D01	NY NEWS GRAVURE PLANT			UNKNOWN
		STANLEY AVE. & 131 ST.	QUEENS	UNKNOWN
		231ST ST. & 14TH AVE.	QUEENS	UNKNOWN
		ADDESLEIGH PARK	QUEENS	UNKNOWN

Hazardous Spills - TANK FAILURES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9302262	BEACH CHANNEL DR.	JACOB RIIS PARK BLDG 605	BEACH CHANNEL DR.	11694
9607651	YOUNG ISRAEL OF BELLE HAR	BOR	BELLE HARBOR	11694

Hazardous Spills - TANK TEST FAILURES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
8809281	DOS QUEENS NORTH 8	GARAGE 8/DEPT OF SANIT	NEW YORK CITY	UNKNOWN

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9206251				UNKNOWN
9204979				UNKNOWN
9607513	PAERDEGAT BASIN	JAMAICA BAY	BROOKLYN	UNKNOWN
9914381	NYC TRANSIT FACILITY	HAMMELS WYE	FAR ROCKAWAY	UNKNOWN
9912790		154-11 HORACE HARDING EXP	FLUSHING	UNKNOWN
9900404	VACANT LOT NEAR FRESH MEA	DOW LAKE	FLUSHING	UNKNOWN
9906958	OUTFALL #10/JAMICA BAY	BAY SERVICE RD	JAMACIA	UNKNOWN
9807354		JAMACIA BAY	JAMACIA	UNKNOWN
9809083	LONG ISLAND CITY PASSENGE	R YARD	LONG ISLAND CITY	UNKNOWN
9904431		FLUSHING/QUARTER AVE	MANHATTAN	UNKNOWN
0003151	VS 1861	S SERVICE RD/JUNCTION BL	NEW YORK	UNKNOWN
9914418	MANHOLE #11470	SO SERVICE RD	NYC	UNKNOWN
9910533	SERVICE BOX 8157	IFO 133 GERRY ST	QUEENS	UNKNOWN
9909575	TALLMAN ISLAND REG. #6	TALLMAN ISLAND	QUEENS	UNKNOWN
9906772	LONG ISLAND SOUND	BAYSHORE MARINA	QUEENS	UNKNOWN
9905090	JAMAICA SUB STATION	VALLEY STREAM SUB STATION	QUEENS	UNKNOWN
9901895	MANHOLE 16465	NORTHSIDE OF SOUTH ROAD	QUEENS	UNKNOWN
9900492	POLE T47	SOUTH 123RD AVE E OF 142D	QUEENS	UNKNOWN
9710826	INSIDE PARK	NO PERIMETER RD/RODMAN ST	QUEENS	UNKNOWN
9607526	PAERDEGAT BASIN	JAMAICA BAY	QUEENS	UNKNOWN
9206327	DOCK FOR COMMUTER III	DOCK FOR COMMUTER III	QUEENS	UNKNOWN
0003487	MH 14251	SOUTH RD/SUFTEN BLVD	QUEENS	UNKNOWN
0003486	MANHOLE 13883	SUPTHIN BL/BRINKER HOFF	QUEENS	UNKNOWN
0003485	MH 13846	SUPHTEN BLVD/107 AV	QUEENS	UNKNOWN
0001764	MAN HOLE #14251	SOUTH RD & CUTPHIN BLVD	QUEENS	UNKNOWN
9912344		111-30 WHITTHOFF ST	QUEENS VILLAGE	UNKNOWN

Hazardous Spills - MISC. SPILL CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9809489	GLOBAL TRAVEL WAYS	OPPOSITE 126 POWER CLOVE	BLVD - QUEENS	UNKNOWN

9808321	LONG ISLAND CITY RAILROAD	PASSENGER YARD	LONG ISLAND	UNKNOWN
9911211	ROADWAY	253536TH ST	LONG ISLAND CITY	UNKNOWN
9909791	MANHOLE 5292	LIBERTY STREET AT BARBEY	NEW YORK	UNKNOWN
9909841	TM 6003	EAST 111 ST & ASTORIA	NEW YORK CITY	UNKNOWN
9707611	MAIN LINE 3	5505 E OF 37 SIGNAL BRIDG	NEW YORK CITY	UNKNOWN
9008367	42-25 115TH ST/QUEENS	42-25 115TH STREET	NEW YORK CITY	UNKNOWN
9703543	JAMICA BAY	NO CHANNEL BRIDGE/TRESSEL	NYC	UNKNOWN
9907690	RANNEY SUB STATION	35 VERDI BLVD	QUEENS	UNKNOWN
9905806	MANHOLE 1788	101 AVE NORTHSIDE	QUEENS	UNKNOWN
9905002	POLE T32	IFO 164-14 GRYDERS LN	QUEENS	UNKNOWN
9904946	MANHOLE 5293	LIBERTY AVE/JEROME ST	QUEENS	UNKNOWN
9903957	MANHOLE 167340	SUTTER AV/PINE ST	QUEENS	UNKNOWN
9811507	TALLMAN REGULATOR 57	FLUSHING BAY	QUEENS	UNKNOWN
9806039	LONG ISLAND RR	HILLSIDE FACILITY	QUEENS	UNKNOWN
9706370	FEEDER #61	BETWEEN RANEY & FARAGON	QUEENS	UNKNOWN
9700709	CEDAR MANOR SUB STATION	CEDAR MANOR SUB STATION	QUEENS	UNKNOWN
9601287	LONG ISLAND RAILROAD	HILLSIDE MAINT.COMPLEX	QUEENS	UNKNOWN
9013326	RAINEY TO DUNWOODIE S/S	RAINEY TO DUNWOODIE S/S	QUEENS	UNKNOWN
0002750	OAKLAND UNIT SUB STATION	HORACE HARDING EXP	QUEENS	UNKNOWN
9811195	ROCKAWAY WATER POLLUTION	ROCKAWAY BEACH BOULEVARD	ROCKAWAY	UNKNOWN

Hazardous Spills - TANK FAILURES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9307407	WEST OF MASPETH	WEST OF MASPETH	QUEENS	UNKNOWN
0002634	188 BEACH AVE	BROAKAWAY BEACH BLVD	QUEENS	11694

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9303003	SOUTH SIDE ROCKAWAY BEACH	SOUTH SIDE ROCKAWAY BEACH		UNKNOWN
9210559				UNKNOWN
8606300				UNKNOWN
8504394	QUEENS, QUEENS COUNTY	QUEENS, QUEENS COUNTY‘ADJ	ACENT ROCKAWAY BLVD	UNKNOWN
9903134	221-41 HORACE HARDING EXP	SAME	BAYSIDE	UNKNOWN
8902326	UPPER NY BAY	GOWANUS CNL TO LOOKOUT PT	BKLN	UNKNOWN
9204100	ROCKAWAY BEACH	ROCKAWAY BEACH	BKLYN	UNKNOWN
9203903	ATLANTIC OCEAN	ATLANTIC OCEAN	BKLYN	UNKNOWN
9201948	ROCKAWAY BEACH INLET	ROCKAWAY BEACH INLET	BREEZY PT, BKLYN	UNKNOWN
9905248	ROCKAWAY BEACH	116TH ST	BROOKLYN	UNKNOWN
9712210	SILKEBORG VESSEL	BERTH 5	BROOKLYN	UNKNOWN
9302379	EUGENE THOMAS	GURITZON BASIN	BROOKLYN, N.Y.	UNKNOWN
8504087	UNKNOWN	UNKNOWN	FLUSHING, QUEENS	UNKNOWN
9309719	STATE ROAD - ROCKAWAY INL	STATE ROAD - ROCKAWAY INL	FORT TILDEN	UNKNOWN
9405847	SHELL BANK BASIN CANAL	SHELL BANK BASIN CANAL	HOWARD BEACH	UNKNOWN
9813750	MANHOLE 13649	EAST SERVICE ROAD	NEW YORK	UNKNOWN
9102463	JAMAICA BAY/BCH CHNNEL DR	JAMAICA BAY/BCH CHNNEL DR	NEW YORK CITY	UNKNOWN
9100508	ARVERNON BASIN/QUEENS	ARVERNON BASIN	NEW YORK CITY	UNKNOWN
9000248	LIRR/JAMAICA STORAGE FAC	LIRR/JAMAICA STORAGE FAC	NEW YORK CITY	UNKNOWN
8909963	RULERS BAR HASSOCK/QUEENS	RULERS BAR HASSOCK	NEW YORK CITY	UNKNOWN
8809899	MASPETH CROSSING/QUEENS	MASPETH CROSSING/JAMAICA	NEW YORK CITY	UNKNOWN
9901392	TALLMAN ISLAND REGULATOR	57	NYC	UNKNOWN
8805609	SHELLBANK BASIN	SHELLBANK BASIN	NYC	UNKNOWN
9813286	VAULT #1	75-77 RUST ST	QUEENS	UNKNOWN
9811502	FLUSHING BAY	REGULATOR 57	QUEENS	UNKNOWN
9800424	JAMACIA BAY	BROAD ISLAND CHANNEL	QUEENS	UNKNOWN
9705198	JAMAICA BAY	BOUY 23 MILE MAN PARK	QUEENS	UNKNOWN
9601263	TEXACO	ROCKWAY BLVD	QUEENS	UNKNOWN
9507804	AREA OF AMBROSE LIGHT	SAME	QUEENS	UNKNOWN
9502637	UNK	7 MIDLAND GARDEN	QUEENS	UNKNOWN
9411488	# 5 ROCKAWAY INLET	# 5 ROCKAWAY INLET	QUEENS	UNKNOWN
9402440	GRASSY BAY	GRASSY BAY	QUEENS	UNKNOWN

9315581	EAST OF BOUY #9	EAST OF BOUY #9	QUEENS	UNKNOWN
9312485	BACELLENA PT. LIGHT #7.	BACELLENA PT. LIGHT #7.	QUEENS	UNKNOWN
9305134	ON JAMAICA BAY	ON JAMAICA BAY	QUEENS	UNKNOWN
9302062	103 RD ST ROCKWAY	ROCKAWAY BEACH	QUEENS	11694
9105909	RIIS PARK BEACH	RIIS PARK BEACH	QUEENS	UNKNOWN
8503726	QUEENS	QUEENS	QUEENS	UNKNOWN
8503213	FLUSHING QUEENS	FLUSHING QUEENS	QUEENS	UNKNOWN
8503093	QUEENS	QUEENS	QUEENS	UNKNOWN
8000260			QUEENS	UNKNOWN
7801404	MIDLAND TAXI,SBWY-MIDLND.	MIDLAND TAXI,SBWY-MIDLND.	QUEENS	UNKNOWN
7800519	DREDGE PENNSYLVANIA	DREDGE PENNSYLVANIA	QUEENS	UNKNOWN
9515851	241 BEACH CHANNEL DR /119	241 BEACH CHANNEL DR/119	ROCKAWAY	UNKNOWN
9306959	JAMAICA BAY - ROCKAWAY	JAMAICA BAY	ROCKAWAY	UNKNOWN
9302058	CROSSBAY BLVD	SEA SIDE CROSSBAY BLVD	ROCKAWAY BEACH	UNKNOWN
8606671	ROCKAWAY BCH, QUEENS/TAR	ROCKAWAY BEACH	ROCKAWAY BEACH	UNKNOWN
9509383	BREEZY POINT-ROCKWAY PT B	OLD LIGHTHOUSE TOWER	ROCKWAY BEACH	UNKNOWN
9905398	JAMAICA BAY INLET	250 804 KRAFT AVE	ROSEDALE	UNKNOWN

Hazardous Spills - MISC. SPILL CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
8807410	TBTA - QUEENS			UNKNOWN
8709858	NAMEOKE PUMPING STATION	NAMEOKE PUMPING STATION		UNKNOWN
9407761	BUS STATION	2449 HARWAY AVE.	ASTORIA	UNKNOWN
9111782	ATLANTIC OCEAN	ATLANTIC OCEAN	BKLYN	UNKNOWN
9613013	NEW YORK HARBOR	1 MILE WEST OF ROCKAWAY	BROOKLYN	UNKNOWN
9302556	OFF BELT PKWAY	OFF BELT PKWAY	BROOKLYN	UNKNOWN
9411398	JAMAICA BAY MANOR	BEACH CHANNEL RR-JAMAICA	EAST ROCKAWAY	UNKNOWN
9601153	121 ST	121 ST	FAR ROCKAWY	UNKNOWN
9206497	STADIUM ROAD	STADIUM ROAD	FLUSHING	UNKNOWN
9904401	RESIDENCE	19 MARKWOOD PLACE	FOREST HILLS	UNKNOWN
9411045	16 KRANFORTH ST	16 KRANFORTH ST	FOREST HILLS	UNKNOWN
9408397	JAMAICA STORAGE YARD	JAMAICA STORAGE YARD	JAMAICA	UNKNOWN
9305966	JAMAICA BAY #30	JAMAICA BAY #30	JAMAICA	UNKNOWN
9208885	BEACH CHANNEL DRIVE	BEACH CHANNEL DRIVE	JAMAICA	UNKNOWN
9403980	LOG ISALND RAILROAD	LONG ISLAND RAILROAD	JAMAICA, NEW YORK	UNKNOWN
9416874	GASETERIA STATION #5	GASETERIA S/S #5	LONG ISLAND CITY	UNKNOWN
9800287	MANHATTAN BEACH	MANHATTAN BEACH	MANHATTAN	UNKNOWN
9100484	ROCKAWAY BEACH BLVD/QUNS0	ROCKAWAY BEACH BLVD	NEW YORK CITY	UNKNOWN
9001315	JAMAICA BAY/FLATBUSH/BKLY	JAMAICA BAY/FLATBUSH	NEW YORK CITY	UNKNOWN
9000243	VAN GRUNT PUMP STATION	VAN GRUNT PUMP STATION	NEW YORK CITY	UNKNOWN
8905650	122-16 3RD ST/QUEENS	122-16 3RD STREET	NEW YORK CITY	UNKNOWN
8709860	BYPASS/BKLYN	BKYLN	NEW YORK CITY	UNKNOWN
8707226	AMBROSE CHANNELS/QUEENS	AMBROSE CHANNELS	NEW YORK CITY	UNKNOWN
8706687	REG #D-23/B'KLYN/BCH CHAN	REG #D-23/BCH CHANNEL DR	NEW YORK CITY	UNKNOWN
8803149	POLE TOP TRNSFRMER	CROSS ST & BEACH CHNNL DR	NYC	UNKNOWN
9910088	JAMACIA BAY WILDLIFE RES.	NORTH DYKE RD	QUEENS	UNKNOWN
9709630	4225 MAY STREET	4225 MAY STREET	QUEENS	UNKNOWN
9506585	122TH ST & BROADWAY	122TH ST & BROADWAY	QUEENS	UNKNOWN
9312484	JONES INLET BOUY #4.	JONES INLET BOUY #4	QUEENS	UNKNOWN
9312483	RUNWAY CHANNEL	RUNWAY CHANNEL	QUEENS	UNKNOWN
9311790	1/4 NORTH SUBWAY BR IN	1/4 NORTH SUBWAY BR IN	QUEENS	UNKNOWN
9303513	ROCKAWAY PARK-JAMAICA BAY	ROCKAWAY PARK-JAMAICA BAY	QUEENS	11694
9301896	NORWEGIAN "ARILE"	2 MILES N.E.OFF AMBROS LH	QUEENS	UNKNOWN
9211109	PAEDEGATE PS	PAEDEGATE PS	QUEENS	UNKNOWN
9209591	ROCKAWAY INLET/LOWER BAY	ROCKAWAY INLET/LOWER BAY	QUEENS	UNKNOWN
9903021	MARINE PARKWAY BRIDGE	ROCKAWAY SIDE OF BRIDGE	ROCKAWAY	11694
9704873	0	BARREN ISLAND MARINA	ROCKAWAY	UNKNOWN
9206809	1 NORTILLE	1 NORTILLE	ROCKAWAY	UNKNOWN
9213738	BEACH CHANNEL DRIVE	BEACH CHANNEL DRIVE	ROCKAWAY BEACH	UNKNOWN
9207375	BEACH 116TH STREET	BEACH 116TH STREET	ROCKAWAY PARK	11694

9415423	1901 121ST AVENUE	1901 12ST STREET	ST. ALBANS	UNKNOWN

Hazardous Waste Generation or Transport Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYP980593636	CON ED	21557 SHEMAN BLVD EXT		UNKNOWN
NYP004026845	CONSOLIDATED EDISON CO	MH15520		UNKNOWN
NYP004026829	CONSOLIDATED EDISON CO	MH10118 PAULDING ST		UNKNOWN
NYP004026746	CONSOLIDATED EDISON CO	MH61418 PARK AVE & CLINTON		UNKNOWN
NYP004026720	CON ED	MH2097X GUNTHER AVE & SMART		UNKNOWN
NYP004026647	CON ED	V6802 1 STATE ST		UNKNOWN
NYP004026639	CONSOLIDATED EDISON CO	V8523 KEN GARDEN		UNKNOWN
NYP004026407	CON ED	MH56240		UNKNOWN
NYP004026399	CON ED	MH840 CP AVE & CROSS ST		UNKNOWN
NYP004026381	CON ED	MH841 S BOUND CPA & CROSS ST		UNKNOWN
NYP004026019	CONSOLIDATED EDISON CO	MH2246		UNKNOWN
NYP004025881	CON ED	WEST AVE & HOJVEY PLFEED 7		UNKNOWN
NYP004025854	CON ED	MH0174 MIDLAND & WINDOVER		UNKNOWN
NYP004025565	CONSOLIDATED EDISON CO	#57283 120 ST		UNKNOWN
NYP004025342	CONSOLIDATED EDISON CO	VS7865		UNKNOWN
NYP004025235	CON ED MH02879	HOYT 7 SCHERMERHORN		UNKNOWN
NYP004024881	CON ED FEEDER 72	WEST AVE & HEJVEY PL		UNKNOWN
NYP004024758	CON ED MH156	435 SO CITYLINE ST		UNKNOWN
NYP004024642	CON ED	MH35319		UNKNOWN
NYP004024576	CONSOLIDATED EDISON CO	OPEN EXCAVATION22-3441 ST		UNKNOWN
NYP004024428	CON ED	MH 16165		UNKNOWN
NYP004024139	CONSOLIDATED EDISON CO	V8469		UNKNOWN
NYP004024006	CONSOLIDATED EDISON CO	MH167 NEW SCHOOL & PALKADE		UNKNOWN
NYP004023842	CONSOLIDATED EDISON CO	MH LIBERTY & COMFORT		UNKNOWN
NYP004023438	CON ED	7119 85 BEECHNUT		UNKNOWN
NYP004023156	CON ED	V407395TH AVE		UNKNOWN
NYP004022851	CONSOLIDATED EDISON CO	OXFORD RD & OXFORD PL CNR		UNKNOWN
NYP004022711	CONSOLIDATED EDISON CO	#5001 BAWT & ODELL AVE		UNKNOWN
NYP004022679	CON ED	V97961 CLAREMONT		UNKNOWN
NYP004022489	CON ED	#20694JERVIS RD		UNKNOWN
NYP004022422	CONSOLIDATED EDISON CO	V5228 FRESIT POMA RD		UNKNOWN
NYP004022067	CONSOLIDATED EDISON CO	MH22404 VAN		UNKNOWN
NYP004022059	CONSOLIDATED EDISON CO	V1708 5 BWAY MAN		UNKNOWN
NYP004022034	CONSOLIDATED EDISON CO	V14 LA COUNT PL		UNKNOWN
NYP004021606	CONSOLIDATED EDISON CO	V4269 THEALL RD		UNKNOWN
NYP004021184	CONSOLIDATED EDISON CO	#8691 ORCHARD & CANAI		UNKNOWN
NYP004020889	CONSOLIDATED EDISON CO	V 9075 AMBOY & ARC PL		UNKNOWN
NYP004020244	CONSOLIDATED EDISON CO	#143-63 21		UNKNOWN
NYP004020129	CONSOLIDATED EDISON CO	MAIN BODY - OAKWOOD S/S		UNKNOWN
NYP004020053	CONSOLIDATED EDISON CO	#4263 PROSPECT PL & CHASSOU AV		UNKNOWN
NYP004019683	CONSOLIDATED EDISON CO	124-153 CAVE		UNKNOWN
NYP004019402	CONSOLIDATED EDISON CO	V512 MAMORONECK		UNKNOWN
NYP004019352	CONED	MH8514 CNTRLPK AVE/MARTIN RAY		UNKNOWN
NYP004019275	CONSOLIDATED EDISON CO	MH51217		UNKNOWN
NYP004019212	CONSOLIDATED EDISON CO	JACKSON ST & GOV SLIP		UNKNOWN
NYP004019147	CONSOLIDATED EDISON CO	#6802 1 STATE ST PLAZA		UNKNOWN
NYP004019048	CONSOLIDATED EDISON CO	TRANS#1 HARRISON S/S		UNKNOWN
NYP004018982	CONSOLIDATED EDISON CO	MH9627 HARRISON STA		UNKNOWN
NYP004018859	CONSOLIDATED EDISON CO	S/S BROWNVILLE		UNKNOWN
NYP004018610	CONSOLIDATED EDISON CO	M11573		UNKNOWN
NYP004018602	CONSOLIDATED EDISON CO	M11571		UNKNOWN
NYP004018594	CONSOLIDATED EDISON CO	M11570 300' N/O PUROY AVE		UNKNOWN
NYP004018339	CONSOLIDATED EDISON CO	V2658 24 COASTLANAT ST		UNKNOWN
NYP004017877	CONSOLIDATED EDISON CO	#5482 1ST PURDS AVE		UNKNOWN
NYP004015848	CON ED	116-02 KAVE		UNKNOWN
NYP004015723	CON ED	15194 - 2700 GRAND COURT		UNKNOWN

NYP004014775	CON ED		V 3164 − WESTCHESTER & THERS	UNKNOWN
NYP004014726	CON ED		BURNSHORE AVE	UNKNOWN
NYP004014692	CON ED		#00691 − E/S GORD & YORK	UNKNOWN
NYP004014569	CON ED		1123 − SANFORD & C. PB	UNKNOWN
NYP004014551	CON ED		V 508 −C/O VERDALE & 57 R	UNKNOWN
NYP004014346	CON ED		V 320 − THORNTON BURN	UNKNOWN
NYP004013454	CON ED			UNKNOWN
NYP004013223	CON ED		GLENDALE S/S	UNKNOWN
NYP004012538	CON ED		MH 4481 − 465 PARK PL	UNKNOWN
NYP004012514	CON ED		16 − SHERWOOD PARK	UNKNOWN
NYP004012498	CON ED		V 1064 − 137 ST	UNKNOWN
NYP004012472	CON ED		MH 46939 − F/O 117 & 25 ST	UNKNOWN
NYP004012357	CON ED		V 3965 − 41 NEW ST	UNKNOWN
NYP004012324	CON ED		V4653 − 41 NEW ST	UNKNOWN
NYP004011367	CON ED		TAP CHANGER − LAWRENCE PK #44	UNKNOWN
NYP004011037	CON ED		1B54 − BRIDGE − JOHNSON	UNKNOWN
NYP004010765	CON ED		POT HEAD − SEASIDE SS #1	UNKNOWN
NYP004009841	CON ED		03590 − BEDFORD & CANES	UNKNOWN
NYP004009775	CON ED		MH 12060	UNKNOWN
NYP004009684	CON ED		0272 − 2 CEDAR ST	UNKNOWN
NYP004009452	CON ED		MH 2079Y	UNKNOWN
NYP004009080	CONSOLIDATED EDISON CO		MH 12270	UNKNOWN
NYP004009031	CON ED		MH 57249 − E/S CPW 82 S/S/C	UNKNOWN
NYP004009007	CON ED		MH 3289 − DUNNING DR	UNKNOWN
NYP004008918	CON ED		V 1138 − 61 MAIDEN	UNKNOWN
NYP004008850	CON ED		TM 1301	UNKNOWN
NYP004008785	CON ED		MH 2631	UNKNOWN
NYP004008405	CON ED		TRANS #1 GEAR BOX−HARRISON S/S	UNKNOWN
NYP004008248	CON ED			UNKNOWN
NYP004008231	CON ED		V 5234 − 3−SADGRELA	UNKNOWN
NYP004008082	CON ED		VS 1791 − MCCLELLAN G COVE	UNKNOWN
NYP004007928	CON ED		V 516A − SPLIT ROCK GHC	UNKNOWN
NYP004007910	CON ED		V 1296C − PASCAP	UNKNOWN
NYP004007472	CONSOLIDATED EDISON CO	V 433	MAIN AND MOGER	UNKNOWN
NYP004007456	CON ED		V 3408 − KRAFT	UNKNOWN
NYP004007308	CON ED		MH 3924 − PALMER FERN. TER	UNKNOWN
NYP004007290	CON ED		46251 −	UNKNOWN
NYP004006789	CON ED		M BODY − HELENA S/S	UNKNOWN
NYP004006763	CON ED		9736 − SO. MOYER & BRITTON	UNKNOWN
NYP004006524	CON ED		MH #4864	UNKNOWN
NYP004006516	CON ED		MH #3744	UNKNOWN
NYP004006490	CON ED		MH #3743	UNKNOWN
NYP004006318	CON ED		V #5014 − W.F. ADMIN BLDG	UNKNOWN
NYP004006078	CON ED		V #6079 − UNIVERSITY PL	UNKNOWN
NYP004006029	CON ED		V 3588 − NORM AVE	UNKNOWN
NYP004005914	CON ED		V 5196 − 450 MAMK	UNKNOWN
NYP004005690	CON ED		MH#17826 − MT. OLIVER	UNKNOWN
NYP004005112	CON ED		VAULT 8500 − 9 PARK PLACE	UNKNOWN
NYP004004982	CON ED		#4844 − GRAND	UNKNOWN
NYP004004925	CON ED		VAULT #0442 − 1548	UNKNOWN
NYP004004875	CON ED		PALMER AVE & SPENCER DR	UNKNOWN
NYP004004834	CONSOLIDATED EDISON CO		GREY OAKS S/S 13	UNKNOWN
NYP004004750	CON ED		V 5639 − 41 MAIDEN LA	UNKNOWN
NYP004004701	CON ED		VAULT 5168 − RT 117 READ	UNKNOWN
NYP004004677	CON ED			UNKNOWN
NYP004004586	CON ED		#52 − BONNIE BRIAR	UNKNOWN
NYP004004479	CON ED		V#4841 − STUYVEWT GATES	UNKNOWN
NYP004004461	CON ED			UNKNOWN
NYP004004081	CON ED		MH#34631 34SP	UNKNOWN
NYP004003604	CONSOLIDATED EDISON CO		LAWRENCE PARK 44	UNKNOWN

NYP004002945	CON ED	TM0630 − MELROSE		UNKNOWN
NYP004002739	CONSOLIDATED EDISON CO	SUTTER TM750		UNKNOWN
NYP004002648	CONSOLIDATED EDISON CO	46 R/D 2759		UNKNOWN
NYP004002200	CONSOLIDATED EDISON CO	STORY 832		UNKNOWN
NYP004002119	CONSOLIDATED EDISON CO SEASIDE II	SEAVIEW AND LR−CAHLAN		UNKNOWN
NYP004001855	CONSOLIDATED EDISON CO	BROADWAY 6526		UNKNOWN
NYP004001848	CONSOLIDATED EDISON CO	BENEDICT F/O 410 MH3279		UNKNOWN
NYP004001798	CONSOLIDATED EDISON CO	BOWY V5925		UNKNOWN
NYP004001665	CONSOLIDATED EDISON CO VAULT 1793	THWAITES PL AND BARNES AVE		UNKNOWN
NYP004001582	CONSOLIDATED EDISON CO	176 JAMAICA 8909		UNKNOWN
NYP004001475	CONSOLIDATED EDISON CO	55 DL(?) V0707		UNKNOWN
NYP004001376	CONSOLIDATED EDISON CO	65−75 TRAFF ST VAULT 1045		UNKNOWN
NYP004001350	CONSOLIDATED EDISON CO VAULT 2039	3201 GRAND COLMAN AVE (???)		UNKNOWN
NYP004001319	CONSOLIDATED EDISON CO	CROSBY 165		UNKNOWN
NYP004001285	CONSOLIDATED EDISON CO	JAY STREET AND ????? 66220		UNKNOWN
NYP004000824	CONSOLIDATED EDISON CO	FDR DRIVE MH53857		UNKNOWN
NYP004000758	CONSOLIDATED EDISON CO	250 CLEARBROOK V9809		UNKNOWN
NYP004000634	CONSOLIDATED EDISON CO V 7176	WEST HILL APARTMENTS		UNKNOWN
NYP004000121	CONSOLIDATED EDISON CO VAULT 10829	2255 MENAUTO BOULEVARD		UNKNOWN
NYP001012100	CON ED	WHITE PLAINS SUBSTATION		UNKNOWN
NYP000931006	CONSOLIDATED EDISON CO	33RD AND 105TH		UNKNOWN
NYP000930891	CONSOLIDATED EDISON CO MH4800	LEFFCAL ST (?) AND BEL FORD		UNKNOWN
NYP000930719	CON ED	V #530 − RUPERT PL		UNKNOWN
NYP000930479	CONSOLIDATED EDISON CO	LENOX V6213		UNKNOWN
NYP000930354	CON ED	#5344 − 10 COUNTY CENT		UNKNOWN
NYP000930321	CONSOLIDATED EDISON CO OF NY INC			UNKNOWN
NYP000930255	CON ED	MAIN BODY − LEPRERTS MB		UNKNOWN
NYP000929562	CON ED	V 1575 − MANOR PL		UNKNOWN
NYP000929453	CON ED	V 4777 − ELDERT		UNKNOWN
NYP000929414	CON ED	V 0024 − NEW BOLD		UNKNOWN
NYP000762218	CON ED	MH#1942		UNKNOWN
NYP000007120	CONSOLIDATED EDISON CO	BUS SEC 4WFARRAJAT S/S		UNKNOWN
NYO004022968	MH6925	CONCORD BRIDGE		UNKNOWN
NY0000010363	NEW YORK CITY DEPT OF TRANSPORTATION			UNKNOWN
NYP004020897	CONSOLIDATED EDISON CO	MH26586 WEBSTER AV 26'S−WEBSTR	BRONX	UNKNOWN
NYP004009502	CON ED	MH 55661 − FLEETNACK & JOHNSON	BROOKLYN	UNKNOWN
NYP000921049	LONG ISLAND LIGHTING	BEACH CHANNEL DR	FAR ROCKAWAY	UNKNOWN
NY9140011694	USDOI−JACOB RIIS PARK BATH HOUSE	FLATBUSH/BEACH CHANNEL DRIVE	FAR ROCKAWAY	UNKNOWN
NYP000921932	NYNEX		JAMAICA	UNKNOWN
NYD000818427	LONG ISLAND RAIL ROAD	JAMAICA STATION FREIGHT TRANSP	JAMAICA	UNKNOWN
NYP004016176	CON ED	WILLIAMS LIBERTY B	NASSAU	UNKNOWN
NYP004022257	CON ED	#6347119 ST 7 PLEASENT	NEW YORK	UNKNOWN
NYP004021945	CONSOLIDATED EDISON	#4694545 WILLY	NEW YORK	UNKNOWN
NYD000363234	ISLAND TRANSPORTATION	185 STCITCO STATION	QUEENS	UNKNOWN
NYP010001709	NYC DEPT OF ENV PROTECTION/HAZ MAT	BEACH CHANNEL DR	ROCKAWAY	UNKNOWN
NYP004002709	CONSOLIDATED EDISON		T/A450	UNKNOWN

Wastewater Discharges

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NY0234711	H L & F MCBRIDE FACILITY			UNKNOWN
NY0200824	J B WASTE OIL CO, INC			UNKNOWN

Air Releases

FACILITY ID	FACILITY NAME		STREET	CITY	ZIP
3688800011	USCG−LIGHT STATION		AMBROSE	NEW YORK	UNKNOWN
3606100071	USCG−LIGHT		SUNKEN MEADOWS	NEW YORK CITY	UNKNOWN
36081X72J	A & K REALTY	QUEENS	NO STREET ADDRESS	NO CITY NAME	UNKNOWN
36081X4KU	COSMOPOLITAN ASSOC	QUEENS	NO STREET ADDRESS	NO CITY NAME	UNKNOWN
36081X1L5	CRYDER ASSOCIATES LTD	QUEENS	NO STREET ADDRESS	NO CITY NAME	UNKNOWN
3608100693	ASTORIA AL & BR		NO STREET ADDRESS	QUEENS	UNKNOWN

3608100692	PARIS KNITTING	NO STREET ADDRESS	QUEENS	UNKNOWN
3608100140	NAVY RESRVE TRAINING	NO STREET ADDRESS	QUEENS	UNKNOWN
3608100139	NY JOB CORPS CENTER	NO STREET ADDRESS	QUEENS	UNKNOWN

Hazardous waste codes presented in individual Toxic Information Profiles are defined below.

B003 Petroleum oil or other liquid containing 500 ppm or greater of PCBs.

B005 PCB Articles containing 500 ppm or greater of PCBs, excluding small capacitors.

B007 Other PCB Wastes including contaminated soil, solids, sludges, clothing, rags, and dredge material.

D008 Lead

D018 BENZENE

D039 Tetrachloroethylene

F002 The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1−trichloroethane, chlorobenzene, 1,1,2−trichloro−1,2,2−trifluoroethane, ortho−dichlorobenzene, trichlorofluoromethane, and 1,1,2−trichloroethane: all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005: and still bottoms from the recovery of these spent solvents and spent solvent mixtures. (T)

Source: U. S. Environmental Protection Agency

How Toxic Site Locations Are Mapped

Toxics Targeting maps toxic site locations on a computerized version of the U. S. Census map using addresses and map coordinates provided by site owners/operators or government agencies. In order to allow site locations to be verified independently, the information used to map each site is presented in the first section of each *Toxic Site Profile,* along with a description of the mapping technique used and any address corrections that were made in order to locate toxic sites with incomplete or inadequate site location information. The mapping process is explained below.

Map Identification Number: 12 Site Name: Acme World Manufacturing, Inc.

Site Address: 55 Main Street Anytown, NY 11797

MAP LOCATION INFORMATION

Site location mapped by:

Address Matching

1) Most toxic sites are mapped by matching addresses provided by site owners/operators or government agencies with locations on a computerized version of the U. S. Census map. These site locations are identified "address-matched."

Note: Some sites have an address match location and a map coordinate location. Both locations are mapped because they can be equally correct.

or Map Coordinate

2) Some toxic sites are located using map coordinates provided by site owners/operators or governnent agencies. These site locations are identified "map coordinate." Map coordinates for Toxics Wastewater Discharges, Toxic Release Inventory sites and Major Oil Storage Facilities should be considered suspect .

or Manual Mapping

or Site Visit

3) Incomplete addresses or map coordinates require some site locations to be determined by commercial street maps (manual mapping), site visits, map coordinates from other databases and address location services. Application of any of these methods is identified accordingly.

ADDRESS CHANGE INFORMATION

Revised Street: NO CHANGE

Revised zip code: NO CHANGE

4) Site addresses are sometimes corrected to eliminate obvious errors that prevent sites from being mapped. All address corrections are noted here.

Information Source Guide

Toxics Targeting's Computerized Environmental Reports contain government and other information compiled on 17 categories of reported known or potential toxic sites. Each toxic site database is described below with information detailing a) the source of the information, b) the date when each database is covered to and c) when *Toxics Targeting* obtained the information..

1) **Inactive Hazardous Waste Disposal Site Registry**: New York State database that maintains information and aids decision making regarding the investigation and cleanup of toxic sites. The Registry's data includes two-page profiles noting site name, ID number, description, classification, cleanup status, types of cleanup, owner information, types and quantities of contaminants, and assessment of health and environmental problems. ASTM required.* Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2]
Profile data updated through: 6/15/1999. Data obtained by Toxics Targeting: 8/1/1999.
New Facilities updated to: 1/1/2000. Data obtained by Toxics Targeting: 2/6/2000.

2) **CERCLIS**: Toxic sites listed in the Federal Comprehensive Environmental Response, Compensation and Liability Information System. NPL sites are also included in CERCLIS. ASTM required.* Fannie Mae required.**
Source: U. S. Environmental Protection Agency.[1]
Profile data updated through: 12/29/1999. Data obtained by Toxics Targeting: 1/2/2000.
New Facilities updated through: 12/29/1999. Data obtained by Toxics Targeting: 1/2/2000.

3) **National Priority List for Federal Superfund Cleanup:** Toxic sites nominated for cleanup under the Federal Superfund program. Annual compilation of special two-page detailed profiles of NPL sites. ASTM required.* Fannie Mae required.**
Source: U. S. Environmental Protection Agency.[1]
Profile data updated through: 4/1999. Data obtained by Toxics Targeting: 6/3/1999.
New Facilities updated through: 8/26/1999. Data obtained by Toxics Targeting: 9/6/1999.

4) **Hazardous Substance Waste Disposal Site Study:** NYS database of waste disposal sites that may pose threats to public health or the environment, but cannot be remediated using monies from the Hazardous Waste Remedial Fund.
Source: New York State Department of Environmental Conservation.[2]
Data updated to: 5/16/2000. Data obtained by Toxics Targeting: 5/16/2000.

5) **Solid Waste Facilities:** NYS database of solid waste facilities, including, but not limited to, landfills, incinerators, transfer stations, recycling centers. ASTM required.* Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2]
Data updated to: 1/01/1998. Data obtained by Toxics Targeting: 6/30/1998.

Also includes a listing of solid waste disposal sites operated by New York City municipal authorities circa 1934.
Source: City of New York Department of Sanitation (1984). Waste Disposal Problem in New York City: A Proposal For Action.

6) **Major Oil Storage Facilities:** NYS database of facilities licensed pursuant The to Article 12 of the Navigation Law, 6NYCRR Parts 610 and 17NYCRR Part 30, such as onshore facilities or vessels, with petroleum storage capacities equal to or greater than four hundred thousand gallons. Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2] Data update schedule: rolling basis.
New facilities updated through: 7/1/2000. New facilities data obtained by Toxics Targeting: 7/17/2000.
Tank data updated through: 7/1/2000. Tank data obtained by Toxics Targeting: 7/17/2000.

7) **RCRA Hazardous Waste Treatment, Storage or Disposal Facility Databases:**

(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the DEC's Bureau of Hazardous Waste Facility Compliance pursuant to New York State Law and the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2]
Manifest transactions data updated to: 1/01/1999. Manifest transactions data obtained by Toxics Targeting: 3/27/1999.
New facilities updated through: 1/01/1999. New facilities obtained by Toxics Targeting: 3/27/1999.

(b) **Notifier Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.**
Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 3/26/1998. Data obtained by Toxics Targeting: 4/9/1998.
Data attributes updated through: 12/22/1998. Data obtained by Toxics Targeting: 3/30/1999.

(c) **RCRA Violations Information:**
U. S. Environmental Protection Agency database of violations data reported for facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 3/26/1998. Data obtained by Toxics Targeting: 4/9/1998.
Data attributes updated through: 12/23/1998. Data obtained by Toxics Targeting: 12/30/1998.

(d) **RCRIS Corrective Action Activity (CORRACTS) Information:** U. S. Environmental Protection Agency (EPA) database of hazardous waste facilities with corrective action activity. This data is part of the RCRIS National Oversight database.
Source: U. S. Environmental Protection Agency[1]
Data updated through: 4/20/2000. Data obtained by Toxics Targeting: 5/10/2000.

8) **Spills Information Database:** Spills reported to the DEC as required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from Petroleum Bulk Storage Regulations) or 6 NYCRR Section 595.2 (from Chemical Bulk Storage Regulations). The database includes *active* and *closed* spills reported between 4/1/1986 and 1/1/2000.
ASTM required.* Fannie Mae.** Source: NYS Department of Environmental Conservation.[2]
New spill additions data updated through: 7/1/2000. New spill additions data obtained by Toxics Targeting: 7/17/2000.
Spill attribute data updated through: 7/1/2000. Spill attribute data obtained by Toxics Targeting: 7/17/2000.

Active spills: paperwork not completed. Closed spills: paperwork completed.
Both active and closed spills may or may not have been cleaned up (see Date Cleanup Ceased in spill profiles).

9) **Petroleum Bulk Storage Facilities:** Local and State databases of aboveground and underground petroleum storage facilities with a combined storage capacity over 1,100 gallons. ASTM required.* Fannie Mae required.**

All New York Counties except Cortland, Nassau, Rockland, and Suffolk:
Source: NYS Department of Environmental Conservation.[2]
Update schedule: rolling basis, with summary compilations made available approximately every three months
Facility data updated through: 7/1/1999 (10/1/98 for Westchester Co.). Facility data obtained by Toxics Targeting: 7/29/1999.
Tank data updated through: 7/1/1999 (10/1/98 for Westchester Co.). Tank data obtained by Toxics Targeting: 7/29/1999.

Nassau County:
Heat producing products and other products with less than 1,000 gallons storage capacity:
Source: Nassau County Department of Health.[3] Data update schedule: rolling basis
Data updated through: 2/4/1999. Data obtained by Toxics Targeting: 2/26/1999.

Generally non-heat producing products with more than 1,000 gallons storage capacity:
Source: Nassau County Fire Marshall. [4] Data update schedule: rolling basis with annual update
Data updated through: 9/27/1996. Data obtained by Toxics Targeting: 11/20/1996.

Rockland County:
Source: Rockland County Department of Health. [5]
Data updated through: 8/11/1998. Data obtained by Toxics Targeting: 8/17/1998.

Suffolk County:
Source: Suffolk County Department of Health Services. [6]
Data updated through: 1/12/1999. Data obtained by Toxics Targeting: 2/26/1999.

10. **RCRA Hazardous Waste Generators and/or Transporters Databases:**

(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the New York State Department of Environmental Conservation's Bureau of Hazardous Waste Facility Compliance pursuant to New York State Law. ASTM required.* Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2]
Manifest transactions data updated to: 1/01/1999. Manifest transactions data obtained by Toxics Targeting: 3/27/1999.
New facilities updated through: 1/01/1999. New facilities obtained by Toxics Targeting: 3/27/1999.

(b) **RCRA Notifier Information:** U. S. Environmental Protection Agency database of hazardous waste facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 3/26/1998. Data obtained by Toxics Targeting: 4/9/1998.
Data attributes updated through: 12/22/1998. Data obtained by Toxics Targeting: 3/30/1999.

(c) **RCRA Violations Information:** U. S. Environmental Protection Agency database of violations data reported for facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 3/26/1998. Data obtained by Toxics Targeting: 4/9/1998.
Data attributes updated through: 12/23/1998. Data obtained by Toxics Targeting: 12/30/1998.

(d) **RCRIS Corrective Action Activity (CORRACTS) Information:** U. S. Environmental Protection Agency (EPA) database of hazardous waste facilities with corrective action activity. This data is part of the RCRIS National Oversight database.
Source: U. S. Environmental Protection Agency[1]
Data updated through: 4/20/2000. Data obtained by Toxics Targeting: 5/10/2000.

11) **Chemical Bulk Storage Facilities**: New York State database of facilities compiled pursuant to 6NYCRR Part 596 that store regulated substances listed in 6NYCRR Part 597 in aboveground tanks with capacities greater than 185 gallons and /or in underground tanks of any size. ASTM required.* Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2]
Data updated through: 4/1/2000. Data obtained by Toxics Targeting: 4/7/2000.

12) **Toxic Release Inventory**: New York State and Federal database of manufacturing facilities required under Section 313 of the Federal Emergency Planning and Community Right-to-Know Act to report releases to the air, water and land of any specifically listed toxic chemical. See Fannie Mae requirement** below.
Source: NYS Department of Environmental Conservation[2]/U. S. Environmental Protection Agency.[1]
Data update schedule: rolling basis, with annual information summary for previous year's activities available from NYSDEC each July 1, with corrections and additional information available approximately mid-August.
Data updated through: 5/9/1996. Data obtained by Toxics Targeting: 5/14/1996

13) **Historic New York City Utility Facilities (1898 to 1950)**: An inventory of selected power generating stations, manufactured gas plants, gas storage facilities, maintenance yards and other gas and electric utility sites identified in various historic documents, maps and annual reports of New York utility companies, including: Sanborn Fire Insurance Maps of NYC (1898-1950); Consolidated Edison Co. Annual Reports (1922-1939); Consolidated Edison Co. Map: "Boroughs of Manhattan and the Bronx Showing Distribution Mains of the New York Edison Co.," (1922); and Consolidated Edison document: "Generating and Annex Stations," (1911).

14) **Air Discharge Facilities**: EPA AIRS database containing address information on each air emission facility and the type of air pollutant emission it is. Compliance information is also provided on each pollutant as well as the facility itself.
See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency[1]
Data updated through: 11/24/1999. Data obtained by Toxics Targeting: 1/06/2000

15) **Toxic Wastewater Discharges (Permit Compliance System)**: Federal database of discharges of wastewater to surface waters and groundwaters. See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 9/23/1996. Data obtained by Toxics Targeting: 9/30/1996

16) **U. S. Environmental Protection Agency Civil Enforcement Docket**: This database is the U. S. EPA's system for tracking civil judiciary cases filed on behalf of the agency by the Department of Justice. Fannie Mae required.**
Source: U. S. Environmental Protection Agency.[1]
Date updated through: 4/1996. Date information obtained by Toxics Targeting: 8/1996

17) **Emergency Response Notification System (ERNS)**: Federal database of spills compiled by the Emergency Response Notification System. ASTM required.* See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 1/31/2000. Data obtained by Toxics Targeting: 2/15/2000

*American Society of Testing Materials Standards on Environmental Site Assessments for Commercial Real Estate (E 1527-93, E 1528-93).
** Fannie Mae's Part X Environmental Hazards Management Procedures specify 1.0 mile searches for "any state or Federal list of hazardous waste sites (e.g. CERCLIS, HWDMS etc.)." Searches for the property and adjacent properties are specified for "chemical manufacturing plants," "obvious high risk neighbors engaging in storing or transporting hazardous waste, chemicals or substances" and "...any documented or visible evidence of dangerous waste handling... (e.g. stressed vegetation, stained soil, open or leaking containers, foul fumes or smells, oily ponds, etc." Searches for property and adjacent properties can include sites up to a quarter mile away (W. Hayward, Director, Multi-Family Business Planning and Control, Fannie Mae, personal communication, 5/94).

[1]U. S. Environmental Protection Agency, 290 Broadway, NY, NY 10007-1866.

[2]NYS Department of Environmental Conservation, 50 Wolf Road, Albany, NY 12233.

[3]Nassau County Department of Health, Bureau of Land Resources Management, 240 Old Country Road, Mineola, NY 11501.

[4]Nassau County Fire Commission, Office of the Fire Marshall, 899 Jerusalem Avenue, P. O. Box 128, Uniondale, NY 11553.

[5]Rockland County Department of Health, The Dr. Robert Yeager Health Center, Building D, Sanitorium Road, Pomona, NY 10970.

[6]Suffolk County Department of Health Services, Hazardous Materials Management, 15 Horseblock Place, Farmingville, NY 11738-1220.

APPENDIX B

CUT AND PLUG IRM ANALYTICAL RESULTS

TABLE 1
ROCKAWAY PARK FORMER MGP SITE
CUT AND PLUG PROGRAM
GRAB SOIL SAMPLING RESULTS
BTEX COMPONENTS

SAMPLE ID	**RPCP-1**	**RPCP-2**	**RPCP-5**	**RPCP-6**		
EXCAVATION No.	1	2	3	**5**		Contract
DATE OF COLLECTION	1/12/99	1/13/99	1/19/99	1/20/99		Required
PERCENT MOISTURE	13	17	27	12	NYSDEC	Detection
DILUTION FACTOR	1	1	100	1	SCG	Limit
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.007	U	0.5	U	0.06	0.001
Toluene	0.015	U	0.32	U	5.5	0.001
Ethylbenzene	0.002	0.001	8.6	U	1.5	0.001
Xylenes (total)	0.01	0.002	8.3	U	1.2	0.001
Total BTEX	0.034	0.003	17.72	0.000		

SAMPLE ID	**RPCP-7**	**RPCP-8**	**RPCP-9**	**RPCP-10**		
EXCAVATION No.	7	8	9	10		Contract
DATE OF COLLECTION	1/22/99	1/22/99	1/22/99	1/22/99		Required
PERCENT MOISTURE	10	23	13	27	NYSDEC	Detection
DILUTION FACTOR	1	1	100	1	SCG	Limit
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	U	U	U	2	0.06	0.001
Toluene	U	U	0.78	3	5.5	0.001
Ethylbenzene	U	U	7.8	1	1.5	0.001
Xylenes (total)	U	U	0.033	0.004	1.2	0.001
Total BTEX	0.000	0.000	8.613	6.004		

QUALIFIERS:
U: Coumpound analyzed for but not detected

TABLE 2
ROCKAWAY PARK FORMER MGP SITE
CUT AND PLUG PROGRAM
GRAB SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE ID	**RPCP-1**	**RPCP-2**	**RPCP-5**	**RPCP-6**		
EXCAVATION No.	**1**	**2**	**3**	**5**		Contract
DATE OF COLLECTION	1/12/99	1/13/99	1/19/99	1/20/99		Required
DILUTION FACTOR	100	1	200	20	NYSDEC	Detection
PERCENT MOISTURE	22	11	24	11	SCG	Limit
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Naphthalene	5.7 J	0.43	180	0.66 J	13	0.33
2-Methylnaphthalene	7.2 J	0.37	15 J	0.51 J	36.4	0.33
Acenaphthylene	62	1.5	44 J	5.6 J	41	0.33
Acenaphthene	2 J	0.057 J	65 J	0.21 J	50	0.33
Fluorene	8.6 J	0.061 J	42 J	0.26 J	50	0.33
Phenanthrene	26 J	0.82	240	13	50	0.33
Anthracene	31 J	0.44	74 J	4.5 J	50	0.33
Fluoranthene	63	0.72	150	14	50	0.33
Pyrene	210	1.60	250	24	50	0.33
Benzo (a) anthracene	60	0.66	84 J	11	0.224	0.33
Chrysene	73	1.3	110	14	0.4	0.33
Benzo (b) fluoranthene	51	1.8	40 J	7.2 J	1.1	0.33
Benzo (k) fluoranthene	74	2	75 J	14	1.1	0.33
Benzo (a) pyrene	66	0.52	68 J	7.2 J	0.061	0.33
Indeno (1,2,3-cd) pyrene	20 J	0.31 J	32 J	4.4 J	3.2	0.33
Dibenzo (a,h) anthracene	12 J	0.15 J	16 J	2.2 J	0.014	0.33
Benzo (g,h,i) perylene	U	U	U	U	50	0.33
Total PAHs	764.30	12.37	1,470	122.23	500	
ToTal CaPAHs	356	6.74	425	60	10	

QUALIFIERS:
U: Compound analyzed for but not detected
J: Compound found at a concentration below the detection limit

TABLE 2 (continued)
ROCKAWAY PARK FORMER MGP SITE
CUT AND PLUG PROGRAM
GRAB SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE ID	**RPCP-7**	**RPCP-8**	**RPCP-9**	**RPCP-10**		
EXCAVATION No.	**7**	**8**	**9**	**10**		Contract
DATE OF COLLECTION	1/22/99	1/22/99	1/22/99	1/22/99		Required
DILUTION FACTOR	10	20	10	8	NYSDEC	Detection
PERCENT MOISTURE	18	18	13	13	SCG	Limit
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Naphthalene	0.14 J	3.6 J	21	0.88 J	13	0.33
2-Methylnaphthalene	0.18 J	3.7 J	6.7	0.97 J	36.4	0.33
Acenaphthylene	3.6 J	5.7 J	2.8 J	3.3	41	0.33
Acenaphthene	U	0.33 J	2.3 J	0.17 J	50	0.33
Fluorene	0.17 J	1.4 J	2.9 J	0.56 J	50	0.33
Phenanthrene	3 J	25	7.6	8.9	50	0.33
Anthracene	2 J	4.6 J	3 J	2.9 J	50	0.33
Fluoranthene	8.8	20	13	7.5	50	0.33
Pyrene	23	48	17	12	50	0.33
Benzo (a) anthracene	10	21	6	8.3	0.224	0.33
Chrysene	12	27	7.4	10	0.4	0.33
Benzo (b) fluoranthene	5	8.8	3.4 J	4	1.1	0.33
Benzo (k) fluoranthene	8.2	11	3.7 J	5.3	1.1	0.33
Benzo (a) pyrene	8.2	12	4.8	7	0.061	0.33
Indeno (1,2,3-cd) pyrene	6.9	12	5	4.3	3.2	0.33
Dibenzo (a,h) anthracene	3.5 J	6.8 J	2.5 J	2.4 J	0.014	0.33
Benzo (g,h,i) perylene	7.9	15	6.1	4.8	50	0.33
Total PAHs	102.01	222.2	108.5	82.31	500	
ToTal CaPAHs	53.80	98.6	32.8	41.3	10	

QUALIFIERS:
U: Compound analyzed for but not detected
J: Compound found at a concentration below the detection limit

TABLE 3
ROCKAWAY PARK FORMER MGP SITE
CUT AND PLUG PROGRAM
GRAB SOIL SAMPLING RESULTS
RCRA METALS AND CYANIDE

SAMPLE ID	**RPCP-1**	**RPCP-2**	**RPCP-5**	**RPCP-6**		
EXCAVATION No.	**1**	**2**	**3**	**5**		Instrument
DATE OF COLLECTION	01/12/99	01/13/99	01/19/99	01/20/99	NYSDEC	Detection
PERCENT SOLIDS	75.7	88.9	75.3	89.7	SCG	Limit
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)
Arsenic	5.9	2.6	9.6	11.3	7.5	3.0
Barium	71.4	12.4 B	116	55	300	1.0
Cadmium	0.52 B	U	0.62 B	2.4	10	1.0
Chromium	3.5	2.4	14.7	9.0	50	1.0
Lead	804	26.0	282	291	500	2.0
Mercury	0.2	U	1.9	2.8	0.1	0.1
Selenium	1.1 B	U	1.7	3	2	1.0
Silver	U	U	0.34 B	U		1.0
Cyanide (Total)	5.77	5.57	U	9.82		10.0

SAMPLE ID	**RPCP-7**	**RPCP-8**	**RPCP-9**	**RPCP-10**		
EXCAVATION No.	7	**8**	**9**	**10**		Instrument
DATE OF COLLECTION	01/22/99	01/22/99	01/22/99	01/22/99	NYSDEC	Detection
PERCENT SOLIDS	84.6	82.0	88.8	85.5	SCG	Limit
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)
Arsenic	6.4	16.8	1.3 B	9.7	7.5	3.0
Barium	76.9	36.6 B	12.2 B	37.8	300	1.0
Cadmium	U	U	U	U	10	1.0
Chromium	12.5	5.2	7.2	5.7	50	1.0
Lead	641	108	103	107	500	2.0
Mercury	0.11	0.14	2.0	1.0	0.1	0.1
Selenium	1.2	1.9	U	1.3	2	1.0
Silver	U	U	U	U		1.0
Cyanide (Total)	U	1.34	2.2	1.51		10.0

QUALIFIERS:
U: Compound analyzed for but not detected
B: Compound concentration is less than the CRDL
but greater than the IDL.

APPENDIX C

BORING AND TEST PIT LOGS

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A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

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
		30–32'	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
35		36–38'	0.0 ppm		Same as above, but dense
		38–40'	0.0 ppm		Same as above
			0.0 ppm		Same as above
40					Base of boring– 40 ft.
45					
50					
55					
60					
65					

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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'

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'	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					

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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		Black, 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
		30-32'	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					

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Site Id: RPSB-03

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/10/00 – 02/11/00

Total Depth: 57.00'

Elevation: 9.93'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

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

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–4'	0.0 ppm		Gray/brown, mix topsoil, FILL, w/concrete, clinker
			0.0 ppm		
		4–8'	0.0 ppm		Brown, med–coarse sandy FILL, w/concrete, clinker, tar
5			0.0 ppm		
		8–10'	0.0 ppm		Tan–orange, fine–med SAND, iron oxide staining, loose, wet
10		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		Same as above
15		16–18'			No Recovery (16–18')
		18–20'			No Recovery (18–20')
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
25		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 wood chunks, blue sheen, crushed shells
		32–34'	10.9 ppm		
			21.5 ppm		Same as above
		34–36'	13.0 ppm		Gray, fine SAND, naphthalene–like odor, crushed shells, loose, wet
35			13.5 ppm		
		36–38'	9.0 ppm		Gray, fine SAND, naphthalene–like odor, loose, wet
			13.5 ppm		
		38–40'	13.5 ppm		Same as above, but medium dense
			9.2 ppm		
40					
		42–44'	50.0 ppm		Same as above
			21.0 ppm		
45		45–47'	144 ppm		Gray, fine SAND, strong naphthalene/organic–like odor, medium dense, moist
			64.0 ppm		
50		50–52'	175 ppm		Same as above, w/crushed shells
			127 ppm		
55		55–57'	24.0 ppm		Same as above
			21.3 ppm		
					Base of boring– 57 ft.
60					
65					

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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

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'	0.0 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		35-37'	8.3 ppm 1.8 ppm		Gray, coarse-med SAND, lt. stain, organic/naphthalene-like odor, shells, med dense, moist
40		40-42'	0.0 ppm 0.0 ppm		Gray, fine SAND, light organic/naphthalene-like odor, shells, medium dense, moist
45		45-47'	8.8 ppm 10.1 ppm		Same as above, no shells Base of boring- 47 ft.
50					
55					
60					
65					

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Site Id: RPSB-05

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/16/00 – 02/17/00

Total Depth: 67.00'

Elevation: 9.26'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

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

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
25		24–26'	15.2 ppm 34.0 ppm		Same as above, but loose
		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		Gray, fine SAND, naphthalene–like odor, dense, moist
		32–34'	5.4 ppm 2.3 ppm		Gray, medium SAND, loose, moist
		34–36'	25.0 ppm 32.0 ppm		Same as above, w/heavy hydrogen sulfide/naphthalene–like odor
35		36–38'	159 ppm 60.0 ppm		Same as above, but medium dense
		38–40'	110 ppm 111 ppm		Same as above
40					
45		45–47'	110 ppm 130 ppm		Same as above, but fine sand, loose
50		50–52'	30.0 ppm 7.6 ppm		Same as above
55		55–57'	0.0 ppm		Gray, med SAND, slight organic–like odor, shells, loose, wet
60		60–62'	0.0 ppm		Brown, fine SAND, moist, dense
65		65–67'	0.0 ppm		Brown, fine SAND, dense, wet
					Base of boring– 67 ft.

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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
					FILL (upper 15' not sampled)
5					
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
		31–33'	0.0 ppm		Med gray, coarse–med SAND w/some mica, fine gravel, shell fragments
		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 Med–dark gray, med–fine, micaceous SAND
		37–39	0.0 ppm		Same as above
		39–41'	0.0 ppm		Medium dark gray, medium–v. coarse. micaceous SAND
40					Base of boring – 41 ft.
45					
50					
55					
60					
65					

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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
					FILL (upper 15' not sampled)
5					
10					
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
		30-32'	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
					Base of boring- 42 ft.
45					
50					
55					
60					
65					

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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		5–7'	84.6 ppm		Gray–black clayey, silty FILL w/coarse–med sand, dense, w/clinker, odor, wet
10		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		15–17'	11.5 ppm 0.5 ppm		Dark gray, coarse–medium SAND w/some mica, odor
20		20–22'	0.0 ppm		Medium gray, med–coarse SAND w/fine–med rounded gravel, shell fragments, odor
25		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
		30-32'	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
					Base of boring- 42 ft.
45					
50					
55					
60					
65					

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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 Diamond

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
5		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		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 Light gray, coarse–v. coarse sandy FILL, w/some mica, odor
		14–16'	3.7 ppm 0.3 ppm 1.1 ppm		Med. dark gr., c.–v. coarse sandy FILL, w/shale frags, tr. fine gravel, odor, some mica Medium light gray, med–coarse SAND, w/some mica, slight odor
15		16–18'	1.1 ppm 3.7 ppm 8.4 ppm		Med gray, med–coarse SAND, w/mica, med gravel, slight odor
		18–20'	0.0 ppm 0.5 ppm 9.8 ppm		Medium light gray, coarse–v. coarse SAND, w/shell fragments, mica, tr. fine gravel
20		20–22'	0.0 ppm 0.0 ppm		Medium light gray, coarse–v. coarse SAND, w/some mica, medium gravel, slight odor
		22–24'	3.2 ppm 0.6 ppm 0.1 ppm 6.0 ppm		Medium gray, coarse–v. coarse SAND w/fine–med subround gravel, shell fragments
		24–26'	0.0 ppm		Same as above, some mica Medium gray, medium–coarse, micaceous SAND, trace shell fragments
25		26–28'	0.0 ppm 26.7 ppm		Same as above, trace v. coarse SAND, no shells
		28–30'	0.0 ppm 36.7 ppm		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		Gray, fine–coarse, medium dense SAND w/tr mica, med. gravel, shell fragments, wet
		32–34'	3.5 ppm 2.5 ppm 4.5 ppm 12.5 ppm 35.0 ppm		Gray, fine SAND, medium dense, trace mica, wet Same as above, w/some mica
35		34–36'	7.5 ppm 11.5 ppm 7.5 ppm 5.4 ppm		
		36–38'	3.3 ppm 10.0 ppm		Gray, fine, micaceous SAND, medium dense, wet
		38–40'	0.0 ppm 3.3 ppm 6.5 ppm		Same as above, slight odor
40					
45		45–47'	0.0 ppm 1.0 ppm		Gray, fine, micaceous SAND, medium dense, wet
50		50–52'	0.0 ppm 30.0 ppm 8.0 ppm		Gray, fine SAND, medium dense, hydrogen sulfide–like odor, wet
55		55–57'	0.0 ppm		Medium gray, coarse–med, micaceous SAND
60		60–62'	2.1 ppm 0.1 ppm		Medium dark gray, coarse–v. coarse micaceous SAND w/shell fragments, trace fine gravel
65		65–67'	0.0 ppm 0.5 ppm		Medium–dark gray, medium–fine, micaceous SAND Base of boring – 67 ft.

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Site Id: RPSB-11

Location: Rockaway Park

Purpose: Soil Boring

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

Total Depth: 47.00'

Elevation: 7.47'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

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.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					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/some gravel
5					Gray-orange, coarse-v. coarse SAND w/fine-medium gravel
					Medium-medium dark gray, medium-coarse SAND w/some mica
10					
15		15-17'	95 ppm 35 ppm 100 ppm		Brown, fine SAND, stained, naphthalene-like odor, loose, wet Gray, fine SAND, naphthalene-like odor loose, wet 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
		30-32'	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					

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Site Id: RPSB-12

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/27/99 – 12/27/99

Total Depth: 52.00'

Elevation: 7.18'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

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

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
5		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		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, ash, 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
15		16–18	170 ppm 180 ppm 110 ppm		Black, CLAY, medium stiff, plastic, heavy hydrocarbon–like odor, w/NAPL, sheen, wet Gray, fine SAND, medium dense, heavy hydrocarbon–like odor, some staining, wet
		18–20	180 ppm 150 ppm 40 ppm		Black, CLAY, medium soft, hydrocarbon–like odor, w/fine sand, wet Gray, fine SAND, medium dense w/clam shells, hydrocarbon–like odor, wet
20		20–22	150 ppm 35 ppm		Gray, fine–coarse SAND, medium dense, brackish & hydrocarbon–like odors, intermittent blackish–brown staining
		22–24	60 ppm 48 ppm 35 ppm 20 ppm		Black, CLAY, stiff, hydrocarbon–like odor, sheen, plastic Gray, fine SAND, medium dense, brackish odor, wet
25		24–26	148 ppm 43 ppm 20 ppm		Same as above, w/clam shells, brown–black staining and sheen, hydrocarbon–like odor
		26–28	35 ppm 25 ppm 20 ppm		Gray fine SAND, medium dense, clam shells, hydrocarbon–like odor, sheen, intermittent brown stain, wet
		28–30	100 ppm 80 ppm 30 ppm 10 ppm		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
		30–32	32 ppm 16 ppm 5.0 ppm 13 ppm		Gray, fine SAND, med dense, hydrocarbon–like odor, intermittent brown staining, sheen, w/clam shells, wet
		32–34	23 ppm 140 ppm		Same as above, w/brown stain 1" thick at 34'
		34–36	110 ppm 85 ppm 130 ppm		Gray, fine–med SAND, med dense, hydrocarbon–like odor, intermittent brown stain odor, wet
35		36–38			No recovery (36–38')
		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
					Base of boring -- 52 feet
55					
60					
65					

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Site Id: RPSB-13

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/13/00 – 01/14/00

Total Depth: 40.00'

Elevation: 7.91'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Hollow Stem Auger

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

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

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
5			0.0 ppm		
		8–12	0.0 ppm		Light tan, fine SAND, loose, moist
					Light brown, fine SAND, loose, wet
10			0.0 ppm		
		12–16	2.3 ppm		Gray, fine SAND, slight NAPL, med stiff, moist
			1.3 ppm		
			43.5 ppm		
15			195.0 ppm		
		16–20	64.0 ppm		Gray, fine SAND, slight NAPL, loose, moist
			32.2 ppm		
			8.7 ppm		
20					Missed Interval
		24–26	5.2 ppm		Lt gray, fine SAND, loose, wet,
25			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
		30–32	0.0 ppm		Gray, fine SAND, w/slight NAPL, medium stiff, wet
		32–34	0.0 ppm		Gray, fine–medium SAND, medium stiff, wet
		34–36	0.0 ppm		Gray, fine SAND, medium stiff, moist
35		36–38	0.0 ppm		Same as above
		38–40	0.0 ppm		Same as above, but stiff
40					Base of Boring – 40 feet
45					
50					
55					
60					
65					

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Site Id: RPSB-14

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/13/99 – 12/13/99

Total Depth: 42.00'

Elevation: 7.10'

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 0–2', 6–8', 30–32', and 40–42'. PID readings are presumed to be biased high due to lack of odors/staining.

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
					Orange–gray, fine SAND, stratified, loose, dry
		4–6	584 ppm		Gray, fine SAND, loose, some brown staining at 5', wet at 5.5'
5		6–8	600 ppm		Gray, fine SAND, loose, wet
10		10–12	680 ppm		Gray, fine–med SAND, dense, trace of clam shells, wet
15		15–17	2000+ ppm		Dark gray, fine SAND, medium dense, wet
20		20–22	0.0 ppm		Same as above, but fine to coarse SAND, w/clam shells
25		25–27	213 ppm		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
		30-32	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
					Base of Boring at 42'
45					
50					
55					
60					
65					

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Site Id: RPSB-15

Location: Rockaway Park

Purpose: Soil Boring

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

Total Depth: 42.00'

Elevation: 7.88'

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 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.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
			0.0 ppm		Brown, silty, fine-medium SAND, (from drill cuttings)
		3-5'			Brown, sandy SILT, soft Crushed GRAVEL, over orange-br, fine SAND w/some clam shells, loose, wet
5		5-7'			No Recovery (5'-7')
		7-9'	0.0 ppm		Brown, fine SAND, loose, wet
10					
15		15-17'	0.0 ppm		Black-gray, fine, micaceous SAND, loose, wet
20		20-22'	3.5 ppm		Black, fine-coarse SAND, loose, wet
25		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
		30-32'	0.0 ppm		Black-gray, fine SAND, medium dense, wet
35		35-37'	0.0 ppm		Same as above
40		40-42'	0.0 ppm		Dark gray, fine SAND, medium dense, wet
					Base of boring - 42'
45					
50					
55					
60					
65					

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Site Id: RPSB-16

Location: Rockaway Park

Purpose: Soil Boring

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

Total Depth: 52.00'

Elevation: 8.12'

Datum: Mean Sea Level

Logged By: Shafer/Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

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

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					Dark brown, fine-medium silty, sandy FILL
		4-6'	1584 ppm		Br-black, silty fine sandy FILL, naphthalene-like odor
5					Black, clay-like material, v. soft, heavy naphthalene-like odor, moist
		6-8'	2000+ ppm		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					

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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 11.1 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'
55					
60					
65					

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Site Id: RPSB-18

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/08/99 – 12/09/99

Total Depth: 87.00'

Elevation: 6.33'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

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

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					Cement
					FILL with wood debris
		4–6'	500 ppm		Black, fine SAND, loose, heavy naphthalene–like odor, wet
5		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
		30–32'	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 intermittant 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
		70–72'	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'
90					
95					
100					
105					

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Site Id: RPSB-19

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/30/99 – 01/03/00

Total Depth: 47.00'

Elevation: 7.56'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

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

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		2–4'	0.0 ppm		FILL, w/black tar, clinker
5		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		10–12'	10.7 ppm 0.0 ppm		Gray–black, med–fine sandy FILL w/ash, tar, coated w/NAPL, heavily stained, odor
15		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		20–22'	0.0 ppm		Med gray, coarse–v. coarse SAND w/fine–med rounded gravel, some mica, trace shells, odor
25		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
		30-32'	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'
50					
55					
60					
65					

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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	0.0 ppm 8.7 ppm		Gray-black, silty, fine sandy FILL, w/red bricks, cement fragments, odor
		4-6	11.1 ppm 0.0 ppm		Gray-black, silty, sandy FILL, odor, w/wood, NAPL, tar fragments & pebbles, wet
5					
10		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		15-17	7.3 ppm 0.0 ppm		Gray-black, coarse-med SAND, odor, sheen & staining Med gray, coarse-med SAND, some mica
20		20-22	4.2 ppm 4.8 ppm 3.0 ppm		Dark-med gray, coarse-very coarse SAND, w/fine gravel, shell fragments
25		25-27	3.7 ppm 5.2 ppm 4.9 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
		30-32	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'
45					
50					
55					
60					
65					

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Site Id: RPSB-21

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/15/99 – 12/15/99

Total Depth: 41.00'

Elevation: 8.30'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

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

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 Light gray, coarse–med, sandy FILL w/some mica & iron staining
		7–9'	7.4 ppm 18.3 ppm		Med light gray, med–fine, micaceous SAND, w/iron staining Same as above, wet
		9–11'	0.0 ppm 0.0 ppm		Olive gray, med–coarse, micaceous SAND w/some lignite, shell fragments Gray–blk/drk gry, med–fine to med–coarse SAND, w/silt & shell fragments, mica
10		11–13'	0.0 ppm		Med–drk gray, med–v. coarse, micaceous SAND, w/trace subrounded gravel
		13–15'	0.0 ppm		Medium gray, med–coarse SAND w/some mica
15		15–17'	0.3 ppm 1.0 ppm		Medium gray, coarse–v. coarse SAND w/some mica, fine gravel
		17–19'	2.2 ppm 1.9 ppm 1.6 ppm		Med gray, coarse–med, micaceous SAND
		19–21'	5.8 ppm 4.4 ppm		Med gray, med–coarse, micaceous SAND, w/some v. coarse sand/fine gravel Med–dark gray, coarse–v. coarse SAND w/shell fragments, fine–med gravel, some mica
20		21–23'	5.8 ppm 8.2 ppm		Same as above Med gray, med–coarse, micaceous SAND
		23–25'	9.5 ppm 10.2 ppm 10.0 ppm		Dark gray, v. coarse–coarse SAND w/shell fragments, fine–med gravel Medium–dark gray, med–coarse SAND, some mica
25		25–27'	9.0 ppm 7.3 ppm		Medium–dark gray, med–v. coarse SAND, w/fine–med gravel
		27–29'	20.3 ppm 3.1 ppm		Med gray, coarse–med SAND, w/some mica, shell fragments, subrounded gravel
		29–31'	85 ppm 58.6 ppm		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
		31–33'	18.0 ppm 90.7 ppm 70.9 ppm		Medium–dark gray, coarse–med SAND, w/fine–med gravel, some mica and shells
		33–35'	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
		37–39'	504 ppm		Medium gray, med–coarse, micaceous SAND, trace shell fragments
		39–41'	202 ppm 179 ppm		Same as above, no shell fragments
40					Base of boring at 41'
45					
50					
55					
60					
65					

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Site Id: RPSB-22

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/01/99 – 12/02/99

Total Depth: 82.00'

Elevation: 6.60'

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 4–6', 8–10', 60–62', and 80–82'.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		4–6'	7.5 ppm		Dark brown, fine SAND, med dense, w/NAPL, hydrocarbon–like odor, wet
5		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
25					

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
		30–32'	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		Same as above, dense, no clam shells
50		50–52'	751 ppm		Same as above, slight naphthalene–like odor
55		55–57'	27 ppm		Gray, fine–coarse SAND, w/mica, 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
		70-72'	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					

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Site Id: RPSB-23

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/04/00 – 01/06/00

Total Depth: 50.00'

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

Elevation: 6.55'

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
		0-2	1.2 ppm 0.9 ppm 1.3 ppm	0.0 ppm 0.4 ppm		Tan, fine-coarse SAND, w/rounded gravel, loose, staining top 0.5'
		2-4	56 ppm 80 ppm 110 ppm	0.3 ppm 1.0 ppm 3.3 ppm		Brown, SILT w/some gravel, soft, slightly plastic Black tar-soaked, SILT, med plastic, med stiff, hydrocarbon-like odor
		4-6	52 ppm 75 ppm 150 ppm 200 ppm	0.5 ppm 0.5 ppm 1.3 ppm 25 ppm		Blk, tar-soaked sandy SILT, med plastic, med stiff, hydrocarbon-like odor, wet at 5.5' bgs
5		6-8	93 ppm 215 ppm 160 ppm 120 ppm	0.0 ppm 50+ ppm 29 ppm 2.3 ppm		Black, tar-soaked fine SAND, loose, heavy hydrocarbon-like odor, wet
		8-10	180 ppm 130 ppm 160 ppm 180 ppm	0.4 ppm 0.8 ppm 3.4 ppm 27 ppm		Same as above, but med dense
10		10-12	80 ppm 60 ppm	0.0 ppm 0.5 ppm 0.6 ppm		Gray-black, fine-coarse SAND, stained, w/rounded gravel, med dense, hydrocarbon-like odor, wet
		12-14	51 ppm 250 ppm 80 ppm	0.5 ppm 21 ppm		Gray-black, fine-coarse SAND, stained, gravel layer at 13' w/NAPL, med dense, heavy hydrocarbon-like odor
15		14-16	25 ppm 11 ppm 7 ppm	2.1 ppm 7 ppm 0.4 ppm		Black, fine-med SAND, stained, med dense, hydrocarbon odor, wet
		16-18	4.8 ppm 5.9 ppm 9.3 ppm 2.5 ppm	0.3 ppm 0.2 ppm 0.3 ppm 0.0 ppm		Blk, fine-coarse SAND, stained, w/gravel, med dense, hydrocarbon-like odor, sheen, wet
		18-20	20 ppm 6.9 ppm 7.3 ppm	0.0 ppm 0.0 ppm 0.0 ppm		Blue-gray, fine-coarse SAND, med dense, intermittent brown staining, hydrocarbon-like odor, sheen, wet
20		20-22	2.6 ppm 90 ppm 8.3 ppm 7.9 ppm			Same as above, w/subround gravel
		22-24	6.3 ppm 7.9 ppm 120 ppm	0.0 ppm 0.0 ppm		Same as above
25		24-26	10 ppm 275 ppm 60 ppm 45 ppm	0.0 ppm		Blue-gray, fine-coarse SAND, grades to fine, med dense, intermittent brown staining, hydrocarbon odor, wet
		26-28	14.1 ppm 12.9 ppm 17.0 ppm 8.9 ppm	0.0 ppm 0.4 ppm 1.1 ppm		Light gray, fine SAND, med dense, slight hydrocarbon-like odor, wet
		28-30	4.5 ppm 11 ppm 9 ppm	0.0 ppm 0.5 ppm 0.2 ppm		Same as above

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 0.7 ppm	0.5 ppm 0.2 ppm 2.5 ppm 1.6 ppm		Same as above
35		36-38	0.0 ppm 0.7 ppm	0.5 ppm 0.6 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		40-42				No recovery (40-42')
		42-44	0.0 ppm 0.0 ppm 9.5 ppm 15 ppm	0.5 ppm 0.5 ppm 3.7 ppm 15 ppm		Gray, fine, micaceous SAND, dense, wet
		44-46	0.0 ppm 0.6 ppm 0.6 ppm	0.4 ppm 0.6 ppm 15.3 ppm 0.9 ppm		Same as above, slight hydrogen sulfide-like odor
45		46-48	0.0 ppm 1.0 ppm 0.0 ppm	0.5 ppm 0.0 ppm 0.5 ppm 0.7 ppm		Gray, fine, micaceous SAND, dense, wet
		48-50	0.0 ppm	0.4 ppm 0.3 ppm 1.3 ppm		Dark gray, fine SAND, dense, wet
50						Base of boring- 50 ft.
55						
60						
65						

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Site Id: RPSB-24

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/10/00 – 01/11/00

Total Depth: 52.00'

Elevation: 7.16'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

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

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

Location: Rockaway Park	Site Id: RPSB-24
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'	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.
55					
60					
65					

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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

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
		4-6'	56 ppm		Black-stained, fine SAND, loose, heavy hydrocarbon-like odor, wet
5		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
		30-32'	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
					Base of boring- 52 ft.
55					
60					
65					

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Site Id: RPSB-26

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/19/00 – 01/19/00

Total Depth: 40.00'

Elevation: 7.45'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

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

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–4'	0.0 ppm		Brown, TOPSOIL/FILL, clinker, loose
			0.0 ppm		Brown, fine sandy FILL, clinker, loose
					Gray–brown, fine sandy FILL, loose
		4–8'	0.0 ppm		Gray, same as above
5					Brown, fine–med sandy FILL, clinker, loose
			1000+ ppm		Light brown, fine SAND, loose
					Light gray, fine SAND, loose, wet
		8–12'	5.0 ppm		Gray, fine SAND, slight NAPL–like odor, med loose, wet
			46.5 ppm		Black, fine SAND, possible ash stain, NAPL–like odor, med loose, wet
10			139 ppm		
		12–16'	60 ppm		Black, fine SAND, tar stained, NAPL–like odor, med loose, wet
			130 ppm		
			205 ppm		
15		16–20'	94 ppm		Black, med–coarse SAND, tar stain, slight NAPL–like odor, med loose, wet
			198 ppm		
			28 ppm		
			15.0 ppm		Black, fine SAND, stain, slight NAPL–like odor, med loose, wet
20		20–24'	5.0 ppm		Black, coarse SAND/GRAVEL, black tar stain, NAPL–like odor, loose, wet
			12.0 ppm		Black–gray, fine SAND, slight NAPL–like odor, med loose, wet
		24–28'	10.0 ppm		Light gray, fine SAND, med stiff, wet
25			8.2 ppm		
			3.5 ppm		
			3.8 ppm		
		28–30'	3.6 ppm		Gray, fine SAND, slight NAPL–like odor, med loose, moist
			4.1 ppm		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: 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 SAND, slight NAPL-like odor, med loose, moist
		32-34'	0.0 ppm		Gray, fine SAND, med loose, moist
		34-36'	0.0 ppm		Same as above, wet
35		36-38'	0.0 ppm		Same as above
		38-40'	0.0 ppm		Gray, fine SAND, trace black stain, med loose
40					Base of boring- 40 ft.
45					
50					
55					
60					
65					

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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
5					
10		10-12'	219 ppm		Same as above, wet
15		15-17'	148 ppm		Gray, silty fine SAND, med dense, w/little med sand, light staining, hydrogen sulfide-like odor, wet
20		20-22'	83.9 ppm		Brown, fine SAND, med dense, w/med & coarse sand, tr. gravel, sheen & odor, wet Gray-black, coarse SAND/GRAVEL, loose, w/some med sand, heavy staining, odor, wet
25		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
		30-32'	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 Base of boring- 52 ft.
55					
60					
65					

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Site Id: RPSB-28

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/29/99 – 12/30/99

Total Depth: 50.00'

Elevation: 9.72'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

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

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	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
5		6–8'	47.2 ppm 149 ppm 93.3 ppm	0.0 ppm		Black, med–fine SAND, w/v. coarse SAND, fine–med gravel, odor, staining, sheen
		8–10'	173 ppm 180 ppm 131 ppm	0.0 ppm		Grayish–black, med–v. coarse SAND, w/some fine–med gravel, staining, odor & sheen
10		10–12'	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
		12–14'	66.5 ppm	0.0 ppm		Grayish–black, coarse–med SAND w/fine gravel, odor, staining & sheen
15		14–16'	47.1 ppm 80.4 ppm 9.6 ppm	0.0 ppm 2.3 ppm 3.0 ppm		Grayish–black/dark med gray, coarse–v. coarse SAND w/some mica, trace fine gravel, odor, staining, sheen
		16–18'	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
		18–20'	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
20		20–22'	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
		22–24'	48.6 ppm 44.0 ppm 43.3 ppm 0.2 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
25		24–26'	11.7 ppm 0.0 ppm 20.3 ppm 0.0 ppm	0.0 ppm		Med gray, coarse–med SAND w/little fine–med gravel, trace shell frags, staining in center of splitspoon, odor & sheen
		26–28'	12.6 ppm 5.0 ppm 12.0 ppm	0.0 ppm		Med gray, v. coarse–coarse SAND w/fine–med gravel, heavy staining in middle of splitspoon, odor & sheen
		28–30'				No recovery (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'	15.4 ppm 5.0 ppm 0.0 ppm	0.0 ppm 0.0 ppm		Med light gray, med-coarse SAND w/little mica, trace shells, light staining, sheen & odor
		32-34'				No recovery (32-34')
		34-36'	0.0 ppm	0.0 ppm		Med gray, medium-fine, micaceous SAND
35		36-38'	0.0 ppm	0.0 ppm		Same as above
		38-40'	0.0 ppm	0.0 ppm		Same as above, med dense
40		40-42'	0.0 ppm	0.2 ppm 0.0 ppm		Medium gray, medium-fine, micaceous SAND, trace fine-med gravel
		42-44'	0.0 ppm	0.0 ppm		Same as above
		44-46'	0.0 ppm	0.0 ppm		Medium gray, med-coarse, micaceous SAND
45		46-48'	0.0 ppm	0.3 ppm 0.0 ppm		Medium gray, medium, micaceous SAND, medium dense
		48-50'	0.0 ppm	0.0 ppm		Medium gray, medium-fine micaceous SAND, medium dense
50						Base of boring- 50 ft.
55						
60						
65						

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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

Logged By: John Schafer

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 2.00in

Remarks: Samlpes 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
		7–9'	95 ppm 130 ppm 150 ppm 100 ppm		Black–gray, fine SAND, NAPL–stained, med dense, hydrocarbon–like odor, sheen, wet
		9–11'	66 ppm 16 ppm 11 ppm		Dark gray, fine SAND, med dense, hydrocarbon–like odor, slight sheen, wet
10		11–13'	6.5 ppm 4.8 ppm 8.0 ppm		Dark gray–black, fine SAND, med dense, hydrocarbon–like odor, slight sheen, wet
		13–15'	11 ppm 22 ppm 10 ppm 13 ppm		Same as above
15		15–17'	27 ppm 29 ppm 15.5 ppm		Dark gray–black, fine–med SAND, med dense, hydrocarbon–like odor, sheen, wet
		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
		19–21'	99 ppm 110 ppm 95 ppm 90 ppm		Black, fine–coarse SAND, NAPL–stained, med dense, heavy hydrocarbon–like odor, w/some shells, wet
20		21–23'	56 ppm 100 ppm 95 ppm 115 ppm		Brown, fine SAND w/shells, med dense, heavy hydrocarbon–like odor, sporadic brown staining, wet
		23–25'	103 ppm 123 ppm 133 ppm		Brown, fine SAND, NAPL–laden w/rounded gravel, shells, heavy hydrocarbon–like odor H2S = 2.0 ppm at 24'
25					

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
		30-32'	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 75 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 Black, 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

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
			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 2.2 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					

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Site Id: RPSB-30

Location: Rockaway 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'
5						
10		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		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 0.0 ppm 0.5 ppm		Light black, fine–coarse SAND, loose, wet
20		21–23'	0.0 ppm 0.0 ppm 1.7 ppm	0.0 ppm 0.4 ppm 0.3 ppm 2.1 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 0.8 ppm		Light black SAND, fine grading to fine–coarse SAND, med dense, trace gravel & shells, wet
25		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 0.0 ppm	0.2 ppm 0.0 ppm 0.0 ppm 0.5 ppm		Gray, fine SAND, med dense, trace clam shells, wet
		29–31'	0.0 ppm	0.0 ppm 0.4 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
				0.4 ppm		
		31-33'	0.0 ppm 22 ppm 17 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
35		35-37'	10 ppm 11 ppm 6.5 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
40		41-43'	0.0 ppm 20 ppm 10 ppm 11 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		Same as above
45		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
50		51-53'	6.5 ppm 1.3 ppm 0.4 ppm	0.0 ppm		Gray, fine SAND, trace shells, dense, wet
55		55-57'	0.0 ppm 0.0 ppm	0.0 ppm		Grayish-black, fine-coarse SAND, medium dense, trace shells, wet
60		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'
65						

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Site Id: RPSB-31A

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/04/00 – 03/10/00

Total Depth: 135.00'

Elevation: 6.58'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

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.

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
5		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		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		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		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		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
35		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
40		40-42'				No recovery (40-42')
45		45-47'	182 ppm	0.0 ppm		Med gray, med-fine SAND, w/some mica, shell fragments, staining, odor, zones of NAPL-saturated sand
50		50-52'	65.7 ppm 68.0 ppm	0.0 ppm		Med gray, med-fine SAND, w/some mica, staining, odor
55		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
60		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
65		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

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		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		80-82'	5.5 ppm 10.1 ppm 23.6 ppm	0.0 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/NAPL, odor, sheen, staining
85		85-87'	57.1 ppm 67.7 ppm	0.0 ppm		Dark gray, med-fine SAND, micaceous, saturated w/NAPL, staining, sheen
90		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
95		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
100		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
105		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
115		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
120		118-120	29.5 ppm 23.8 ppm 14.5 ppm 3.2 ppm	0.0 ppm		Same as above
125		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
130		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
		133-135	0.2 ppm 0.1 ppm	0.0 ppm		Brown, medium-coarse SAND, loose, wet
135						Base of boring - 135 ft.
140						
145						

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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 Diamond

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		Grayish-black, silty med-coarse SAND, loose, w/fine-coarse gravel
					Grayish-orange/pale orange, med-coarse to med SAND, loose
		4-6'	0.0 ppm		Very lt. gray, med SAND, loose, some mica to brown, med-fine SAND, loose, w/mica
5					Moderate brown, med SAND, w/some SILT
		6-8'	23.7 ppm 12.8 ppm 0.0 ppm		Pale brown/moderate yellowish-brown, med-coarse SAND, some mica, staining, odor Drk gray, med-coarse SAND w/clay, mica, wet; med-v. coarse SAND, odor, shells
		8-10'	36.5 ppm 20.1 ppm 0.0 ppm		Med drk gray, med-v. coarse SAND, med dense, w/little gravel, stains, odor, wet Dark gray, coarse-v. coarse SAND, w/some fine gravel, odor
10		10-12'	0.0 ppm		Med dark gray, coarse-v. coarse SAND w/fine-coarse gravel, slight odor
		12-14'	35.7 ppm 0.0 ppm		Med gray, coarse-med SAND, med dense, w/fine-coarse gravel, odor
		14-16'	0.0 ppm		Med gray, coarse-med SAND, med dense, w/trace fine gravel, wet
15		16-18'	0.0 ppm		Med light gray/med dark gray, coarse-med SAND, some fine gravel, med dense
		18-20'	0.0 ppm		Med gray/med drk gray, coarse-med SAND, some v. coarse sand, fine-coarse gravel, med dense, wet
20		20-22'	48.9 ppm 203 ppm 353 ppm		Med dark gray, coarse-v. coarse SAND, med dense, little shells, odor, trace gravel
		22-24'	218 ppm 177 ppm		Med gray, coarse-med SAND, med dense, trace shell fragments, slight odor
		24-26'	2000+ ppm 2000+ ppm		Med dark gray, coarse-v. coarse SAND, med dense, some fine gravel, trace shell fragments, slight odor
25		26-28'	184 ppm 99.7 ppm 644 ppm		Med dark-med gray, coarse-v. coarse SAND, w/fine gravel Med gray, med SAND, med dense, w/little mica, brackish odor
		28-30'	24.8 ppm 21.3 ppm 62.3 ppm		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	PID	Graphic Log	Material Description
		30-32'	25.8 ppm 52.8 ppm 128 ppm		Med gray, med-coarse SAND, med dense, w/some mica, trace v. coarse sand/fine gravel
		32-34'	11.2 ppm 47.6 ppm 30.4 ppm		Same as above, slight odor
		34-36'	30.9 ppm 13.7 ppm 16.6 ppm		Med gray, medium, micaceous SAND, med dense
35		36-38'	0.0 ppm		Same as above, some mica
		38-40'	0.0 ppm		Same as above
40		40-42'	0.0 ppm		Same as above
		42-44'	0.0 ppm		Same as above
		44-46'	0.0 ppm		Same as above
45		46-48'	0.0 ppm		Same as above, micaceous
		48-50'	0.0 ppm		Med gray, medium, micaceous SAND, med dense, w/very thin lens of dark gray micaceous silty clay
50					Base of boring- 50 ft.
55					
60					
65					

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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'	0.0 ppm		Pale & dusky brown, med-fine SAND, w/trace fine gravel
		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 frags, odor & sheen, wet
5					
10		10-12'	85.9 ppm 64.3 ppm 22.3 ppm		Dark gray, coarse-med SAND, w/some coal tar, mica, odor & sheen
15		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		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		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
		30-32'	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
					Base of boring - 42 ft.
45					
50					
55					
60					
65					

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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'	0.0 ppm		Brown, fine sandy, silty FILL, loose
		2-4'	0.0 ppm		FILL- brick, black clinker in brown silty matrix, loose
					FILL- black clinker in black/orange-brown silty matrix, loose
		4-6'	20.0 ppm 18.0 ppm 25.0 ppm		FILL- crushed rock, angular, loose, hydrocarbon-like odor (upper 3/4'), wet
5					Brown, fine, sandy FILL, loose, hydrocarbon-like odor, wet
10		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		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		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		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
		30-32'	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.
50					
55					
60					
65					

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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
					FILL, concrete
		2–4'			No recovery (2–4')
		4–6'			No recovery (4–6')
5					Hydrocarbon–like odor from empty sampler
		6–8'			
		8–10'	200 ppm 200 ppm 200 ppm		Gray, fine–med SAND, loose, hydrocarbon–like odor, dark gray staining, wet
10		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 150 ppm 35.0 ppm		Blackish–gray, fine–coarse SAND, loose, hydroacrbon–like odor, sporadic brown staining, wet
15		16–18'	50.0 ppm 10.0 ppm 5.0 ppm 4.0 ppm		Gray, fine–coarse SAND, med dense, slight hydrocarbon–like odor, clam shells, trace gravel, wet
		18–20'	4.7 ppm 5.1 ppm 4.7 ppm 4.6 ppm		Dark gray, fine–coarse SAND, med dense, some subrounded–subangular gravel clam shells, wet
20		20–22'	6.0 ppm 2.1 ppm 1.1 ppm 0.9 ppm		Dark gray, coarse SAND, w/subrounded–subangular gravel, some clam shells, black staining at 21'
		22–24'	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		Gray, fine, micaceous SAND, dense, w/clam shells, wet
25			2.3 ppm		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 16.0 ppm 29.0 ppm		Gray, fine SAND, med dense, sporadic brown staining, hydrocarbon-like odor
35		35-37'			No recovery (35-37')
		37-39'	33.0 ppm 16.0 ppm 170 ppm		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		Same as above
45		45-47'			No recovery (45-47')
50		50-52'	26.0 ppm 0.5 ppm 3.2 ppm		Gray, fine SAND, med dense, slight sheen & hydrocarbon-like odor, wet
55		55-57'	52.0 ppm 150 ppm 50.0 ppm 100 ppm		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		Gray, fine-coarse SAND, w/some fine gravel, med dense, sporadic brown staining, wet
65		65-67'	33.0 ppm 5.6 ppm 1.2 ppm 3.3 ppm		Same 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
		70-72'	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
					Base of boring - 82 ft.
85					
90					
95					
100					
105					

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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 Brown, silty sandy FILL, fine, loose
		2–4'			Black, FILL–slag material in silty brown–black matrix, some wood, loose
		4–6'	55.0 ppm		Same as above
5					
10		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		15–17'	610 ppm 730 ppm 890 ppm		Brown, fine SAND, NAPL–stained, med dense, heavy hydrocarbon–like odor, sheen, wet
20		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		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
		30-32'	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
		70-72'	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 1.9 ppm 3.2 ppm		Same as above
					Base of boring- 82 ft.
85					
90					
95					
100					
105					

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Site Id: RPSB-36

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/03/00 – 01/04/00

Total Depth: 57.00'

Elevation: 9.12'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

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

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
						Not sampled (0–5')
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		10–12'	10.1 ppm 81.8 ppm 113 ppm	0.0 ppm 5.3 ppm 2.7 ppm		Med dark gray–dark gray, med–coarse SAND, loose, w/fine–coarse gravel, odor, sheen, light staining
15		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		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		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 16.3 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.
60						
65						

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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
5		6-8'				Blackish-brown, fine sandy SILT, soft, moist
10		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		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		20-22'				No recovery (20-22')
25		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'	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		35-37'	0.6 ppm 0.8 ppm 0.4 ppm	0.0 ppm		Same as above, no odor or staining
40		40-42'	1.4 ppm 0.0 ppm 0.6 ppm	0.0 ppm		Gray, fine SAND, med dense, wet
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.
55						
60						
65						

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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'	0.0 ppm	0.0 ppm		Black, FILL-vesicular slag, fine-coarse, loose
		4-6'	0.0 ppm	0.0 ppm		Same as above
5		6-8'		0.0 ppm		No recovery (6-8'), hydrocarbon-like odor in sampler
10		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		15-17'	18.0 ppm 14.0 ppm	0.0 ppm		Dark gray, fine-med SAND, loose, slight hydrocarbon-like odor, wet
20		20-22'	0.0 ppm 11.6 ppm 4.0 ppm	0.0 ppm		Same as above, w/trace coarse sand
25		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
		30-32'	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.
55						
60						
65						

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Site Id: RPSB-39

Location: Rockaway Park

Purpose: Soil 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'	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		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		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		15-17'	97.4 ppm 195 ppm	0.0 ppm		Med dark gray, coarse-meduim SAND, w/fine-coarse, rounded gravel
20		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		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 & Bartilucci	Borehole Dia.: 4.25in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
		30-32'	1.5 ppm 0.0 ppm 1.8 ppm 0.3 ppm	0.0 ppm		Medium gray, med-fine, micaceous SAND, med dense
35		35-37'	0.0 ppm	0.0 ppm		Medium dark gray, med SAND, w/some mica
40		40-42'				No recovery (40'-42')
		42-44'	5.6 ppm 0.0 ppm	0.0 ppm		Medium gray, medium SAND, w/some mica, medium dense
						Base of boring - 44 ft.
45						
50						
55						
60						
65						

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Site Id: RPSB-40

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/20/00 – 01/20/00

Total Depth: 40.00'

Elevation: 7.79'

Datum: Mean Sea Level

Logged By: Ian Davidson

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

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

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					
20		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
25		26–28'	18.2 ppm 2.0 ppm		Light gray, fine SAND, w/slight NAPL–like odor, med loose, wet

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
		33-35'	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
35					
		38-40'	0.0 ppm 1.9 ppm		Gray, fine SAND, loose, wet
40					Base of boring - 40 ft.
45					
50					
55					
60					
65					

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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 Grayish–yellow, med–fine SAND w/tar fragments
5		5–7'	0.0 ppm 83.4 ppm 113 ppm		Gray–yellow/gray–brown, med–fine/med–coarse SAND, w/tar fragments, slight odor Yellowish–gray/dark gray, fine–med SAND, w/little silt, odor
		7–9'	0.0 ppm 132 ppm 215 ppm		Black, coarse–med SAND, w/odor, sheen & staining Med dark gray, med–coarse SAND, w/staining & odor
		9–11'	2000+ ppm 1038 ppm 94.6 ppm		Grayish–black, med–coarse SAND, w/trace med rounded gravel, odor, staining Med drk gray/med lt. gray, med–coarse, micaceous SAND, w/odor, staining
10		11–13'	136 ppm 1588 ppm		Med light gray, coarse–v. coarse SAND w/some mica, light staining, sheen & odor, thin layer of heavy staining at bottom of spoon
		13–15'	2000+ ppm 1846 ppm		Med gray/gray–blk, coarse–v. coarse SAND, w/heavy staining, odor, sheen, fine gravel Lt. med gray, coarse–med SAND w/fine–coarse gravel, some heavy staining, odor
15		15–17'	2000+ ppm 2000+ ppm		Dark med gray, coarse–med SAND, micaceous, staining, odor, sheen
		17–19'	2000+ ppm 115 ppm		Med gray, coarse–v. coarse SAND, w/some fine gravel, mica, lt. staining, odor, sheen Grayish–black, coarse–v. coarse SAND, some mica, slight sheen & odor
		19–21'	231 ppm 29.2 ppm		Gray–black, coarse–v. coarse, micaceous SAND, w/fine–coarse gravel, odor, sheen
20		21–23'	38.1 ppm 2000+ ppm		Dark med gray, coarse–v. coarse SAND w/fine–coarse gravel, shell fragments, odor, heavy staining & sheen
		23–25'	1529 ppm 2000+ ppm 900 ppm		Same as above Med gray, coarse–v. coarse, micaceous SAND, w/odor & sheen
25		25–27'	2000+ ppm 245 ppm		Gray–black, v. coarse–med SAND w/coarse gravel, heavy stains, NAPL, odor, sheen Med light gray, coarse–med, micaceous SAND, w/odor & sheen
		27–29'	190 ppm 259 ppm 15.7 ppm		Same as above, w/shell fragments Med lt. gray, coarse–v. coarse SAND w/shell frags, fine–coarse gravel, slight odor
		29–31'	133 ppm 16.4 ppm 24.8 ppm		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
		31–33'	215 ppm 17.6 ppm		Med gray, coarse–med, micaceous SAND, slight odor Same as above, w/shell fragments & some fine–coarse gravel
		33–35'	117 ppm 13.0 ppm 17.9 ppm		Same as above
35		35–37'	636 ppm 515 ppm		Same as above, w/sheen
		37–39	89.3 ppm 0.0 ppm		Med gray, med–coarse, micaceous SAND
		39–41	0.0 ppm		Same as above, some shell fragments
40					
45		45–47	0.0 ppm		Same as above
					Base of boring– 47 ft.
50					
55					
60					
65					

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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 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'	0.4 ppm 0.2 ppm 0.2 ppm	0.0 ppm		Brown, fine sandy silty FILL, soft, w/fragments of vesicular slag
5		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		10-12'	80.0 ppm 170 ppm 115 ppm	0.0 ppm 2.6 ppm 2.8 ppm		Same as above, wet
15		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		20-22'	7.3 ppm 10.0 ppm 4.0 ppm	0.0 ppm		Same as above
25		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		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		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		45-47'	9.7 ppm 9.2 ppm 7.3 ppm 0.0 ppm	0.0 ppm		Same as above
50		50-52'	45.1 ppm 0.6 ppm 45.8 ppm 50.1 ppm	0.0 ppm 0.0 ppm 7.2 ppm 7.6 ppm		Med gray, fine-med, micaceous SAND, med dense, odor, sheen, heavy layered staining at bottom of spoon
55		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		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		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		75-77'	1.2 ppm 0.6 ppm 0.0 ppm	0.0 ppm		Brown, fine, micaceous sandy SILT, dense, wet
80						
		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 Grayish-brown, med, micaceous SAND, w/sheen, slight odor Dark yellowish-brown, med-fine, micaceous SAND w/some mica, oil stains, grading to fine silty SAND
85						
		89-91'	0.0 ppm	0.0 ppm		Dark yellowish-brown, med, micaceous SAND, w/some silt
90						
		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
95						
		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
100						
		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
105						
		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
115		114-116'	0.0 ppm	0.0 ppm		Olive gray, med-coarse, micaceous SAND, grading to fine micaceous silty SAND
120		119-121'	0.0 ppm	0.0 ppm		Olive gray, med, micaceous SAND, w/trace silt Dark yellowish-brown, coarse-med SAND
125		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'
130						
135						
140						
145						

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Site Id: RPSB-43

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/01/99 – 12/03/99

Total Depth: 97.00'

Elevation: 9.77'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

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

Depth (ft)	Recovery	Sample Interval	PID	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		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
10					Med gray, fine–med SAND, w/staining, odor
		11–13'	18.1 ppm 11.4 ppm 3.0 ppm		Med dark–light gray, fine–med SAND, some mica, odor & staining
		13–15'	33.9 ppm 21.6 ppm 22.9 ppm 12.9 ppm 36.5 ppm		Med dark gray, fine–med SAND w/fine–coarse gravel, rock fragments, staining, odor at bottom of spoon
15		15–17'	17.8 ppm 9.0 ppm 28.5 ppm 3.2 ppm		Dark gray, med–coarse SAND, w/NAPL, staining, odor
		17–19'	10.2 ppm 2.8 ppm 40.1 ppm		Med light gray, fine–v. coarse SAND, some mica, shell fragments Med gray, coarse–fine SAND w/staining, odor
		19–21'	17.3 ppm 25.3 ppm 22.1 ppm 22.7 ppm		Med light gray, med–v. coarse SAND w/staining, odor
20		21–23'	20.0 ppm 53.2 ppm 27.6 ppm 45.2 ppm		Med gray/med dark gray, med–v. coarse SAND, some fine–coarse gravel, zone of heavy staining & odor
		23–25'	98.6 ppm 23.1 ppm		Med gray, med–v. coarse SAND w/some shell fragments, fine gravel
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		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		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		45–47'	329 ppm 209 ppm		Med gray, med–fine SAND w/some mica, trace shell fragments, light staining, sheen & odor
50		50–52'	436 ppm 444 ppm		Med gray, med–coarse SAND, w/some mica, staining, odor & sheen
55		55–57'	66.3 ppm		Med gray, med–v. coarse SAND, heavy staining, sheen & odor
60		60–62'	126 ppm 733 ppm		Med gray, coarse–v. coarse SAND, w/some mica, heavy staining, odor & sheen
65		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
		70–72'	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 62.3 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
85		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 Grayish–black, fine, micaceous silty SAND
95		95–97'	0.9 ppm 0.0 ppm 0.0 ppm		Grayish–brown, fine, micaceous silty SAND Brownish–gray, med–fine, micaceous SAND Base of boring– 97 ft.
100					
105					

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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
		30-32'	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'	495 ppm 279 ppm 373 ppm 11.1 ppm		Brown–black, fine SAND, micaceous, w/fine–med gravel, shells, odor, heavy stains Olive gray, silty, micaceous fine SAND
75		75–77'	16.1 ppm 16.6 ppm 7.8 ppm		Same as above, olive gray to olive black
80		80–82'	45.4 ppm 82.9 ppm		Olive black, fine, micaceous silty SAND, w/zone of heavy staining at bottom of sampler, odor
85		84–86	1987 ppm 1465 ppm		Grey brown, medium SAND, some stain, strong NAPL/naphthalene–like odor, med dense, wet
90		89–91	426.3 ppm 219.3 ppm		Same as above, medium–fine SAND
95		94–96	134.5 ppm 131.2 ppm		Brown–black, medium–fine SAND, some stain, NAPL/naphthalene–like odor, dense, moist
100		99–101	325.7 ppm 298.6 ppm 223.7 ppm		Black, medium–fine SAND, tar waste saturated, odor, medium dense, wet
105		104–106	258.7 ppm 265.3 ppm		Same as above
		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
					Base of boring -- 151 ft.
155					
160					
165					
170					
175					
180					
185					

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Site Id: RPSB-45

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/07/00 – 01/07/00

Total Depth: 52.00'

Elevation: 9.13'

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 6–8', 25–27', 40–42', and 50–52'.

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')
5		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		10–12'				Dark gray, sandy FILL, w/brick, wet
15		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		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		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						

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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		FILL, crushed rock & concrete, w/NAPL, hydrocarbon–like odor
			150.0 ppm		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
		30-32'	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
					Base of boring- 52 ft.
55					
60					
65					

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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	0.0 ppm		Dusky yellowish-brown, med-v. coarse silty SAND, w/wood Moderate-yellowish brown, med SAND, loose, trace silt, slight staining, odor
		7-9'	207 ppm 149 ppm 183 ppm	0.0 ppm 3.4 ppm 28.0 ppm 50+ ppm		Grayish-black/med dark gray, med SAND, loose, sheen, odor, staining, wet
10		10-12'	428 ppm 843 ppm 861 ppm	0.0 ppm 1.3 ppm 1.8 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
		30-32'	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
						Base of boring- 42 ft.
45						
50						
55						
60						
65						

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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
		4-6'	799 ppm 2000+ ppm 2000+ ppm 2000+ ppm	0.0 ppm 9.3 ppm 0.3 ppm 14.3 ppm		Pale yellowish-brown/med gray, med SAND, med dense, w/little mica, odor, sheen some staining
5		6-8'	1494 ppm 2000+ ppm 2000+ ppm 2000+ ppm	13.1 ppm 10.2 ppm 11.0 ppm 18.6 ppm		Med gray, coarse-med SAND, med dense, odor, sheen
		8-10'	2000+ ppm 235 ppm 232 ppm	15.2 ppm 1.5 ppm		Med dark gray, coarse-med SAND, med dense, trace mica, odor
10		10-12'	2000+ ppm 355 ppm 333 ppm 159 ppm	0.0 ppm 1.5 ppm 0.0 ppm 0.3 ppm		Dark gray, coarse-v. coarse SAND w/fine gravel, odor
		12-14'	111 ppm 45.6 ppm 14.5 ppm 4.9 ppm	0.0 ppm		Med dark gray, coarse-med SAND, med dense, w/little fine gravel, odor
		14-16'	0.4 ppm 7.4 ppm 0.0 ppm 5.5 ppm	0.0 ppm		Med dark gray, coarse-med SAND, med dense w/some fine-coarse gravel, shell fragments, brackish odor
15		16-18'	13.7 ppm 8.1 ppm 0.0 ppm 0.0 ppm	0.0 ppm		Dark gray, coarse-v. coarse SAND, med dense, w/fine-coarse gravel, slight odor
		18-20'	9.4 ppm 2.6 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
20		20-22'	1.6 ppm 0.0 ppm 0.0 ppm	0.0 ppm		Med gray, coarse-v. coarse SAND, med dense, w/fine-coarse gravel, shell frags
		22-24'	0.0 ppm 0.0 ppm 0.0 ppm	0.5 ppm 0.7 ppm 0.4 ppm		Same as above, dark gray Medium-drk gray, med-v. coarse SAND grading to fine, micaceous silty SAND w/some clay
		24-26'	0.0 ppm 0.0 ppm 0.0 ppm	0.4 ppm 0.4 ppm 0.3 ppm		Medium gray, medium, micaceous SAND, medium dense, slight odor
25						

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
		30-32'	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.
50						
55						
60						
65						

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Site Id: RPSB-49

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 12/08/99 – 12/08/99

Total Depth: 52.00'

Elevation: 10.73'

Datum: Mean Sea Level

Logged By: Jeff Diamond

Drilling Method: Hollow Stem Auger

Contractor: LAWES

Borehole Dia.: 4.25in

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

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–2'	4.7 ppm 4.7 ppm		Dusky brown,med–v. coarse, sandy TOPSOIL, grass, roots
		2–4'	3.2 ppm 3.7 ppm 0.9 ppm		Grayish–brown, med–v. coarse, sandy FILL, some silt Grayish–brown, med–v. coarse, sandy FILL, w/chunks of tar
		4–6'	0.0 ppm		Yellow–brn, coarse–v. coarse, sandy FILL, fine–coarse gravel to red–brown silty clay Moderate reddish–brown, silty clayey FILL, w/v. coarse gravel, wet
5		6–8'	520 ppm 213 ppm		Black, med–fine, sandy FILL, w/some mica, odor, staining Grayish–brown, coarse–med, sandy FILL, staining, odor, slight sheen
		8–10'	1587 ppm 2000+ ppm 2000+ ppm		Moderate brown, silty clayey FILL, w/black med–fine sand, brick fragments Grayish–black, coarse SAND, odor, sheen, saturated w/NAPL
10					
15		15–17'	2000+ ppm 1770 ppm		Dark gray, med–coarse SAND, odor, sheen, light staining, coarse gravel
20		20–22'	451 ppm 296 ppm		Dark gray, med–v. coarse SAND, odor
25		25–27'	207 ppm 249 ppm 208 ppm		Dark gray, coarse–v. coarse SAND w/shell fragments, some mica, fine–coarse gravel light staining, odor, sheen

Location: Rockaway Park	Site Id: RPSB-49
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'			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					

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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
					Yellow-brown, sandy FILL, w/brick, concrete
5		5-7'	0.0 ppm 305 ppm		Grayish-black, med-coarse, sandy FILL w/tar fragments, odor & staining
		7-9'	2000+ ppm 2000+ ppm		FILL, wood Grayish-black, coarse-med, sandy FILL, odor, heavy staining, saturated, wet
		9-11'	2000+ ppm 2000+ ppm		Grayish-black, coarse-v. coarse, sandy FILL w/fine-coarse gravel, heavy staining, odor
10		11-13'	2000+ ppm 2000+ ppm 2000+ ppm		Same as above
		13-15'	2000+ ppm		Medium gray, coarse-v. coarse, sandy FILL, odor, w/wood fragments
15		15-17'	2000+ ppm 2000+ ppm		Wood (0.25') Med gray, coarse-v. coarse, micaceous, sandy FILL, odor, sheen & staining
		17-19'	2000+ ppm 2000+ ppm 2000+ ppm		Med-dark gray, coarse-v. coarse, sandy FILL w/fine gravel, wood fragments, odor
		19-21'	2000+ ppm 2000+ ppm		Med gray, coarse-v. coarse, micaceous, sandy FILL, trace of wood, shell fragments, slight odor
20		21-23'	14.7 ppm 17.5 ppm 5.8 ppm		Med-drk gray, coarse-v. coarse, micaceous, sandy FILL, w/wood frags, fine-coarse gravel Lt. gray/gray-orange, coarse-v. coarse SAND, w/some mica
		23-25'	6.0 ppm 6.2 ppm		Same as above, w/shell fragments, fine-coarse gravel, no mica Med gray, coarse-v. coarse, micaceous SAND w/shell fragments, fine gravel
25		25-27'	8.0 ppm 7.1 ppm		Lt. brownish-gray, coarse-v. coarse SAND w/fine-coarse gravel Med gray, coarse-v. coarse SAND w/some fine gravel
		27-29'	12.0 ppm 7.3 ppm		Light gray, coarse-v. coarse SAND w/shell fragments, coarse gravel
		29-31'	10.4 ppm 84.5 ppm 49.4 ppm		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'	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'	45.1 ppm 32.1 ppm 7.3 ppm		Med light gray, med–v. coarse, micaceous SAND, w/shell fragments, some fine gravel, odor, slight staining
35		35–37'			No recovery (35'–37')
		37–39'	10.8 ppm 12.2 ppm		Med gray, med–v. coarse, micaceous SAND, w/fine gravel
		39–41'	0.9 ppm 0.4 ppm 3.3 ppm		Med gray, med–fine, micaceous SAND
40		41–43'	5.0 ppm 3.9 ppm 3.6 ppm		Same as above
		43–45'	1.2 ppm 0.8 ppm		Same as above
45		45–47'	0.0 ppm		Same as above
		47–49'	0.0 ppm 7.6 ppm 35.6 ppm		Med gray, med–coarse, micaceous SAND
50		50–52	13.4 ppm 11.2 ppm		Same as above
55		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.
60					
65					

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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		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		10–12'	300 ppm 300 ppm 250 ppm		Gray, fine SAND, med dense, w/hydrocarbon–like odor, some heavy brown staining, wet
15		15–17'	250 ppm		Same as above, w/intermittent staining
20		20–22'	100 ppm 150 ppm 100 ppm		Gray–brown, fine SAND, NAPL–laden, med dense, w/hydrocarbon–like odor, sheen, wet
25		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
		30-32'	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 2.2 ppm 5.5 ppm		Same as above
					Base of boring- 52 ft.
55					
60					
65					

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Site Id: RPSB-52

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 01/13/00 – 01/14/00

Total Depth: 44.00'

Elevation: 6.07'

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 6–8', 30–32', and 42–44'.

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')
5		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		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		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		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		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'	0.0 ppm 1.4 ppm	0.0 ppm 1.1 ppm 0.8 ppm		Gray, fine, micaceous SAND, med dense, wet
35		35-37'	0.0 ppm	0.0 ppm 0.0 ppm 0.2 ppm 0.0 ppm		Same as above
40		40-42'				No recovery (40-42')
		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.
45						
50						
55						
60						
65						

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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		5-7'	81.1 ppm 110 ppm 74.4 ppm	0.3 ppm 0.3 ppm 0.0 ppm		Gray-pale yellow brown, medium-fine SAND w/some mica, loose, odor, sheen, wet
10						
15		15-17'	0.2 ppm 0.0 ppm	0.2 ppm 0.0 ppm 0.2 ppm		Grayish-black/dark gray, coarse-v. coarse SAND, w/fine-coarse gravel, shells, med dense
		17-19'	0.0 ppm	0.0 ppm 0.0 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) Med gray, med SAND, med dense
20		21-23'	0.0 ppm	0.3 ppm 0.4 ppm 0.2 ppm		Med dark gray, med-coarse SAND w/fine gravel & shells Yellow-brown to med gray, coarse-v. coarse SAND w/fine gravel, shell fragments
		23-25'	0.0 ppm	0.0 ppm		Med gray-med dark gray, coarse-v. coarse SAND, w/fine-coarse gravel Med gray, med-fine SAND, med dense, some mica
25		25-27'	0.0 ppm	0.0 ppm		Med gray, med SAND w/some mica, med dense, trace coarse gravel
		27-29'	0.0 ppm	0.0 ppm		Med gray, med-coarse SAND, med dense, w/some mica, coarse gravel
		29-31'	0.0 ppm 1.6 ppm	0.3 ppm 0.4 ppm		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 3.3 ppm 0.0 ppm	0.0 ppm		Med light gray-med gray, med-coarse SAND w/some mica, med dense
35		35-37'	0.0 ppm 3.8 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
40						Base of boring- 41 ft.
45						
50						
55						
60						
65						

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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			Brown, TOPSOIL, organics, loose
			3.6 ppm			Brown, fine-med, sandy FILL, organics
			0.0 ppm			Tan, fine-med, sandy FILL, coke deposit
			0.0 ppm			Dark brown-brown, fine-med, sandy FILL, w/coke, NAPL, moist
		4-8'	0.0 ppm			Tan, fine SAND, w/NAPL, moist, loose
5			83.0 ppm			Gray-black, fine SAND, w/NAPL, heavy stain, stiff
			150.5 ppm			
			2000+ ppm			Gray, fine SAND, w/heavy NAPL, med loose, moist
		8-12'	2000+ ppm			Same as above, w/trace tar stains
10						
		12-16'	1834 ppm	10+ ppm		Gray, fine SAND, w/heavy NAPL, light stain, medium loose, wet
			2000+ ppm			Same as above
15						
		16-20'	12.5 ppm	0.2 ppm		Grayish-black, fine-med SAND, w/NAPL, black tar stain, med stiff, wet
			10.7 ppm			Same as above, but black
			11.8 ppm			
20		20-24'	244 ppm	0.2 ppm		Gray, fine-med SAND, w/NAPL, med stiff, moist
			374 ppm			
			12.8 ppm			
			45.2 ppm			
		24-28'	23.2 ppm	1.0 ppm		Same as above, stiff
25			4.3 ppm			
			0.8 ppm			
		28-32'	8.5 ppm	1.0 ppm		Same as above, med stiff
			3.4 ppm			

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
			8.1 ppm			Gray, fine-medium SAND, w/NAPL, medium stiff, wet
		32-36'	42.3 ppm	1.5 ppm		Gray, fine SAND, med stiff, wet
			25.3 ppm			
			42.4 ppm			
35						
		36-38'	6.8 ppm			Light gray, fine SAND, med stiff, wet
		38-40'	141 ppm	2.0 ppm		Gray, fine SAND, w/slight NAPL, trace tar, med stiff, wet
			85.0 ppm			
40						
45		45-47'	0.0 ppm	0.0 ppm		Gray, fine-med SAND, med stiff, wet
			0.0 ppm			
50		50-52'		0.0 ppm		Same as above, loose
						Base of boring- 52 ft.
55						
60						
65						

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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'

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		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		35-37'	0.0 ppm		Gray, med-fine SAND, dense, wet
40		40-42'	0.0 ppm		Same as above
					Base of boring - 42 ft.
45					
50					
55					
60					
65					

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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		35-37'	0.0 ppm		Same as above
40		40-42'	0.0 ppm		Same as above, wet
					Base of boring- 42 ft.
45					
50					
55					
60					
65					

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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, gravely 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		35-37'	0.0 ppm		Gray, med-fine SAND, medium dense, wet
40		40-42'	0.0 ppm		Same as above
					Base of boring - 42 ft.
45					
50					
55					
60					
65					

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Site Id: RPSB-58

Location: Rockaway Park

Purpose: Soil 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'	0.0 ppm	0.0 ppm		Pale–moderate yellowish–brown, med–coarse SAND w/trace fine gravel, loose
		4–6'	0.0 ppm	0.0 ppm		Moderate brown, med–coarse SAND, w/trace fine gravel
5						Yellowish–brown/brownish gray to light gray, med–coarse SAND, trace black sand on top, wet
10		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		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		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		25–27'	0.0 ppm	0.0 ppm		Pale yellowish–brown, med–coarse SAND, med dense, w/some 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		35-37'	0.0 ppm			Same as above
40		40-42'	0.0 ppm			Same as above
						Base of boring- 42 ft.
45						
50						
55						
60						
65						

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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 & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
		30-32'	0.0 ppm	0.0 ppm		Gray, fine, micaceous SAND, med dense, wet
35		35-37'	0.0 ppm	0.0 ppm		Dark gray, fine, micaceous SAND, med dense, wet
40		40-42'	0.0 ppm	0.0 ppm		Dark gray, fine SAND, med dense, wet
		43-45'	0.0 ppm	0.0 ppm		Same as above
45						Base of boring - 45 ft.
50						
55						
60						
65						

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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
5		6–8'	0.0 ppm	0.0 ppm		Tan, fine–med SAND, loose, wet
10		10–12'	0.0 ppm	0.0 ppm		Same as above
15		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		20–22'	0.0 ppm			Tan, fine–coarse SAND w/subrounded–rounded gravel
25		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
		30-32'	0.0 ppm 4.7 ppm	0.0 ppm		Gray, fine SAND, med dense, wet
35		35-37'	0.0 ppm	0.0 ppm		Same as above, micaceous
40		40-42'	0.0 ppm	0.0 ppm		Same as above
						Base of boring- 42 ft.
45						
50						
55						
60						
65						

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Site Id: RPSB-61

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/10/00 – 02/10/00

Total Depth: 57.00'

Elevation: 7.68'

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 10–12' and 55–57'. No HCN for 15–17' and 20–22' due to previous high concentrations.

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'
10		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
20		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'	30.0 ppm 50.0 ppm			Gray, fine SAND, med dense, w/slight solvent-like odor, wet
35		35-37'	48.2 ppm 50.1 ppm			Gray, fine SAND, dense, no odor, wet
40		40-42'	7.3 ppm 11.9 ppm			Same as above
45		45-47'	15.5 ppm 13.2 ppm			Gray, fine SAND, med dense, w/shells, wet
50		50-52'	17.5 ppm			Gray, fine-med SAND, med dense, wet
55		55-57'	8.7 ppm 9.1 ppm			Same as above
60						Same as above
						Base of boring - 57 ft.
65						

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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
35		35-37'	0.0 ppm 10.1 ppm	0.0 ppm		Gray, fine SAND, med dense, wet
40		40-42'	0.0 ppm	0.0 ppm		Same as above
						Base of boring- 42 ft.
45						
50						
55						
60						
65						

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Site Id: RPSB-63

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 02/23/00 – 02/23/00

Total Depth: 47.00'

Elevation: 8.16'

Datum: Mean Sea Level

Logged By: Patrick West

Drilling Method: Hydraulic hammer

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

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

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
		30-32'	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.
50					
55					
60					
65					

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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
			0.0 ppm		Yellow-orange, medium SAND and GRAVEL
		2-4'	0.0 ppm		Same as above
			0.0 ppm		Yellow-orange, medium SAND and GRAVEL, w/isolated red stains
		4-6'	0.0 ppm		Orange, medium SAND, loose, w/isolated black tar stains, slight odor
5			0.0 ppm		Orange, med-fine SAND, loose, w/isolated black tar stains, slight odor
		6-8'	0.0 ppm		Brown-gray, fine SAND, dense, moist
			0.0 ppm		Brown-gray, medium-fine SAND, dense, discolored, moist
		8-10'	0.0 ppm		Brown-gray, fine SAND, dense, wet
			0.0 ppm		Gray, fine SAND, dense, w/slight tar-like odor, wet
10		10-12'	0.0 ppm		Light beige, medium-fine SAND, compact, moist
			0.0 ppm		Gray, fine SAND, dense, moist
		12-14'	0.0 ppm		Gray, fine SAND, dense, w/tar-like odor, wet
			0.0 ppm		Gray, fine SAND, dense, slight tar-like odor, moist
		14-16'	0.0 ppm		Same as above
15			0.0 ppm		Gray, medium SAND, dense, w/slight tar-like odor, moist
					Base of boring- 16 ft.
20					
25					

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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
		0-4'	0.0 ppm		Gray, medium SAND, soft
					Beige, medium SAND
			0.0 ppm		Light beige, medium-fine SAND, soft, w/slight tar-like odor
		4-8'			
5			0.0 ppm		Brown-beige, fine SAND, soft, discolored, slight odor
					Beige, fine SAND, dense, slight odor, moist
			0.0 ppm		Beige-orange, fine SAND, dense, slight odor, moist
			17.9 ppm		Gray, fine SAND, dense, naphthalene-like odor, moist
		8-12'	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
			0.0 ppm		Gray, fine SAND, dense, w/slight tar-like odor, moist
		12-16'			
			0.0 ppm		
15					
			0.0 ppm		Gray, medium SAND, dense, slight odor, moist
					Base of Boring- 16 ft.
20					
25					

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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: Zebra Environmental

Borehole Dia.: 2.00in

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

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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		Grey-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					

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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'	0.0 ppm		Dark brown, TOPSOIL w/black coal
		2-4'	0.0 ppm		Dark brown, medium SAND Orange-yellow, medium SAND Brown, medium-coarse SAND
5		4-6'	0.0 ppm		Beige, medium SAND, yellow-orange staining, moist
		6-8'	0.0 ppm		Gray-brown, medium SAND, moist Gray-orange, medium SAND, wet
		8-10'	0.0 ppm		Beige-dark brown, medium SAND, moist
10		10-12'	0.0 ppm		Gray-beige, fine SAND, moist Light beige, medium SAND, w/slight tar-like odor, moist
		12-14'	0.0 ppm		Gray, medium-fine SAND, no odor, moist Gray, fine SAND, wet
15		14-16'	0.6 ppm 0.0 ppm		Gray, coarse SAND, moist, w/slight naphthalene-like odor
					Base of boring- 16 ft.
20					
25					

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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
					Brown, fine SAND
			0.0 ppm		Brown, fine SAND, moist
					Black, coarse SAND, w/trace angular gravel
		4-8'	0.0 ppm		Brown, medium SAND
5					Brown, medium-fine SAND, moist
			0.0 ppm		Brown-gray, fine SAND, w/slight naphthalene-like odor, wet
		8-12'	0.0 ppm		Gray, medium SAND, w/naphthalene-like odor, moist
10					
			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		
15			39.0 ppm		Same as above
					Base of Boring- 16 ft.
20					
25					

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

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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
		4-8'	0.0 ppm		
5			0.0 ppm		Same as above
		8-12'	0.0 ppm		Red, med-fine SAND, some staining, dense, wet
					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					

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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: Zebra 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
5			0.0 ppm		Same as above
		8-12'	0.0 ppm		Red, med-fine SAND, some staining, med dense, moist
10			0.0 ppm		Gray, med-fine SAND, some staining, med dense, moist
					Base of boring- 12 ft.
15					
20					
25					

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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
			0.0 ppm		Red, med-fine SAND, loose, moist
		4-8'			Tan, med-fine SAND, loose, moist
5			0.0 ppm		Brown, med-fine SAND, loose, moist
			0.0 ppm		Brown, med SAND, some staining, med dense, moist
		8-12'			
10			0.0 ppm		Gray, med-fine SAND, med dense, wet
			0.0 ppm		Same as above
		12-14'			
					Base of boring- 14 ft.
15					
20					
25					

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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
5		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		10-12'	0.0 ppm		Gray-tan, med-fine SAND, med dense, moist
					Base of boring- 12 ft.
15					
20					
25					

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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: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					PAVEMENT
					FILL
		4-6'	0.0 ppm		Brown-tan-gray, med-fine sandy FILL w/shell fragments, loose
5		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					

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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
		4-6'	0.0 ppm		Brn-blk, med sandy FILL, coal & shell fragments, some staining, dense, moist
5		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					

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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
			0.0 ppm		Tan-black, med-fine sandy FILL w/coal fragments
		4-8	0.0 ppm		Same as above, black
5			0.0 ppm		Black-gray, med-fine sandy FILL, w/coal fragments, some staining, loose
			0.0 ppm		Same as above
		8-12	0.0 ppm		Same as above, tan
10			0.0 ppm		Same as above
					Base of boring- 12 ft.
15					
20					
25					

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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: Zebra Environmental

Borehole Dia.: 2.00in

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

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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
					PAVEMENT
					FILL
		4-8'			No recovery (4'-8')
5					
		8-12'	1.1 ppm		Tan-brown-black, med sandy FILL, coal fragments, some staining, loose
			14.2 ppm		Same as above
10			35.5 ppm		Olive-brown, med-fine SAND, slight hydrocarbon-like odor, some staining, dense, moist
			287 ppm		
					Base of boring- 12 ft.
15					
20					
25					

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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
					PAVEMENT
					FILL
			5.6 ppm		Brown, med-coarse sandy FILL, w/concrete fragments, mild odor, loose
		4-8'	20.1 ppm		Black-brown, med sandy FILL, w/coal fragments, mild odor, some staining, loose
5			20.3 ppm		Tan, med-fine sandy FILL w/brown staining, coal fragments, odor, loose
			19.1 ppm		Same as above, but black
			33.5 ppm		Brn, med sandy FILL w/coal frags, small rocks, hydrocarbon-like odor, some staining, moist
		8-12'	17.8 ppm		Tan, med-fine SAND, w/some staining, hydrocarbon-like odor, loose
10			30.2 ppm		Gray-tan, med-fine SAND, w/some staining, strong hydrocarbon-like odor, dense, moist
			2000+ ppm		Same as above
					Base of boring- 12 ft.
15					
20					
25					

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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
			0.6 ppm		Brown-black, med-coarse sandy FILL, some staining
		4-8'			Same as above, w/clinker
5			0.0 ppm		Tan-brown, med sandy FILL, some staining, loose
			0.0 ppm		Black-brown-tan, med sandy FILL w/some staining, granite fragments
		8-12'			Tan-gray, med-fine SAND, some staining, dense, moist
10			0.0 ppm		Same as above
					Same as above
					Base of boring- 12 ft.
15					
20					
25					

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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
			0.0 ppm		Brown-tan, med sandy FILL, w/coal fragments, some staining
		4-8'			Same as above
5			0.0 ppm		Brown-gray, med-fine SAND, w/some staining, hydrogen sulfide-like odor, med dense, moist
			0.0 ppm		Gray, med-fine SAND, w/mild hydrocarbon-like odor, dense, moist
		8-12'	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.
15					
20					
25					

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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
		4–8'	0.0 ppm 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'
5					
		8–10'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Orange, fine–medium SAND, loose, wet
10					Base of boring – 10 ft.
15					
20					
25					

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Site Id: RPSB-89

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/13/01 – 11/14/01

Total Depth: 61.00'

Elevation: 7.99'

Datum: Mean Sea Level

Logged By: J. Schafer

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

Contractor: Delta Well & Pump

Borehole Dia.: 6.50in

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

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–5'			Brown, silty FILL, loose, dry
					Orange–brown, fine–coarse SAND w/some fine gravel and clam shells, loose, slightly moist
					Gray, fine SAND, loose, slightly moist
5		5–7'	0.0 ppm 0.0 ppm		Gray, fine SAND w/clam shells, loose, moist to wet at 5.5'
		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
10		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		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
20		21–23'	0.0 ppm 7.5 ppm 6.0 ppm		Same as above, mild naphthalene–like odor
		23–25'	2.1 ppm 4.3 ppm 7.1 ppm 6.6 ppm		Same as above, naphthalene–like odor
25		25–27'	0.0 ppm 0.0 ppm 2.0 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	PID	Graphic Log	Material Description
		31–33'	3.2 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine SAND w/clam shells, medium dense, naphthalene–like odor, wet
		33–35'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–medium SAND w/hornblende/biotite, medium dense, slight naphthalene–like odor, wet
35		35–37'	2.8 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Black, fine SAND, medium dense, slight hydrocarbon–like odor, wet
		37–39'	0.0 ppm 0.0 ppm 0.0 ppm 1.0 ppm		Same as above, slight naphthalene–like odor
		39–41'	0.0 ppm 0.0 ppm 3.1 ppm 5.0 ppm		Same as above
40		41–43'	1.5 ppm 3.5 ppm		Black–dark gray, fine SAND, medium dense, slight naphthalene–like odor, wet
		43–45'	2.6 ppm 2.6 ppm		Dark gray, fine SAND w/small hornblende flecks, medium dense, hydrocarbon–like odor, wet
45		45–47'	4.0 ppm 10 ppm 10.5 ppm		Dark gray, very fine–fine SAND, medium dense, hydrocarbon–like odor, wet
		47–49'	5.0 ppm 15 ppm 22 ppm 12 ppm		Same as above, hydrocarbon–like odor is stronger
		49–51'	6.4 ppm 5.9 ppm 3.5 ppm 6.1 ppm		Dark gray, fine–coarse SAND w/hornblende and clam shells, loose, organic (H2S–like) odor, wet
50		51–53'	0.5 ppm 3.4 ppm 4.1 ppm		Same as above, no hornblende or clam shells
		53–55'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark gray–gray, fine–coarse SAND to fine–medium SAND w/some coarse at 54.75', organic (H2S–like) odor, wet
55		55–57'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark gray, fine–coarse SAND w/hornblende, trace fine gravel, loose, slight organic (H2S–like) odor, wet
		57–59'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–coarse SAND w/clam shells, trace coarse gravel, medium loose, slight organic (H2S–like) odor, wet
		59–61'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
60					Base of boring – 61 ft.
65					

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Site Id: RPSB-90

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/02/01 – 11/02/01

Total Depth: 20.00'

Remarks: Samples selected for analysis at 4–6' and 16–18'.

Elevation: 9.76'

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, fine–medium sandy FILL w/trace fine gravel, loose, trace clinker, dry
		4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown–orange, medium sandy FILL w/sea shells, loose, trace coal, dry–moist at 5.4'
5					
		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Orange–tan (to 9.1'), orange (to 11.1'), fine–medium SAND w/trace fine gravel and sea shells, loose, wet at 9.1'
10					
		12–16'	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		Orange, fine–medium SAND, loose, wet
15					Same as above, charcoal gray, hydrocarbon–like odor
		16–20'	0.0 ppm 0.0 ppm 0.0 ppm 0.8 ppm		Charcoal gray, fine–medium SAND, loose, 2" band of black very fine sand, hydrocarbon–like odor, wet
20					Base of boring – 20 ft.
25					

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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 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')
5		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
10		12–16'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 2.5 ppm 6.6 ppm		Gray, fine–medium SAND w/sea shells, loose, organic (H2S–like) odor, wet
15		16–20'	0.0 ppm 6.9 ppm 5.3 ppm 3.2 ppm 9.3 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		20–24'	2.3 ppm 1.5 ppm 2.8 ppm 4.8 ppm 15.4 ppm 16.2 ppm 13.2 ppm 7.4 ppm 28.8 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
25		24–28'	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.)

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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
					Brown, fine–medium sandy FILL, loose, coal fragments, dry
		4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, mild naphthalene–like odor at 5.75'
5					
		8–12'	0.0 ppm 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')
10					
		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
15					
		16–20'	29.5 ppm 141 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
20		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
		24–28'			Same as above (liner jammed, sample placed onto polyliner) Brown–black, fine–medium–coarse SAND, heavy staining (DNAPL)
25					
		28–30'	511 ppm 112 ppm 163 ppm		Brown, medium–coarse SAND, loose, tar staining, strong naphthalene–like odor, wet

Location: Rockaway 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 310 ppm 141 ppm 296 ppm		Br–bk, f–c SAND w/f gravel, loose, tar staining, strong naphthalene–like odor
		32–34'	272 ppm 280 ppm 195 ppm		Brown, fine SAND, loose, tar staining (less than above), moderate naphthalene–like odor, wet
		34–36'			Brown, fine SAND, loose, NAPL saturated, tar staining, strong naphthalene–like odor, wet (liner jammed, sample placed into plastic bag)
35		36–38'			Br, fine–med SAND, loose, tar staining (less than above), strong naphthalene–like odor, wet (liner jammed, sample placed into plastic bag)
		38–40'	292 ppm 189 ppm 130 ppm 126 ppm		Same as above, fine, moderate tar staining
40		40–42'	89.3 ppm 54.9 ppm 76.4 ppm 7.7 ppm		Brown–gray, fine SAND, loose, tar staining from 40.5–41', moderate naphthalene–like odor, wet
		42–44'	65.7 ppm 126 ppm 214 ppm 233 ppm		Same as above, NAPL staining, strong naphthalene–like odor
		44–46'	86 ppm		Gray, fine–medium SAND, loose, tar blebs, moderate naphthalene–like odor, wet (liner jammed, sample placed into plastic bag, headspace PID)
45		46–48'			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'	116 ppm		Same as above, tar blebs but no staining, moderate naphthalene–like odor (liner jammed, sample placed into plastic bag, headspace PID)
50		50–52'	327 ppm 314 ppm 338 ppm 103 ppm		Gray, fine SAND, loose, moderate tar staining w/heavy black banding throughout, strong naphthalene–like odor, wet
		52–54'	142 ppm 249 ppm 150 ppm 144 ppm		Br–red, fine SAND, loose, NAPL saturated, strong naphthalene–like odor, wet Brownish gray, fine SAND, heavy banding, strong naphthalene–like odor
		54–56'	301 ppm 60.1 ppm 52.5 ppm 57 ppm		Brown–gray, fine SAND, loose, NAPL saturated (54–54.8'), black staining, wet Gray, fine–coarse SAND, loose, NAPL saturated, black banding at 55', strong naphthalene–like odor, wet
55					Base of boring – 56 ft.
60					
65					

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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
					Material descriptions begin at 40 ft.
5					
10					
15					
20					
25					

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
35					
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
		42-44'	68 ppm 80 ppm 90 ppm		Same as above, dense with lenses of brown NAPL
45		44-46'	50 ppm 80 ppm 80 ppm 95 ppm		Gray, fine SAND w/silt lens at 46', dense, lenses of brown NAPL, brown staining, naphthalene-like odor, wet
		46-48'	73 ppm 130 ppm 100 ppm		Same as above, naphthalene-like odor, no silt or NAPL
		48-50'	80 ppm 90 ppm 108 ppm		Same as above, medium dense, naphthalene-like odor
50		50-52'	27 ppm 80 ppm 75 ppm 50 ppm		Same as above
		52-54'	50 ppm 75 ppm 30 ppm 100 ppm		Gray, fine SAND w/some mica flakes, medium dense, intermittant staining, naphthalene-like odor, wet
		54-56'	75 ppm 35 ppm 35 ppm 21 ppm		Dark gray, fine-coarse SAND w/some snail shells, medium dense, moderate brown staining, naphthalene-like odor
55		56-58'	25 ppm 36 ppm 40 ppm 70 ppm		Same as above, heavy staining, shells, wet
		58-60'	85 ppm 65 ppm 30 ppm 65 ppm		Same as above, shells, mica flakes, dense
60		60-62'	65 ppm 20 ppm 50 ppm 10 ppm		Dark gray, fine SAND w/mica flakes, medium dense, naphthalene-like odor, sheen, wet
		62-64'	10 ppm 15 ppm 45 ppm 15 ppm		Same as above, dense
		64-66'	12 ppm 12 ppm 35 ppm 10 ppm		Same as above
65		66-68'	10 ppm 5.0 ppm 30 ppm 20 ppm 10 ppm		Dark gray, fine SAND, dense, light staining, naphthalene-like odor, sheen, wet
		68-70'	10 ppm 5.0 ppm 3.0 ppm 3.0 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		Gr, f SAND w/mica, biotite flakes, m dense, naphthalene–like odor, sheen, wet
		72–74'	1.3 ppm 9.0 ppm 5.0 ppm		Brown, silty very fine SAND w/mica and biotite flakes, dense, moist
		74–76'	3.5 ppm 2.5 ppm		Brown, fine sandy SILT, dense, slight naphthalene–like odor, wet
75		76–78'	21 ppm 35 ppm 35 ppm 45 ppm		Brown–gray, fine SAND w/mica flakes, medium dense, naphthalene–like odor, moist, minute blebs of floating NAPL
		78–80'	21 ppm 25 ppm 15 ppm		Brown, fine–very fine SAND, medium dense, naphthalene–like odor, wet
80		80–82'	10 ppm 14 ppm 22 ppm 35 ppm		Brown, fine SAND w/mica flakes, medium dense, naphthalene–like odor, sheen, blebs of floating NAPL, very moist
		82–84'	4.6 ppm 12 ppm 4.0 ppm		Brown, very fine–fine SAND w/mica flakes, medium dense, slight naphthalene–like odor, moist
		84–86'	8.0 ppm 7.0 ppm 4.0 ppm		Same as above, dark brown staining throughout, naphthalene–like odor, sheen
85		86–88'	8.0 ppm 35 ppm 30 ppm 13 ppm		Same as above, dense, staining at 87.25–88', no sheen
		88–90'	30 ppm 80 ppm 15 ppm 35 ppm 40 ppm		Same as above, heavy NAPL staining at 89.5–90', heavy naphthalene–like odor
90		90–92'	220 ppm 20 ppm 30 ppm 25 ppm		Same as above, intermittant staining from 91–92', naphthalene–like odor
		92–94'	45 ppm 3.0 ppm 65 ppm 130 ppm		Dark brown, very fine–fine SAND, dense, brown staining, heavy naphthalene–like odor, moist
		94–96'	120 ppm 75 ppm 80 ppm 120 ppm		Brown, very fine–fine SAND, dense, heavy brown staining, heavy naphthalene–like odor, very moist
95		96–98'	80 ppm 250 ppm 40 ppm 100 ppm		Same as above
		98–100'	100 ppm 80 ppm 46 ppm 46 ppm 46 ppm		Same as above
100					Base of boring – 100 ft.
105					

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Site Id: RPSB-93

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/01/01 – 11/01/01

Total Depth: 30.00'

Remarks: Sample selected for analysis at 6–8'.

Elevation: 10.88'

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–tan, fine–medium sandy FILL w/trace fine gravel, loose, clinker deposits from 0–1', dry
5		4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 1.0 ppm		Tan, fine–medium sandy FILL w/remnants of decaying sea shells, loose, minor orange banding at 6.1', dry (moist at 7.1')
		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.3 ppm 3.5 ppm		Tan, fine sandy FILL, loose, clinker at 8.5', organic (H2S–like) odor, moist Tan, fine SAND, loose, orange banding at 10.5 and 11', bottom 6" charcoal gray, organic (H2S–like) odor, moist (wet at 9.5')
10		12–16'	0.0 ppm 0.0 ppm 1.9 ppm 3.6 ppm 2.9 ppm 0.8 ppm 0.6 ppm 1.3 ppm		Brown–gray–charcoal gray, fine SAND, loose, dark black discolored sand in bottom 2", organic (H2S–like) odor, wet
15		16–20'	0.3 ppm 2.9 ppm 0.2 ppm 6.2 ppm 206 ppm 28 ppm 392 ppm		Dark black, fine SAND, loose, organic (H2S–like) odor, wet Gray, fine–medium SAND, loose, wet Gray, fine–medium SAND, coarse lens from 17.75–18.25', loose, NAPL from 17.75–18.25' and 19.1–19.25', strong naphthalene–like odor, wet
20		20–24'	45 ppm 6.9 ppm 28.6 ppm 21.8 ppm 26.5 ppm 29.1 ppm 9.8 ppm		Gray, fine SAND, loose, organic (H2S–like) odor, wet
25		24–28'	3.1 ppm 1.9 ppm 14.3 ppm 3.6 ppm 6.0 ppm 12.2 ppm 5.4 ppm 2.1 ppm		Same as above, fine–medium
		28–30'	17.9 ppm 6.9 ppm 24.8 ppm 228 ppm		Same as above, fine–medium–coarse, bottom 5" had heavy staining, banding and strong naphthalene–like odor (Base of boring – 30 ft.)

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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
		4–8'	0.0 ppm 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')
5					
		8–12'	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 Brown–orange, fine–medium SAND w/sea shells, loose, 2" band of dark brown at 9.25', bottom 6" is charcoal gray, wet
10					
		12–16'	5.5 ppm 1.6 ppm 0.0 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
15					
		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
20					Base of boring – 20 ft.
25					

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Site Id: RPSB-95

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 10/31/01 – 10/31/01

Total Depth: 40.00'

Remarks: Samples selected for analysis at 4–6' and 36–38'.

Elevation: 8.32'

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'			Brown–orange–gray, medium SAND, loose, dry
		4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown–gray, fine–medium SAND, loose, purple streak at 5.25' and 6.25' (decaying sea shells?), moist (wet at 5.25')
5					
		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 4.0 ppm 0.0 ppm 1.5 ppm		Brown–gray, fine–medium SAND, loose, purple streaking from 9.4–9.9', mild naphthalene–like odor at 8', wet
10					
		12–16'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.6 ppm 0.9 ppm		Brown–gray, fine–medium SAND w/decayed sea shells, loose, organic (H2S–like) odor, wet
15					Same as above, black, fine sandy clay lens at 15.2'
		16–20'	10 ppm 5.0 ppm 12.3 ppm 4.1 ppm		Gray, fine SAND, loose, very mild naphthalene–like odor, wet
20		20–23'	16.7 ppm 22.4 ppm 27.3 ppm 7.6 ppm 20 ppm 17.4 ppm		Same as above, fine–medium, mix of organic (H2S–like) and mild naphthalene–like odor
		23–26'	8.9 ppm 4.9 ppm 23.5 ppm 23.9 ppm		Dk gray, fine–med SAND w/sea shell fragments, loose, mix of organic (H2S–like) and slight naphthalene–like odor, wet
25		26–30'	8.1 ppm 8.6 ppm 0.0 ppm 4.1 ppm 1.8 ppm 3.6 ppm 2.6 ppm 0.5 ppm 0.0 ppm 1.5 ppm		Charcoal gray, fine SAND, loose, mild organic (H2S–like) odor, wet

Location: Rockaway Park	Site Id: RPSB-95
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
		30-34'	0.8 ppm 0.0 ppm 0.0 ppm 2.5 ppm 0.0 ppm 1.1 ppm 0.0 ppm 0.0 ppm		Gray, fine SAND, loose, mild organic (H2S-like) odor, wet
		34-38'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, no odor
35					
		38-40'			No recovery - sample washed out
40					Base of boring - 40 ft.
45					
50					
55					
60					
65					

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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: Zebra 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 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
5					
		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 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
10					
		12–16'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.4 ppm		Same as above, fine Charcoal gray, fine SAND w/trace of clay at 13.75', loose, mild organic (H2S–like) odor, wet Charcoal gray, fine SAND, loose, mild hydrocarbon–like odor, wet
15					
		16–20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		
20		20–22'	2.9 ppm		Charcoal gr, f–m SAND w/shell fragments, loose, possible organic/hydrocarbon–like odor, wet (liner jammed, sample placed in plastic bag, headspace PID)
		22–24'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, organic (H2S–like) odor
		24–26'	0.0 ppm		Same as above, fine
25					
		26–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Charcoal gray, fine–medium SAND, loose, mild organic (H2S–like) odor, wet
		28–30'	0.0 ppm 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: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30-32'	0.1 ppm 0.1 ppm 0.1 ppm		Charcoal gray, fine-medium SAND, loose, mild organic (H2S-like) odor, wet
		32-34'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above, no odor
		34-36'	0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine-medium SAND, loose, wet
35		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'	0.0 ppm		Same as above, no odor (liner jammed, sample placed in plastic bag, headspace PID)
40					Base of boring - 40 ft.
45					
50					
55					
60					
65					

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Site Id: RPSB-97

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/26/01 – 11/27/01

Total Depth: 59.00'

Elevation: 7.27'

Datum: Mean Sea Level

Logged By: J. Schafer

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

Contractor: Delta Well & Pump

Borehole Dia.: 6.50in

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

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'	16 ppm 62 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
		9–11'	400 ppm 2000+ ppm 2000+ ppm		White–gray, fine–medium SAND, semi–loose, heavy hydrocarbon–like odor, wet
10		11–13'	2000+ ppm 600 ppm 230 ppm		Gray, fine SAND, loose, heavy hydrocarbon–like odor, wet
		13–15'	35 ppm 110 ppm 118 ppm		Gray–black, fine–coarse SAND w/trace fine gravel, semi–loose, hydrocarbon–like odor, wet
15		15–17'	25 ppm 55 ppm 61 ppm		Same as above, black, loose
		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
20		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 10 ppm 11 ppm		Same as above
25		25–27'	2.5 ppm 3.0 ppm		Same 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
		29–31'	12 ppm 8.0 ppm		Same 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
			5.0 ppm		
			2.0 ppm		Gray, fine-medium SAND, medium dense, slight hydrocarbon-like odor, wet
		31-33'	0.0 ppm		
			0.0 ppm		Gray, fine SAND, medium dense, wet
			0.0 ppm		
			30 ppm		Same as above, dark gray
		33-35'	2.2 ppm		
			4.0 ppm		
			3.0 ppm		
35			400 ppm		Same as above, slight hydrocarbon-like odor
		35-37'	50 ppm		
			10 ppm		
			8.0 ppm		
			40 ppm		Dark gray-light gray, fine-medium SAND, medium dense, hydrocarbon-like odor from 37-37.5', slight odor from 37.5-39', wet
		37-39'	30 ppm		
			6.0 ppm		
			1.5 ppm		
			23 ppm		Gray, fine SAND, medium dense, hydrocarbon-like odor, wet
		39-41'	12 ppm		
40			19 ppm		
			8.5 ppm		Same as above
			48 ppm		
		41-43'	20 ppm		
			15 ppm		
			10 ppm		
			8.0 ppm		Same as above
		43-45'	5.0 ppm		
			12 ppm		
			5.0 ppm		
45			1.0 ppm		Gray, fine SAND, medium dense, slight hydrocarbon-like odor, wet
		45-47'	11.5 ppm		
			1.5 ppm		
			7.0 ppm		Same as above
		47-49'	5.0 ppm		
			7.0 ppm		
			5.0 ppm		
			6.0 ppm		Same as above
		49-51'	0.5 ppm		
50			0.6 ppm		
			0.0 ppm		Dark gray, fine-coarse SAND w/shells, semi-loose, slight hydrocarbon-like odor, wet
		51-53'	0.0 ppm		
			0.0 ppm		
			0.0 ppm		
			0.0 ppm		Same as above, trace fine gravel, no odor
		53-55'	0.0 ppm		
			0.0 ppm		
			0.0 ppm		
55			0.0 ppm		Same as above, slight hydrocarbon-like odor
		55-57'	6.1 ppm		
			5.4 ppm		
			0.5 ppm		
			5.0 ppm		Same as above
		57-59'	0.0 ppm		
			0.0 ppm		
			0.0 ppm		
					Base of boring - 59 ft.
60					
65					

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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)
		4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 2.0 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'
5					
		8–12'	20.5 ppm 25.2 ppm 5.1 ppm 0.8 ppm 2.6 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
10					
		12–16'	612 ppm 161 ppm 220 ppm 116 ppm		Charcoal gray, fine–medium SAND (coarse in top 3–5"), loose, solvent/sewage–like odor, wet
15					
		16–20'	562 ppm 82.8 ppm 75.8 ppm 79.2 ppm 129 ppm 111 ppm		Charcoal gray, medium–coarse SAND w/fine gravel and sea shells, loose, strong solvent/sewage–like odor, wet
20		20–24'	260 ppm 83.1 ppm 63.7 ppm 155 ppm 29.3 ppm 21.3 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
		24–28'	0.9 ppm 3.6 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
25					
		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
			0.0 ppm 0.0 ppm		Charcoal gray, fine-medium SAND, loose, mild sewage-like odor, wet
		32-36'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, mild organic (H2S-like)/sewage-like odor
35		36-40'	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					

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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		5–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Orange–tan, fine–medium sandy FILL, loose, coal fragments, dry Gray, fine–medium SAND, loose, wet
		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		Charcoal gray–black, fine–medium–coarse SAND, loose, strong hydrocarbon/solvent/sewage–like odor, wet
10					
		12–16'	1.6 ppm 1.2 ppm 9.6 ppm 464 ppm 723 ppm 757 ppm		Black, fine–medium SAND, loose, hydrocarbon/solvent/sewage–like odor, wet
15		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.
25					

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Site Id: RPSB-99

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/14/01 – 11/14/01

Total Depth: 40.00'

Remarks: Samples selected for analysis at 6–8' and 38–40'.

Elevation: 8.06'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hand Augered 0–5', Geoprobe 5–40'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–5'			FILL, asphalt and road stone
					Dark brown–gray–orange, medium SAND, loose, dry
5		5–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 1.0 ppm		Dark brown–tan, fine–medium SAND, loose, black from 6.75–7.75', dry–wet at 6.75'
		8–12'	30.4 ppm 650 ppm 1221 ppm 340 ppm 2000+ ppm 1163 ppm		Black, fine–medium SAND, loose, solvent/sewage–like odor, wet
10					
		12–16'	2000+ ppm 1322 ppm 360 ppm 620 ppm 776 ppm		Same as above
15		16–20'	36.5 ppm 23.7 ppm 12.4 ppm 3.7 ppm 35 ppm 3.8 ppm		Same as above, med–coarse from 17.7–18.7', odor not as strong
20		20–24'	6.0 ppm 4.3 ppm 5.7 ppm 0.4 ppm 1.0 ppm 0.6 ppm 1.8 ppm		Gray, fine–medium SAND, loose, wet
		24–28'	29 ppm 11.1 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–medium–coarse SAND w/trace sea shells, loose, wet
25					
		28–32'	26.7 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–medium SAND, loose, no distinct odor, wet

Location: Rockaway 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
			0.0 ppm		Gray, fine-medium SAND, loose, no distinct odor, wet
			23.2 ppm		Same as above, mild solvent/sewage-like odor near top only
		32-36'	15.4 ppm		
			3.9 ppm		
			0.0 ppm		
			0.8 ppm		
			0.0 ppm		
35					
			0.4 ppm		Gray, fine-medium SAND, loose, slight solvent/sewage-like odor, wet
		36-40'	0.0 ppm		
			9.7 ppm		
			0.0 ppm		
			0.0 ppm		
			0.0 ppm		
			0.0 ppm		
40					Base of boring - 40 ft.
45					
50					
55					
60					
65					

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Site Id: RPSB-100

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 11/09/01 – 11/09/01

Total Depth: 40.00'

Remarks: Samples selected for analysis at 4–6' and 36–38'.

Elevation: 7.86'

Datum: Mean Sea Level

Logged By: William J. Ryan

Drilling Method: Hand Augered 0–5', Geoprobe 5–40'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–5'	0.0 ppm		Brown–orange, medium sandy FILL w/trace fine gravel and brick fill, loose, trace coal, dry (composite sample)
5		5–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–medium sandy FILL, loose, wet
		8–12'	0.0 ppm 0.0 ppm 0.2 ppm 14.7 ppm 18.8 ppm 21.5 ppm 79.6 ppm 88.3 ppm		Same as above
10					Dark gray–charcoal gray, f–m sandy FILL, loose, black banding at 9.5', transitions to bk at 10.5', hydrocarbon/sewage–like odor, wet
		12–16'	22.9 ppm 52.9 ppm 48.9 ppm 131 ppm 44.9 ppm 21.9 ppm 43 ppm		Black, fine–medium sandy FILL, loose, strong hydrocarbon/solvent/sewage–like odor, wet Same as above, gray, trace coal fragments, odor not as strong
15		16–20'	1.3 ppm 0.9 ppm 0.2 ppm 0.6 ppm 0.9 ppm 1.2 ppm 0.8 ppm		Black, fine–medium–coarse SAND w/trace fine gravel, loose, sewage–like odor, wet
20		20–24'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above Black–charcoal gray, fine–medium–coarse SAND, loose, wet
25		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, charcoal gray
		28–32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–medium SAND, loose, wet

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 ppm 0.0 ppm		Gray, fine-medium SAND, loose, wet
			0.0 ppm		Same as above
		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		
35					
		36-40'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
40					Base of boring - 40 ft.
45					
50					
55					
60					
65					

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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. Schafer

Drilling Method: Hollow Stem Auger

Contractor: Delta Well & Pump

Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					Concrete pavement and FILL (cut through using geoprobe with rock bit)
5		5–7'	0.0 ppm 0.0 ppm 0.0 ppm		Tan–dk brown–orange brown, 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
		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')
10		11–13'	130 ppm 510 ppm 750 ppm 300 ppm 165 ppm		Brown–gray–white, fine SAND, medium dense, some brown staining from 11–11.5', hydrocarbon–like odor, wet
		13–15'	38 ppm 15 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		Same as above
		19–21'	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 as 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'	0.0 ppm 0.0 ppm 0.0 ppm		Gray, very fine-fine SAND, dense, wet
		33-35'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above, some clam shells
35		35-37'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		37-39'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		39-41'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above, trace coarse gravel
40					Base of boring - 41 ft.
45					
50					
55					
60					
65					

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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		5–7'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, silty fine sandy FILL w/some glass fragments, loose, dry
		7–9'	0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine SAND, loose, dry Tan, very fine–fine SAND, loose, dry
		9–11'	0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine SAND, loose, slight hydrocarbon–like odor at 10.5', moist
10		11–13'	0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–medium SAND, loose, slight hydrocarbon–like odor, wet
		13–15'	0.0 ppm 0.0 ppm		Gray–orange–brown, very fine–fine SAND w/some gravel, loose–dense, wet
15		15–17'	0.0 ppm 0.0 ppm		Gray w/slight brown laminations, very fine–fine SAND, semi–loose, wet
		17–19'			No recovery
		19–21'	0.0 ppm 0.0 ppm		Light gray, fine–medium SAND, semi–loose, wet
20		21–23'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above, tan, shell fragments
		23–25'	0.0 ppm 0.0 ppm		Tan, fine–medium SAND w/shell fragments, trace fine–coarse gravel, loose, very slight naphthalene–like odor, wet
25		25–27'	0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine–coarse SAND w/shell fragments, some fine gravel, loose, wet
		27–29'			No recovery
		29–31'	0.0 ppm 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 ppm		Gray, fine SAND w/some shell fragments, tr hornblende, med dense, wet Base of boring – 31 ft.
35					
40					
45					
50					
55					
60					
65					

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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	PID	Graphic Log	Material Description
		0-4'	0.0 ppm		Dk brown, med-coarse sandy FILL w/fine gravel, road stone, loose, dry
					Tan, fine-med SAND w/sea shells, loose, dry (composite sample, 0-4')
		4-8'	0.0 ppm 0.0 ppm 0.0 ppm 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'
5					
		8-10'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan-gray, fine-medium SAND w/sea shells, loose, wet
10					Base of boring - 10 ft.
15					
20					
25					

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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 banding, dry-moist at 5.25', wet at 5.75'
5					
		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
10					Base of boring - 10 ft.
15					
20					
25					

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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: Zebra 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		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		Same as above, wet
10					Base of boring - 10 ft.
5					
15					
20					
25					

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Site Id: RPSB-106

Location: Rockaway Park

Purpose: Soil Boring

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

Total Depth: 10.00'

Elevation: 8.49'

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

Remarks: Sample selected for analysis at 6-8'. Boring installed in existing patch in sidewalk where a concrete core sample was taken on a previous date.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm		Gravelly FILL w/cobbles to dark brown, medium-coarse SAND w/fine-coarse gravel, loose, dry (composite sample)
5		4-8'	0.0 ppm 0.0 ppm 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, dry-moist at 6.5', wet at 7'
		8-10'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan (beach), fine-medium SAND, loose, wet
10					Base of boring - 10 ft.
15					
20					
25					

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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)
		4–8'	0.0 ppm 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'
		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
10					Base of boring – 10 ft.
5					
15					
20					
25					

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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
		0–4'	0.0 ppm		Tan (beach), fine–medium SAND w/trace of fine gravel and sea shells, loose, dry (composite sample)
		4–8'	0.0 ppm 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'
		8–10'	0.0 ppm 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.

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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. 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'			Tan–gray (beach), fine–medium SAND w/trace fine–coarse gravel and sea shell fragments, loose, dry
		4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, no gravel, wet at 5.2'
		8–10'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, wet
10					Base of boring – 10 ft.
5					
15					
20					
25					

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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
		0-4'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine-medium SAND w/sea shell fragments, loose, dry
		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'
		8-10'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, wet
10					Base of boring - 10 ft.
5					
15					
20					
25					

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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'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine–medium SAND w/trace decayed sea shells, loose, dry
		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 6.25'
		8–11'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, wet
					Base of boring – 11 ft.

5
10
15
20
25

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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'	0.0 ppm 0.0 ppm		FILL, concrete and red brick to light brown, fine SAND, loose, dry
		4–8'	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'	0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine–medium SAND, loose, wet
10					Base of boring – 10 ft.
5					
15					
20					
25					

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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. 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		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 0.0 ppm		Same as above
5					
		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')
10					
		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
15					Base of boring – 16 ft.
20					
25					

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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'	0.0 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')
5		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'	1.0 ppm 1.1 ppm 2.6 ppm 2.4 ppm 3.7 ppm 29.1 ppm		Brown, medium sandy FILL, loose, wet
10					Black, fine–medium sandy FILL, loose, mild hydrocarbon–like odor, wet
		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
15					Bk, FILL, clinker, coal fragments, gravel, loose, odor as above but mild, wet
					Base of boring – 16 ft.
20					
25					

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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'	0.0 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')
5		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'	1.0 ppm 1.1 ppm 2.6 ppm 2.4 ppm 3.7 ppm 29.1 ppm		Brown, medium sandy FILL, loose, wet
10					Black, fine–medium sandy FILL, loose, mild hydrocarbon–like odor, wet
		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
15					Bk, FILL, clinker, coal fragments, gravel, loose, odor as above but mild, wet
		16–20'			No recovery
20		20–24'	0.0 ppm 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
25		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–medium SAND, loose, organic (H2S–like) odor, wet
		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
		32-34'	34.0 ppm 23.0 ppm		Gray, fine-medium SAND, loose, strong organic (H2S-like) odor, wet
		34-36'	19.8 ppm		Same as above
35		36-38'			No recovery
		38-40'			No recovery
40		40-44'	31.9 ppm 0.0 ppm		Gray, fine-medium SAND, loose, moderate organic (H2S-like) odor, wet
					Base of boring - 44 ft.
45					
50					
55					
60					
65					

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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
5		4–8'	0.0 ppm 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
10		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 0.0 ppm		Black, FILL, coal and clinker fragments and pieces, trace fine–coarse gravel, loose, slight organic (H2S–like) odor, wet
15		16–20'	12.7 ppm 6.2 ppm		Same as above
20		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
25		24–28'	114 ppm 78.2 ppm 68.4 ppm 85.9 ppm 54.9 ppm 60.3 ppm 32.0 ppm 22.4 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'	70.2 ppm 94.3 ppm 78.1 ppm 44.7 ppm		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
		32-36'	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
35		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.
45					
50					
55					
60					
65					

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Site Id: RPSB-85

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/06/02 – 03/07/02

Total Depth: 50.00'

Elevation: 5.63'

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 0–2', 24–25.5' and 36–38'.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–4'	6.1 ppm 69.7 ppm 147 ppm 14.9 ppm		Brown to orange–brown, fine–medium sandy FILL, clinker pieces, loose, moist (PID malfunction, possibly due to moisture)
5		4–8'	15.5 ppm 2.0 ppm 216 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)
10		8–12'	1.3 ppm 5.8 ppm 1.8 ppm 0.8 ppm		Same as above, sea shell fragments (new PID)
		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
15		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		20–24'	0.4 ppm 0.6 ppm 0.6 ppm 0.4 ppm		Same as above
25		24–28'	97.5 ppm 9.8 ppm 153 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 naphthalene–like odor, wet
		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
			5.2 ppm 3.0 ppm		Gray, fine-medium SAND w/trace sea shell fragments, loose, organic (H2S-like) odor, wet
		32-36'	14.8 ppm 88.6 ppm 12.8 ppm 16.3 ppm		Gray, fine-medium SAND, loose, strong organic (H2S-like) odor, wet
35					
		36-40'	18.3 ppm 13.6 ppm 8.4 ppm 0.6 ppm 2.3 ppm		Same as above, organic (H2S-like) odor
40		40-44'	49.7 ppm 20.2 ppm 80.3 ppm 86.4 ppm 104 ppm 144 ppm 77.3 ppm		Same as above, strong organic (H2S-like) odor
		44-48'	83.7 ppm		Same as above
45					
		48-50'			No recovery
50					Base of boring - 50 ft.
55					
60					
65					

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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')
10		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
15		12–16'	0.0 ppm 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
		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 5.5 ppm 11.3 ppm 7.7 ppm		Gray, fine–medium–coarse SAND, loose, moderate organic (H2S–like) odor, wet
		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
			11.2 ppm 0.0 ppm		Gray, fine-medium SAND, loose, moderate organic (H2S-like) odor, wet
		32-36'	0.0 ppm 0.0 ppm 5.5 ppm		Gray, fine-medium-coarse SAND, loose, mild organic (H2S-like) odor, wet
35		36-40'	66.3 ppm 51.2 ppm 82.8 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
		44-46'			No recovery
45					Base of boring - 46 ft.
50					
55					
60					
65					

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Site Id: RPSB-87

Location: Rockaway Park

Purpose: Soil Boring

Date(s): 03/08/02 – 03/08/02

Total Depth: 42.00'

Elevation: 4.77'

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', 21–23' and 37–39'.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		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'	0.0 ppm 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
5					
		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
10					
		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'
15					
		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		20–24'	0.0 ppm 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 Gray, medium–coarse SAND w/sea shell fragments, loose, wet
		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–medium–coarse SAND w/trace sea shell fragments and fine gravel, loose, wet
25					
		28–32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–medium–coarse SAND, loose, mild organic (H2S–like) odor, wet

Location: Rockaway Park	Site Id: RPSB-87
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
			0.0 ppm		Gray, fine-medium-coarse SAND, loose, mild organic (H2S-like) odor, wet
		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		Same as above, trace sea shell fragments
35		36-40'	1410 ppm 559 ppm 2000+ ppm 496 ppm 413 ppm 101 ppm		Gray, fine-medium-coarse SAND, loose, strong organic (H2S-like) odor, wet (very slow PID response)
40		40-42'	2000+ ppm		Poor recovery, small amount placed into plastic bag, headspace PID
					Base of boring - 42 ft.
45					
50					
55					
60					
65					

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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
					Material descriptions begin at 30 ft.
5					
10					
15					
20					
25					

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

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30–32'	3.8 ppm 12.9 ppm		Charcoal gray, fine–medium SAND, loose, moderate organic (H2S–like) odor, wet
		32–34'	0.0 ppm 0.0 ppm 3.8 ppm		Same as above, trace coarse sand and sea shell fragments
		34–36'	0.0 ppm 0.0 ppm 13.5 ppm		Charcoal gray, fine–med SAND, trace coarse sand and fine gravel, trace sea shell fragments, loose, moderate organic (H2S–like) odor, wet
35		36–38'	3.4 ppm 0.0 ppm 0.0 ppm 29.0 ppm		Same as above
		38–40'	2.8 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
40		40–42'	5.0 ppm 0.0 ppm 12.5 ppm 27.0 ppm		Gray, fine–medium SAND, loose, moderate organic (H2S–like) odor, wet
		42–44'	0.0 ppm 0.0 ppm 12.1 ppm		Same as above
		44–46'	3.9 ppm 0.0 ppm 0.0 ppm 5.1 ppm		Same as above
45		46–48'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		48–50'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
50		50–52'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		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		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		Same as above
55		56–58'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above Brown, fine–medium SAND, loose, wet
		58–60'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown and gray, fine–medium SAND, loose, wet
60					Base of boring – 60 ft.
65					

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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: 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		Black, medium sandy FILL w/coal fines, wood shavings from bulkhead material Brown–black, medium sandy FILL, loose, some coal fines, moist
5		4–8'	0.0 ppm 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', coal fines, moist (wet at 8')
10		8–12'	0.0 ppm 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.
15					
20					
25					

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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'	0.0 ppm 0.0 ppm 0.0 ppm		Brown to orange–brown, medium sandy FILL w/some coal fines at .5' and 1.5'
5		4–8'	0.0 ppm 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')
10		8–12'	0.0 ppm 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.
15					
20					
25					

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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'	0.0 ppm 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
					Gravelly FILL
		4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown to orange–brown, fine–medium sandy FILL, loose, some coal fines, moist (wet at 6.5')
5					
					Brown, medium–coarse SAND w/gravel, loose, wet
		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Light brownish orange and tannish gray, fine–medium SAND, loose, wet
10					
					Base of boring – 12 ft.
15					
20					
25					

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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 11.0 ppm 7.3 ppm 0.0 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		Black, 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

Location: Rockaway Park	Site Id: RPSB-116
Purpose: Soil Boring	Total Depth: 70.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30–32'	0.0 ppm 0.0 ppm 0.0 ppm		Bk, f–m–c sandy FILL w/f gravel, coal, clinker and red brick fragments, to gray, fine–medium SAND, slight naphthalene–like odor, loose, wet
		32–34'	1.2 ppm 3.5 ppm 4.5 ppm		Black, medium–coarse SAND, little gravel, shell fragments, slightly hard, slight naphthalene–like odor, wet
		34–36'	3.5 ppm 3.6 ppm 10.0 ppm		Same as above, medium, no gravel or shell fragments, slight sheen at 35'
35		36–38'	2.5 ppm 2.5 ppm 6.0 ppm		Black–light gray, fine–medium SAND, slightly hard, slight naphthalene–like and H2S–like odor, wet
		38–40'	2.5 ppm 5.6 ppm 4.6 ppm 9.5 ppm		Black–gray, fine–medium SAND, slightly hard, slight naphthalene–like odor, wet
40		40–42'	1.5 ppm 2.5 ppm 4.0 ppm		Same as above, gray, well sorted
		42–44'	4.5 ppm 5.5 ppm 6.0 ppm 7.1 ppm		Same as above, slight sheen
		44–46'	4.4 ppm 5.5 ppm 3.5 ppm		Same as above
45		46–48'	2.5 ppm 7.5 ppm 2.5 ppm 3.0 ppm 3.5 ppm		Gray, fine–medium SAND, well sorted, slightly hard, slight sheen, slight naphthalene–like odor, wet
		48–50'	4.0 ppm 1.5 ppm 1.8 ppm 1.6 ppm		Same as above
50		50–52'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–medium SAND, well sorted, slightly hard, very slight naphthalene–like odor, wet
		52–54'	0.1 ppm 0.2 ppm 0.3 ppm		Same as above
		54–56'	0.7 ppm 0.4 ppm 0.4 ppm 0.7 ppm		Same as above, "baggy headspace" PID method – max PID = 2.0 ppm
55		56–58'	0.3 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, medium SAND w/magnitite flakes, well sorted, slightly hard, very slight naphthalene–like odor, wet
		58–60'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, no odor
60		60–62'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		62–64'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		64–66'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
65		66–68'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		68–70'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, medium SAND, well sorted, slightly hard, wet Base of boring – 70 ft.

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Site Id: RPTP-01

Location: Rockaway Park

Purpose: User Defined

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

Total Depth: 8.00'

Elevation: 8.70'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Backhoe excavation

Contractor: Action Environmental

Borehole Dia.: 0.00in

Remarks: Test pit dimensions (w x l x d) 11' x 24' x 8'. Photos 58-63.

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
			0.0 ppm	0.0		Black-brown, sand & TOPSOIL/FILL mix, w/some tar & brick
			0.0 ppm	0.0		Gray, fine-coarse SAND, moist, wet at 7.5-8'
5						
						Bottom of test pit - 8 ft.
10						
15						
20						
25						

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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		TOPSOIL/FILL, w/tar
			0.0 ppm	0.0		Orange-brown, fine-coarse sandy FILL, w/some brick & cobblestone, loose, dry
5						
						Ground water seeping into bottom of test pit at 7.5'
10						
15						
20						
25						

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Site Id: RPTP-03

Location: Rockaway Park

Purpose: Test Pit

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

Total Depth: 10.00'

Elevation: 9.07'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Backhoe excavation

Contractor: Action Environmental

Borehole Dia.: 0.00in

Remarks: Test pit dimensions (w x l x d) 6' x 17' x 10'. Photos 44-48. Fill unit softer than fill encountered in RPTP-05 and RPTP-06. Coal tar seeps at ground surface.

Depth (ft)	Recovery	Sample Interval	Discrete PID	Discrete HCN	Graphic Log	Material Description
			0.0 ppm	0.0		Black FILL, w/soft coal
			0.0 ppm	0.0		Gray-orange brown, fine-coarse SAND, w/trace gravel, moist, loose, wet at 8'
5						
10						Bottom of test pit - 10 ft.
15						
20						
25						

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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
						Orange-brown mottled w/gray, fine-medium SAND, loose, moist,
5						
						Ground water seepage at 8'
10						Bottom of test pit - 10 ft.
15						
20						
25						

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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 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
			25 ppm	0.0		TOPSOIL/FILL, w/solidified tar, slight odor
			0.0 ppm	0.0		Gray-orange brown, fine-coarse SAND, loose
5						
						Ground water seeping into test pit at 8', w/sheen and odor
10						Bottom of test pit - 10 ft.
15						
20						
25						

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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					

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Site Id: RPTP-07

Location: Rockaway Park

Purpose: Test Pit

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

Total Depth: 7.00'

Elevation: 6.12'

Datum: Mean Sea Level

Logged By: Tom Fox

Drilling Method: Backhoe excavation

Contractor: Action Environmental

Borehole Dia.: 0.00in

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.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
			20 ppm		White-yellow, coarse sands and black clinker & gravel FILL, heavy MGP-like odor, loose, dry-moist
			50 ppm		Black, coarse sands mixed w/ash and clinker FILL, heavy tar/MGP-like odor, loose at 6'
5			50 ppm		Bottom of test pit- 7 ft.
10					
15					
20					
25					

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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					

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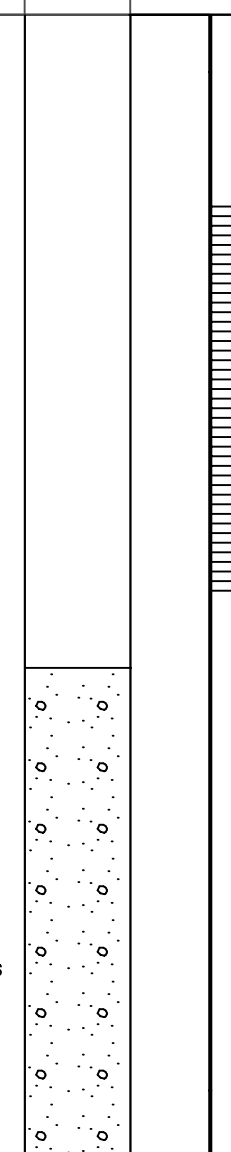
Site Id: RPMW-04I	
Date(s): 02/07/00 – 02/07/00	
Datum: Mean Sea Level	
Elevation: 2.87'	Measuring Point: 11.21'
Completed Depth: 47.00'	Total Depth: 48.00'
Location: Rockaway Park	Screens: type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00' type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'
Purpose: Monitoring Well, Intermediate	
Logged By: Jeff Diamond	
Drilling Method: 4.25" I.D. Hollow Stem Auger	
Borehole Dia.: 8.25in	Remarks: Geologic data derived from boring RPSB-07 See log for RPSB-07 for recovery/sample intervals
Contractor: LAWES	

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description
				FILL (upper 15' not sampled)
5				
10				
15			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
			0.0 ppm	Medium gray, med-coarse SAND, shell fragments
				Medium gray, med-coarse SAND, w/some mica, trace shells and lignite
			0.0 ppm	Medium dark gray, med-fine SAND, some mica
20				
			0.0 ppm	Med. gray, coarse-v.coarse SAND w/f.GRAVEL, shell fragments,some mica
				Same as above, medium-light gray, w/subrounded fine GRAVEL
			0.0 ppm	Same as above, medium-dark gray
25			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
			0.0 ppm	Med gray, coarse-v.coarse SAND w/rounded med GRAVEL, shell fragments
				Med-light gray, coarse-medium SAND
			0.0 ppm	Med gray, coarse-med SAND w/mica, rounded med GRAVEL, shell fragments

Graphic Log

Monitoring Well Screen Zones



Screen interval depths illustrated for wells RPMW-04S and RPMW-04I

Consulting Firm: Dvirka & Bartilucci	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 ppm	Med gray, coarse-med SAND w/some mica, fine GRAVEL, shell fragments		
			0.0 ppm	Med gray, medium-v. coarse SAND, w/rounded med GRAVEL, some mica, tr. shell fragments		
35			0.0 ppm	Med gray, med-coarse SAND w/some fine GRAVEL, shell fragments		
				Med-dark gray, med-fine, micaceous SAND		
			0.0 ppm	Same as above		
			0.0 ppm	Medium dark gray, medium-v.coarse. micaceous SAND		
40						
45						
				Base of well boring - 48 ft.		
50						
55						
60						
65						

Screen interval depths illustrated for wells RPMW-04S and RPMW-04I

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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	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'
Purpose: Monitoring Well, Intermediate	
Logged By: Jeff Diamond	
Drilling Method: 4.25" I.D. Hollow Stem Auger	
Borehole Dia.: 9.00in	Remarks: Geotech samples collected from: 2-4', 35-37', 40-42', and 43-45'.
Contractor: LAWES	

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description
		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
5		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		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
15		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		20-22'	0.1 ppm 3.3 ppm 6.3 ppm 5.9 ppm	Dark grey soft-medium stiff, micaceous CLAY, w/silt, slight odor, interbedded w/medium dark gray, medium SAND
		22-24'	9.5 ppm 18 ppm	Dark gray, micaceous, soft CLAY, w/some shells and oil sheen 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
25		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

Graphic Log

Monitoring Well Screen Zones

Screen interval depths illustrated for wells RPMW-05S and RPMW-05I

Consulting Firm: Dvirka & 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		
35		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		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		
45		44-46'	5.6 ppm 14.8 ppm 19.9 ppm 19.4 ppm	Same as above		
				Base of well boring - 48		
50						
55						
60						
65						

Screen interval depths illustrated for wells RPMW-05S and RPMW-05I

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Site Id: RPMW-06I	
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	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'
Purpose: Monitoring Well, Intermediate	
Logged By: J. Schafer	
Drilling Method: 4.25" I.D. Hollow Stem Auger	
Borehole Dia.: 8.25in	Remarks: Screen interval given for pre-existing shallow cluster member MW-A
Contractor: LAWES	

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description
		4–6'	0.0 ppm	Orange-brown, fine-medium SAND, loose, dry
5		6–8'	0.0 ppm	Same as above
		8–10'	0.0 ppm	Orange to tan to black, fine-medium SAND, medium dense
10		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
		14–16'	8.0 ppm 8.5 ppm	Black(top .75') changing to black-gray, fine SAND, medium dense, wet, slight hydrocarbon odor
15		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
20		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
		24–26'	150 ppm 162 ppm 34 ppm	Gray, fine SAND, medium-dense, wet, heavy naphtha odor, sheen
25		26–28'	81 ppm 21 ppm	Dark gray, fine SAND, dense, wet, naphtha odor, sheen
		28–30'	100 ppm 30 ppm	Same as above

Graphic Log

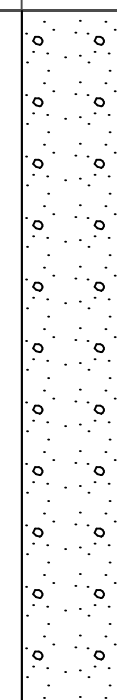
Monitoring Well Screen Zones

Screen intervals illustrated for pre-existing shallow well cluster member MW-A and RPMW-06I

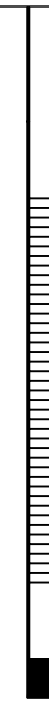
Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-06I
Location: Rockaway Park	Date(s): 02/09/00 - 02/09/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description
		30-32'	200 ppm 42 ppm	Dark gray, f. SAND, w/rounded gravel, naphtha odor, intermittant brown 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
35		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		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)
45				
				Base of Boring - 48'
50				
55				
60				
65				

Graphic Log



Monitoring Well Screen Zones



Screen intervals illustrated for pre-existing shallow well cluster member MW-A and RPMW-06I

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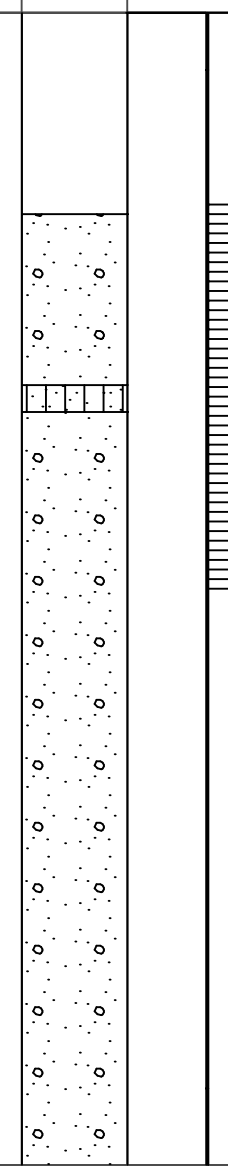
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RPMW-08I	
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'
Location: Rockaway Park	Screens:
Purpose: Monitoring Well, Intermediate	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'
Logged By: Jeff Diamond	
Drilling Method: 4.25" I.D. Hollow Stem Auger	
Borehole Dia.: 8.25in	Remarks: Geologic data derived from boring RPSB-21 See log RPSB-21 for recovery/sample intervals
Contractor: LAWES	

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

Graphic Log

Monitoring Well Screen Zones



Screen interval depths illustrated for wells RPMW-08S and RPMW-08I

Consulting Firm: Dvirka & 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 90.7 ppm 70.9 ppm	Medium-dark gray, coarse-med SAND, w/fine-med gravel, some mica and shells		
			446 ppm	Med gray, v.coarse-coarse SAND w/shell fragments, some fine-med gravel		
			290 ppm	Medium gray, med-coarse, micaceous SAND		
35			634 ppm 589 ppm	Medium-gray, med-v.coarse SAND, w/shell fragments, fine gravel		
			504 ppm	Medium gray, med-coarse, micaceous SAND, trace shell fragments		
			202 ppm 179 ppm	Same as above, no shell fragments		
40						
45						
				Base of boring at 48'		
50						
55						
60						
65						

Screen interval depths illustrated for wells RPMW-08S and RPMW-08I

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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'

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: Delta Well & Pump

Screens:

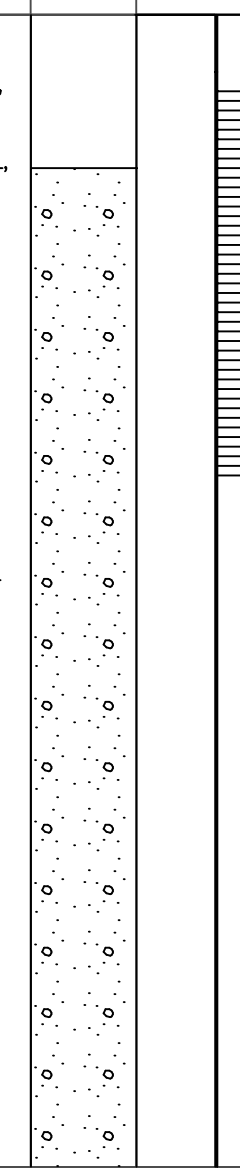
type: Other	size: 0.000in	dia: 2.00in	fm: 2.00'	to: 12.00'
type: Slotted	size: 0.020in	dia: 2.00in	fm: 35.00'	to: 45.00'
type: Slotted	size: 0.020in	dia: 2.00in	fm: 66.00'	to: 76.00'
type: Slotted	size: 0.020in	dia: 2.00in	fm: 95.00'	to: 105.00'

Remarks: Screen interval given for pre-existing shallow cluster member, PZ-08. Geologic data from boring RPSB-31A, see log for recovery/sample intervals

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description
			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
5				
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 25.0 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

Graphic Log

Monitoring Well Screen Zones



Screen interval depths illustrated for shallow cluster member PZ-08 and wells RPMW-09I, RPMW-09D and RPMW-09D2

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	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		
35			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		
40				No recovery (40-42')		
45			182 ppm	Med gray, med-fine SAND, w/some mica, shell fragments, staining, odor, zones of product-saturated sand		
50			65.7 ppm 68.0 ppm	Med gray, med-fine SAND, w/some mica, staining, odor		
55			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		
60			0.3 ppm 2.1 ppm	Med dark gray, coarse-med SAND w/some mica, trace shell frags, staining, odor & sheen		
65			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		

Screen interval depths illustrated for shallow cluster member PZ-08 and wells RPMW-09I, RPMW-09D and RPMW-09D2

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	PID	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		
75			53.7 ppm 69.1 ppm 38.2 ppm	Brown-black, fine-med, micaceous SAND, saturated w/product, odor, stain, sheen		
80			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		
85			57.1 ppm 67.7 ppm	Dark gray, med-fine SAND, micaceous, saturated w/product, staining, sheen		
90			25.6 ppm 33.3 ppm 19.8 ppm 13.2 ppm	Dark gray, medium-fine SAND, tar, naphtha odor, wet, loose		
95			54.2 ppm 64.9 ppm 36.3 ppm 8.0 ppm	Gray/black/blue, med SAND, tar waste saturated w/product, odor, wet, dense		
100			89.1 ppm 55.8 ppm 73.4 ppm 55.1 ppm	Gray, medium SAND, tar saturated w/product, strong naphtha odor, sheen, wet, dense		
105			44.3 ppm 77.9 ppm 78.3 ppm 75.4 ppm	Same as above, but loose See boring log RPSB-31A for description of materials in this boring below well installation depth.		

Screen interval depths illustrated for shallow cluster member PZ-08 and wells RPMW-09I, RPMW-09D and RPMW-09D2

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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:	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'
Purpose: Monitoring Well, Intermediate	
Logged By: J. Schafer	
Drilling Method: 4.25" I.D. Hollow Stem Auger	
Borehole Dia.: 8.25in	Remarks:
Contractor: LAWES	

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description
		4–6'	0.1 ppm 0.1 ppm	Gray, fine–medium SAND, w/orange banding, dry, loose
5		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		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
15		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		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
25		24–26'	1.7 ppm 0.3 ppm 3.2 ppm 0.3 ppm	Light black, fine SAND, w/trace of well rounded gravel and shells
		26–28'	0.2 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

Graphic Log

Monitoring Well Screen Zones

Screen interval depths illustrated for wells RPMW–10S and RPMW–10I

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	Grey, 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		
35		36-38'	0.0 ppm	Gray, fine-medium SAND, dense, wet		
		38-40'	0.0 ppm	Same as above		
40		40-42'	0.0 ppm	Same as above		
		42-44'	0.0 ppm	Same as above		
		44-46'	0.0 ppm	Same as above		
45						
				Base of Boring - 48'		
50						
55						
60						
65						

Screen interval depths illustrated for wells RPMW-10S and RPMW-10I

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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: Rockaway Park – offsite	Screens:
Purpose: Domestic Well	type: Slotted size: 0.010in dia: 2.00in fm: 5.00' to: 15.00'
Logged By: Jeff Diamond	type: Slotted size: 0.010in dia: 2.00in fm: 35.00' to: 45.00'
Drilling Method: 4.25" I.D. Hollow Stem Auger	type: Slotted size: 0.010in dia: 2.00in fm: 65.00' to: 75.00'
Borehole Dia.: 6.50in	Remarks: Geologic data derived from boring RPSB-02A See log RPSB-02A for recovery/sample details
Contractor: Delta Well & Pump	

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		

Screen zones illustrated for RPMW-11S, RPMW-11I and RPMW-11D

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-11D
Location: Rockaway 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
			3.5 ppm	Gray, medium SAND, w/shell fragments, tar staining, naphtha odor, moist, dense		
35			19.2 ppm	Gray, med-fine SAND, naphtha odor, moist, loose		
40			55.0 ppm	Same as above		
45			34.7 ppm	Same as above		
50			12.5 ppm	Same as above		
55			0.0 ppm	Gray, med-fine SAND, wet, w/shell fragments		
60						
65						

Screen zones illustrated for RPMW-11S, RPMW-11I and RPMW-11D

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-11D
Location: Rockaway 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
75						
				Base of well boring - 78'		
80						
85						
90						
95						
100						
105						

Screen zones illustrated for RPMW-11S, RPMW-11I and RPMW-11D

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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'

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: Delta Well & Pump

Screens:

type	size	dia	fm	to
Slotted	0.020in	2.00in	5.00'	15.00'
Slotted	0.020in	2.00in	35.00'	45.00'
Slotted	0.010in	2.00in	65.00'	75.00'
Slotted	0.010in	2.00in	95.00'	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').

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			
			35.2 ppm	Grayish-yellow, med-fine SAND w/coal tar fragments		
5			0.0 ppm	Gray-yellow/gray-brown, med-fine/med-coarse SAND, w/coal tar frags, slight odor		
			83.4 ppm			
			113 ppm	Yellowish-gray/dark gray, fine-med SAND, little silt, odor		
			0.0 ppm	Black, coarse-med SAND, odor, sheen & staining		
			132 ppm			
			215 ppm	Med dark gray, med-coarse SAND, staining & odor		
			2000+ ppm	Grayish-black, med-coarse SAND, trace med rounded GRAVEL, odor, staining		
			1038 ppm			
10			94.6 ppm	Med drk gray/med lt. gray, med-coarse, micaceous SAND, odor, staining		
			136 ppm	Med light gray, coarse-v.coarse SAND w/some mica, light staining, sheen & odor		
			1588 ppm	thin layer of heavy staining at bottom of spoon		
			2000+ ppm	Med gray/gray-blk, coarse-v.coarse SAND, heavy staining, odor, sheen, f.GRAVEL		
			1846 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			
			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		
			29.2 ppm			
20			38.1 ppm	Dark med gray, coarse-v.coarse SAND w/fine-coarse GRAVEL, shell fragments, odor,		
			2000+ ppm	heavy staining & sheen		
			1529 ppm	Same as above		
			2000+ ppm			
			900 ppm	Med gray, coarse-v.coarse, micaceous SAND, odor & sheen		
25			2000+ ppm	Gray-black, v.coarse-med SAND w/coarse GRAVEL, hvy stains, product, odor, sheen		
			245 ppm	Med light gray, coarse-med, micaceous SAND, odor & sheen		
			190 ppm	Same as above, w/shell fragments		
			259 ppm			
			15.7 ppm	Med lt. gray, coarse-v.coarse SAND w/shell frags, fine-coarse GRAVEL, slt. odor		
			133 ppm	Same as above, w/shells & sheen		
			16.4 ppm			
			24.8 ppm			

Screen intervals illustrated for wells RPMW-12S, RPMW-12I, RPMW-12D and RPMW-12D2

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'

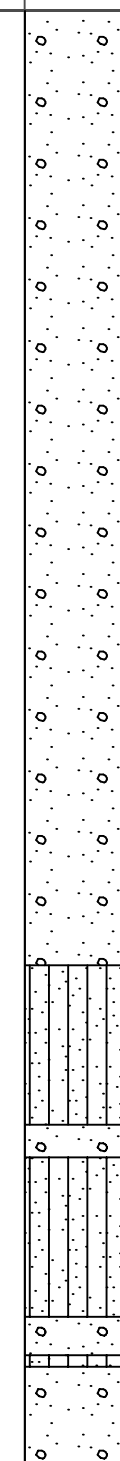
Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
			215 ppm 17.6 ppm	Med gray, coarse-med, micaceous SAND, slight odor Same as above, w/shell fragments & some fine-coarse GRAVEL		
			117 ppm 13.0 ppm 17.9 ppm	Same as above		
35			636 ppm 515 ppm	Same as above, w/sheen		
			89.3 ppm 0.0 ppm	Med gray, med-coarse, micaceous SAND		
			0.0 ppm	Same as above, some shell fragments		
40						
45			0.0 ppm	Same as above		
50						
55		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		
60		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		
65		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		
		69-71'	0.0 ppm	Olive gray, fine to medium, micaceous SAND		

Screen intervals illustrated for wells RPMW-12S, RPMW-12I, RPMW-12D and RPMW-12D2

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
75		74-76'	1.1 ppm 0.0 ppm 0.0 ppm	Olive gray, fine-medium, micaceous SAND
80		79-81'	0.0 ppm	Same as above Dark yellowish brown, medium to coarse, micaceous SAND
85		84-86'	3.4 ppm 0.3 ppm 0.4 ppm	Same as above
90		89-91'	1.0 ppm 0.3 ppm 0.2 ppm	Same as above
95		94-96'	5.0 ppm 0.7 ppm 0.4 ppm	Same as above Olive gray, fine, micaceous, silty SAND
100		99-101'	3.1 ppm 2.1 ppm 1.9 ppm	Dark yellowish brown, medium, micaceous SAND Olive gray, fine, micaceous, silty SAND
105		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'

Graphic Log



Monitoring Well Screen Zones

Screen intervals illustrated for wells RPMW-12S, RPMW-12I, RPMW-12D and RPMW-12D2

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Site Id: RPMW-13D2

Date(s): 03/09/00 - 03/09/00

Datum: Mean Sea Level

Elevation: 6.08' | Measuring Point: 13.75'

Completed Depth: 107.50' | Total Depth: 108.00'

Location: Rockaway

Purpose: Monitoring Well, Deep

Logged By: Jeff Diamond

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

Borehole Dia.: 6.50in

Contractor: Delta Well & Pump

Screens:

type	size	dia	fm	to
Slotted	0.020in	2.00in	5.00'	15.00'
Slotted	0.020in	2.00in	35.00'	45.00'
Slotted	0.020in	2.00in	65.00'	75.00'
Slotted	0.010in	2.00in	95.00'	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
			4.7 ppm	Dusky brown,med-v.coarse, sandy TOPSOIL, grass, roots
			4.7 ppm	
			3.2 ppm	Grayish-brown, med-v.coarse, sandy FILL, some SILT
			3.7 ppm	
			0.9 ppm	Grayish-brown, med-v.coarse, sandy FILL, w/chunks of coal tar
			0.0 ppm	Yellow-brn, coarse-v.coarse, sandy FILL, fine-coarse gravel to red-brown silty clay
5				Moderate reddish-brown, silty clayey FILL, w/v.coarse gravel, wet
			520 ppm	Black, med-fine, sandy FILL, w/some mica, odor, staining
			213 ppm	Grayish-brown, coarse-med, sandy FILL, staining, odor, slight sheen
			1587 ppm	Moderate brown, silty clayey FILL, w/black med-fine sand, brick fragments
			2000+ ppm	
			2000+ ppm	Grayish-black, coarse SAND, odor, sheen, saturated w/product
10				
15			2000+ ppm	Dark gray, med-coarse SAND, odor, sheen, light staining, coarse GRAVEL
			1770 ppm	
20			451 ppm	Dark gray, med-v.coarse SAND, odor
			296 ppm	
25			207 ppm	Dark gray, coarse-v.coarse SAND w/shell fragments, some mica, fine-coarse GRAVEL
			249 ppm	light staining, odor, sheen
			208 ppm	

Graphic Log

Monitoring Well Screen Zones

Screen interval depths illustrated for wells RPMW-13S, RPMW-13I, RPMW-13D and RPMW-13D2

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')		
35			387 ppm	Medium gray, medium-fine, micaceous SAND, trace coarse GRAVEL, odor, staining		
40			8.4 ppm 9.7 ppm	Medium gray, medium-fine SAND		
45			1.5 ppm 2.4 ppm	Medium gray-medium light gray, medium-coarse, micaceous SAND		
50			0.0 ppm 5.5 ppm	Same as above, medium gray		
55		54-56'	45.1 ppm 40.6 ppm	Dark gray, medium SAND, loose, odor, sheen, staining		
60		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		
65		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		

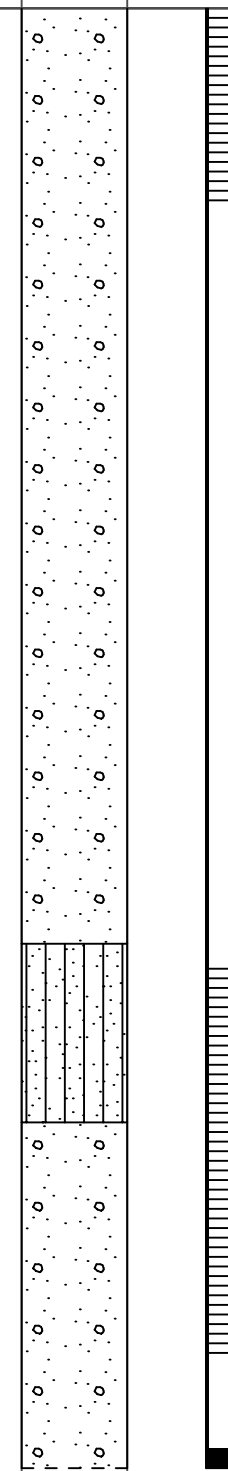
Screen interval depths illustrated for wells RPMW-13S, RPMW-13I, RPMW-13D and RPMW-13D2

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
			21.6 ppm	Med to med-dark gray, med-coarse, micaceous SAND, loose, sheen, odor
75		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
80		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
85		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
90		89-91'	355.5 ppm	Med and dk gray, med-fine micaceous SAND, product saturated, odor, sheen
95		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
100		99-101'	12.3 ppm 0.0 ppm 0.0 ppm	Pale and dark yellowish brown, medium-coarse SAND, w/some mica
105		104-106'	70.7 ppm 10.3 ppm 7.9 ppm	Dark yellowish brown, medium-coarse, micaceous SAND
				Base of Boring - 108'

Graphic Log

Monitoring Well Screen Zones



Screen interval depths illustrated for wells RPMW-13S, RPMW-13I, RPMW-13D and RPMW-13D2

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CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: RPMW-15I	
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'

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

Screens:

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

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description
			0.1 ppm	Dark yellow orange-pale yellow brown, moderate-coarse SAND, loose, dry (drill cuttings)
5		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	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
10		11-13'	749 ppm 865 ppm 186 ppm 194 ppm	Medium light gray, medium SAND, loose, w/some mica, odor
		13-15'	760 ppm 380.3 ppm 1999 ppm 121.3 ppm	Medium-medium dark gray, c.-med. SAND, w/some mica, and very coarse sand grading to coarse SAND, w/gravel, loose, odor
15		15-17'	196.5 ppm 223.9 ppm 378.4 ppm	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
20		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		25-27'	2.5 ppm 9.4 ppm 34.8 ppm 13.6 ppm	Medium dark gray, medium-coarse SAND, w/fine-coarse gravel and some shell fragments, loose
		27-29'	7.0 ppm 7.8 ppm 0.0 ppm	Medium light gray, medium SAND, w/some mica, loose
		29-31'	0.4 ppm 0.0 ppm	Medium gray, medium SAND, w/some mica, medium dense

Graphic Log

Monitoring Well Screen Zones

Screen interval depths illustrated for shallow cluster member PZ-03 and well RPMW-15I

Consulting Firm: Dvirka & Bartilucci	Site Id: RPMW-15I
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		35-37'	0.0 ppm	Same as above		
		37-39'	4.7 ppm 3.4 ppm 2.7 ppm 4.6 ppm	Same as above		
		39-41'	2.0 ppm 46.4 ppm 109.3 ppm	Same as above		
40		41-43'	25.8 ppm 2.4 ppm 1.8 ppm	Same as above, dark gray		
		43-45'	0.0 ppm	Same as above		
45						
				Base of Boring - 48'		
50						
55						
60						
65						

Screen interval depths illustrated for shallow cluster member PZ-03 and well RPMW-15I

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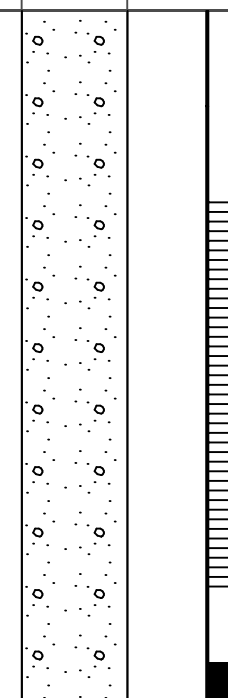
Site Id: RPMW-16I	
Date(s): 02/17/00 - 02/17/00	
Datum: Mean Sea Level	
Elevation: 2.80'	Measuring Point: 7.86'
Completed Depth: 47.00'	Total Depth: 48.00'
Location: Rockaway Park - offsite	Screens: type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00' type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'
Purpose: Monitoring Well, Intermediate	
Logged By: Jeff Diamond	
Drilling Method: 4.25" I.D. Hollow Stem Auger	
Borehole Dia.: 6.50in	Remarks: Geologic data from log for boring RPSB-58
Contractor: LAWES	

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
			0.0 ppm	Pale-moderate yellowish-brown, med-coarse SAND w/trace fine GRAVEL, loose, dry		
			0.0 ppm	Moderate brown, med-coarse SAND, dry, w/trace fine GRAVEL		
5				Yellowish-brown/Brownish gray to light gray, med-coarse SAND, trace black sand on top, wet		
10			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		
15			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		
20			0.0 ppm	Med light gray, med-coarse SAND, med dense, wet, w/coarse GRAVEL Same as above, w/fine GRAVEL, shell fragments		
25			0.0 ppm	Pale yellowish-brown, med-coarse SAND, med dense, wet, w/some mica, little shell fragments		

Screen depth intervals illustrated for wells RPMW-16S and RPMW-16I

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		
35			0.0 ppm	Same as above		
40			0.0 ppm	Same as above		
45				Base of well boring - 48 ft.		
50						
55						
60						
65						



Screen depth intervals illustrated for wells RPMW-16S and RPMW-16I

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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'
Location: Rockaway Park - offsite	Screens:
Purpose: Monitoring Well, Deep	type: Slotted size: 0.020in dia: 2.00in fm: 5.00' to: 15.00'
Logged By: J. Schafer	type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'
Drilling Method: 4.25" I.D. Hollow Stem Auger	type: Slotted size: 0.020in dia: 2.00in fm: 65.00' to: 75.00'
Borehole Dia.: 6.50in	Remarks: Geologic/sample data derived from log for boring RPSB-61
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		

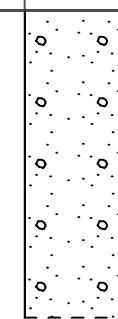
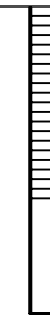
Screen interval depths illustrated for wells RPMW-17S, RPMW-17I and RPMW-17D

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		
35			48.2 ppm 50.1 ppm	Gray, fine SAND, dense, wet, no odor		
40			7.3 ppm 11.9 ppm	Same as above		
45			15.5 ppm 13.2 ppm	Gray, fine SAND, wet, med dense, w/shells		
50			17.5 ppm	Gray, fine-med SAND, wet, med dense		
55			8.7 ppm 9.1 ppm	Same as above		
60						
65						

Screen interval depths illustrated for wells RPMW-17S, RPMW-17I and RPMW-17D

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
75				Base of well boring - 78 ft.		
80						
85						
90						
95						
100						
105						

Screen interval depths illustrated for wells RPMW-17S, RPMW-17I and RPMW-17D

APPENDIX D

ANALYTICAL METHODS AND DETECTION LIMITS

Volatiles, 8021B (BTEX)

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
MTBE	1	1
Benzene	1	1
Toluene	1	1
Ethylbenzene	1	1
Xylene (total)	1	1

Note:
CRDL: Contract Required Detection Limit

Volatiles, 8260B

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
Chloromethane	5	5
Bromomethane	5	5
Vinyl Chloride	5	5
Chloroethane	5	5
Methylene Chloride	5	5
Acetone	5	5
Carbon Disulfide	5	5
1,1-Dichloroethene	5	5
1,1-Dichloroethane	5	5
1,2-Dichloroethene (total)	5	5
Chloroform	5	5
1,2-Dichloroethane	5	5
2-Butanone	5	5
1,1,1-Trichloroethane	5	5
Carbon Tetrachloride	5	5
Bromodichloromethane	5	5
1,2-Dichloropropane	5	5
cis-1,3-Dichloropropane	5	5
Trichloroethene	5	5
Dibromochloromethane	5	5
1,1,2-Trichloroethane	5	5
Benzene	5	5
trans-1,3-Dichloropropene	5	5
Bromoform	5	5
4-Methyl-2-Pentanone	5	5
2-Hexanone	5	5
Tetrachloroethene	5	5
1,1,2,2-Tetrachloroethane	5	5
Toluene	5	5
Chlorobenzene	5	5
Ethylbenzene	5	5
Styrene	5	5
Xylene (total)	5	5

Note:
NYSDEC ASP list, 5030B/8260B
CRDL: Contract Required Detection Limit

Volatiles, 8260B

ANALYTE	SOIL CRDL ug/kg	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
	5035A, NaHSO4, 5g/5mL	5035A. MeOH, 5g/5mL	
Dichlorodifluoromethane	5	250	5
Chloromethane	5	250	5
Vinyl chloride	5	250	5
Bromomethane	5	250	5
Chloroethane	5	250	5
Trichlorofluoromethane	5	250	5
1,1-Dichloroethene	5	250	5
Carbon disulfide	5	250	5
Iodomethane	5	250	5
Acetone	5	250	5
Methylene chloride	5	250	5
trans-1,2-Dichloroethene	5	250	5
1,1-Dichloroethane	5	250	5
Vinyl acetate	5	250	5
2,2-Dichloropropane	5	250	5
cis-1,2-Dichloroethene	5	250	5
Methyl ethyl ketone	5	250	5
Bromochloromethane	5	250	5
Chloroform	5	250	5
1,1,1-Trichloroethane	5	250	5
Carbon tetrachloride	5	250	5
1,1-Dichloropropene	5	250	5
Benzene	5	250	5
1,2-Dichloroethane	5	250	5
Trichloroethene	5	250	5
1,2-Dichloropropane	5	250	5
Dibromomethane	5	250	5
Bromodichloromethane	5	250	5
2-Chloroethyl vinyl ether	5	250	5
cis-1,3-Dichloropropene	5	250	5
4-Methyl-2-pentanone	5	250	5
Toluene	5	250	5
trans-1,3-Dichloropropene	5	250	5
1,1,2-Trichloroethane	5	250	5
Tetrachloroethene	5	250	5
1,3-Dichloropropane	5	250	5
2-Hexanone	5	250	5
Dibromochloromethane	5	250	5
1,2-Dibromoethane (EDB)	5	250	5
Chlorobenzene	5	250	5
1,1,1,2-Tetrachloroethane	5	250	5
Ethylbenzene	5	250	5
Xylenes, total	5	250	5
Styrene	5	250	5

Volatiles, 8260B (cont.)

Bromoform	5	250	5
Isopropylbenzene	5	250	5
Bromobenzene	5	250	5
1,1,2,2-Tetrachloroethane	5	250	5
1,2,3-Trichloropropane	5	250	5
n-Propylbenzene	5	250	5
2-Chlorotoluene	5	250	5
4-Chlorotoluene	5	250	5
1,3,5-Trimethylbenzene	5	250	5
tert-Butylbenzene	5	250	5
1,2,4-Trimethylbenzene	5	250	5
sec-Butylbenzene	5	250	5
1,3-Dichlorobenzene	5	250	5
4-Isopropyltoluene	5	250	5
1,4-Dichlorobenzene	5	250	5
1,2-Dichlorobenzene	5	250	5
n-Butylbenzene	5	250	5
1,2-Dibromo-3-chloropropane	5	250	5
1,2,4-Trichlorobenzene	5	250	5
Hexachlorobutadiene	5	250	5
1,2,3-Trichlorobenzene	5	250	5
MTBE	5	250	5
Naphthalene	5	250	5

Note:
CRDL: Contract Required Detection Limit

PAH's, 8270C

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
Naphthalene	330	10
2-Methylnaphthalene	330	10
Acenaphthylene	330	10
Acenaphthene	330	10
Dibenzofuran	330	10
Fluorene	330	10
Phenanthrene	330	10
Anthracene	330	10
Fluoranthene	330	10
Pyrene	330	10
Benzo (a) anthracene	330	10
Chrysene	330	10
Benzo (b) fluoranthene	330	10
Benzo (k) fluoranthene	330	10
Benzo (a) pyrene	330	10
Indeno (1,2,3-cd) pyrene	330	10
Dibenzo (a,h)anthracene	330	10
Benzo (g,h,i)perylene	330	10

Note:
CRDL: Contract Required Detection Limit

Semivolatiles, 8270C

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
Phenol	330	10
bis(-2-Chloroethyl) Ether	330	10
2-Chlorophenol	330	10
1,3-Dichlorobenzene	330	10
1,4-Dichlorobenzene	330	10
1,2-Dichlorobenzene	330	10
2,Methylphenol	330	10
2,2'-oxybis (1-Chloropropane)	330	10
4-Methylphenol	330	10
N-Nitroso-di-n-propylamine	330	10
Hexachloroethane	330	10
Nitrobenzene	330	10
Isophorone	330	10
2-Nitrophenol	330	10
2,4-Dimethyphenol	330	10
2,4-Dichlorophenol	330	10
1,2,4-Trichlorobenzene	330	10
Naphthalene	330	10
4-Chloroaniline	330	10
bis(2-Chloroethoxy)methane	330	10
Hexachlorobutadiene	330	10
4-Chloro-3-methylphenol	330	10
2-Methylnaphthalene	330	10
Hexachlorocyclopentadiene	330	10
2,4,6-Trichlorophenol	330	10
2,4,5-Trichlorophenol	670	20
2-Chloronaphthalene	330	10
2-Nitroaniline	670	20
Dimethylphthalate	330	10
Acenaphthylene	330	10
2,6-Dinitrotoluene	330	10
3-Nitroaniline	670	20
Acenaphthene	330	10
2,4-Dinitrophenol	670	20
4-Nitrophenol	670	20
Dibenzofuran	330	10
2,4-Dinitrotoluene	330	10
Diethylphthalate	330	10
4-Chlorophenyl-phenylether	330	10
Fluorene	330	10
4-Nitroaniline	670	20
4,6-Dinitro-2--methylphenol	670	20
N-Nitrosodiphenylamine (1)	330	10
4-Bromophenyl-phenylether	330	10

Semivolatiles, 8270C (cont.)

Hexachlorobenzene	330	10
Pentachlorophenol	670	20
Phenanthrene	330	10
Anthracene	330	10
Carbazole	330	10
Di-n-butylphthalate	330	10
Fluoranthene	330	10
Pyrene	330	10
Butylbenzylphthalate	330	10
3,3'-Dichlorobenzidine	330	10
Benzo(a)anthracene	330	10
Chrysene	330	10
bis(2-Ethylhexyl)phthalate	330	10
Benzo(b)fluoranthene	330	10
Benzo(k)fluoranthene	330	10
Benzo(a)pyrene	330	10
Indeno(1,2,3-cd)pyrene	330	10
Dibenzo(a,h)anthracene	330	10
Benzo(g,h,I)perylene	330	10

Note:
CRDL: Contract Required Detection Limit

Pesticides, 8081A

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
alpha-BHC	1.7	0.05
beta-BHC	1.7	0.05
delta-BHC	1.7	0.05
gamma-BHC (Lindane)	1.7	0.05
Heptachlor	1.7	0.05
Aldrin	1.7	0.05
Heptachlor epoxide	1.7	0.05
Endosulfan I	1.7	0.05
Dieldrin	3.3	0.10
4,4'-DDE	3.3	0.10
Endrin	3.3	0.10
Endosulfan II	3.3	0.10
4,4'-DDD	3.3	0.10
Endosulfan sulfate	3.3	0.10
4,4'-DDT	3.3	0.10
Methoxychlor	17	0.50
Endrin ketone	3.3	0.10
Endrin aldehyde	3.3	0.10
alpha-Chlordane	1.7	0.05
gamma-Chlordane	1.7	0.05
Toxaphene	170	5

Note:
CRDL: Contract Required Detection Limit

PCBs, 8082

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
Aroclor-1016	33	1
Aroclor-1221	33	1
Aroclor-1232	33	1
Aroclor-1242	33	1
Aroclor-1248	33	1
Aroclor-1254	33	1
Aroclor-1260	33	1

Note:
CRDL: Contract Required Detection Limit

Herbicides, 8151A

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
Dalapon	40	2.5
Dicamba	1.6	0.10
MCPP	16,000	1,000
MCPA	16,000	1,000
Dichloroprop	16	1.0
2,4-D	16	1.0
2,4,5-TP (Silvex)	1.6	0.10
2,4,5-T	1.6	0.10
2,4-DB	16	1.0
Dinoseb	8.0	0.5

Note:
CRDL: Contract Required Detection Limit

RCRA 8 Metals, 6010B, 7470A or 7471A

ANALYTE	SOIL CRDL mg/kg	AQUEOUS CRDL ug/L
Arsenic	2	20
Barium	20	200
Cadmium	0.5	5
Chromium	2	20
Lead	1	10
Mercury	0.1	0.3
Selenium	2	20
Silver	3	30

Note:
CRDL: Contract Required Detection Limit

Total Metals, 6010B, 7470A or 7471A

ANALYTE	SOIL CRDL mg/kg	AQUEOUS CRDL ug/L
Aluminum	30	300
Antimony	3	30
Arsenic	2	20
Barium	20	200
Beryllium	0.6	6
Cadmium	0.5	5
Calcium	80	800
Chromium	2	20
Cobalt	5	50
Copper	3	30
Iron	300	300
Lead	1	10
Magnesium	50	500
Manganese	5	50
Mercury	0.1	0.3
Nickel	5	50
Potassium	200	2000
Selenium	2	20
Silver	3	30
Sodium	10	100
Thallium	1	10
Vanadium	5	50
Zinc	5	50

Note:
CRDL: Contract Required Detection Limit

Total Cyanide, 9010B, 9012A

ANALYTE	SOIL CRDL mg/kg	AQUEOUS CRDL ug/L
Cyanide, total and free	1	20

Total Phenols, 9065

ANALYTE	SOIL CRDL mg/kg	AQUEOUS CRDL ug/L
Phenols	5	100

Hexavalent Chromium, 7196

ANALYTE	SOIL CRDL mg/kg	AQUEOUS CRDL ug/L
Hexavalent Chromium	1	10

Note:
CRDL: Contract Required Detection Limit

TCLP

Volatiles, 8260B

ANALYTE	AQUEOUS CRDL ug/L
Vinyl Chloride	5
1,1-Dichloroethene	5
Chloroform	5
1,2-Dichloroethane	5
Methyl ethyl ketone (2-Butanone)	5
Carbon Tetrachloride	5
Trichloroethene	5
Benzene	5
Tetrachloroethene	5
Chlorobenzene	5

Semivolatiles, 8270C

ANALYTE	AQUEOUS CRDL ug/L
Pyridine	33
1,4-Dichlorobenzene	33
Cresol, Total	33
Hexachloroethane	33
Nitrobenzene	33
Hexachlorobutadiene	33
2,4,6-Trichlorophenol	33
2,4,5-Trichlorophenol	33
2,4-Dinitrotoluene	33
Hexachlorobenzene	33
Pentachlorophenol	33

Metals, 6010B, 7470A

ANALYTE	AQUEOUS CRDL ug/L
Arsenic	20
Barium	200
Cadmium	5
Chromium	20
Lead	10
Mercury	2
Selenium	20
Silver	30

TCLP (cont.)

Pesticides, 8081A

ANALYTE	AQUEOUS CRDL ug/L
Lindane	0.17
Heptachlor	0.17
Heptachlor epoxide	0.17
Endrin	0.33
Methoxychlor	1.7
Chlordane	17
Toxaphene	17

Herbicides, 8151A

ANALYTE	AQUEOUS CRDL ug/L
2,4-D	3.3
2,4,5-TP (Silvex)	0.33

Note:
CRDL: Contract Required Detection Limit

APPENDIX E

ANALYTICAL RESULTS - DATA SUMMARY TABLES

ROCKAWAY PARK
FORMER MANUFACTURED GAS PLANT SITE
REMEDIAL INVESTIGATION
APPENDIX E – ANALYTICAL RESULTS

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SUMMARY TABLE
DATA QUALIFIERS

Organics:

Qualifier	Description
U:	Compound analyzed for but not detected.
J:	Compound found below CRDL; value estimated.
B:	Compound found in the method blank as well as the sample.
D:	Result taken from analysis at a secondary dilution.
E:	Concentration exceeds instrument calibration range; value estimated.
P:	Greater than 25% difference in concentrations between the primary and confirmation columns; lower value reported.

Inorganics

U:	Analyte analyzed for but not detected.
B:	Concentration found above IDL but less than the CRDL.

TABLE 1
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-04 RPSS-04 (0-6") 01/04/2000 0.00	RPSS-05 RPSS-05 (0-6") 01/04/2000 0.00	RPSS-06 RPSS-06 (0-6") 01/04/2000 0.00	RPSS-07 RPSS-07 (0-6") 01/04/2000 0.00	RPSS-08 RPSS-08 (0-6") 01/04/2000 0.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.003	0.001 U	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.00	0.003	0.001	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 1
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-09 RPSS-09 (0-6") 01/04/2000 0.00	RPSS-10 RPSS-10 (0-6") 01/04/2000 0.00	RPSS-11 RPSS-11 (0-6") 01/04/2000 0.00	RPSS-12 RPSS-12 (0-6") 01/04/2000 0.00	RPSS-13 RPSS-13 (0-6") 01/04/2000 0.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 1
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-14 RPSS-14 (0-6") 01/04/2000 0.00	RPSS-15 RPSS-15 (0-6") 01/04/2000 0.00	RPSS-16 RPSS-16 (0-6") 01/12/2000 0.00
Benzene	(mg/kg)	0.06	0.001 U	0.002	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.002
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.006
Total BTEX	(mg/kg)		0.00	0.002	0.008

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 2
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-04 RPSS-04 (0-6") 01/04/2000 0.00	RPSS-05 RPSS-05 (0-6") 01/04/2000 0.00	RPSS-06 RPSS-06 (0-6") 01/04/2000 0.00	RPSS-07 RPSS-07 (0-6") 01/04/2000 0.00	RPSS-08 RPSS-08 (0-6") 01/04/2000 0.00
Naphthalene	(mg/kg)	13	2.6 J	3.3 U	0.083 J	0.58 J	0.88 J
2-Methylnaphthalene	(mg/kg)	36.4	1.9 J	0.44 J	0.037 J	0.48 J	0.79 J
Acenaphthylene	(mg/kg)	41	4.7	3.3 U	0.097 J	1.9 J	5.7
Acenaphthene	(mg/kg)	50	3.5 U	3.3 U	0.35 U	3.7 U	3.5 U
Dibenzofuran	(mg/kg)	6.2	3.5 U	3.3 U	0.35 U	3.7 U	3.5 U
Fluorene	(mg/kg)	50	0.74 J	3.3 U	0.35 U	3.7 U	0.66 J
Phenanthrene	(mg/kg)	50	5.1	0.83 J	0.26 J	1.1 J	3.7
Anthracene	(mg/kg)	50	2.6 J	3.3 U	0.093 J	0.94 J	2.6 J
Fluoranthene	(mg/kg)	50	8	1 J	0.52	2.2 J	8.6
Pyrene	(mg/kg)	50	16	0.86 J	0.6	4.7	14
Benz(a)anthracene	(mg/kg)	0.224	[7.6]	[0.34] J	[0.31] J	[2.4] J	[7.5]
Chrysene	(mg/kg)	0.4	[8.3]	[0.66] J	0.35 J	[2.4] J	[7.6]
Benzo(b)fluoranthene	(mg/kg)	1.1	[6.7]	0.46 J	0.26 J	[2] J	[10]
Benzo(k)fluoranthene	(mg/kg)	1.1	[2.4] J	0.66 J	0.24 J	[1.2] J	[3.4] J
Benzo(a)pyrene	(mg/kg)	0.061	[5.7]	[0.38] J	[0.24] J	[1.7] J	[7.8]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[4.3]	0.29 J	0.19 J	1.5 J	[5.9]
Dibenz(a,h)anthracene	(mg/kg)	0.014	[1.4] J	3.3 U	[0.054] J	[0.49] J	[1.6] J
Benzo(g,h,i)perylene	(mg/kg)	50	5.7	3.3 U	0.22 J	1.9 J	8
Total CAPAHs	(mg/kg)	10	[36.40]	2.79	1.644	[11.69]	[43.80]
Total PAHs	(mg/kg)	500	83.74	5.92	3.554	25.49	88.73

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 2
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-09 RPSS-09 (0-6") 01/04/2000 0.00	RPSS-10 RPSS-10 (0-6") 01/04/2000 0.00	RPSS-11 RPSS-11 (0-6") 01/04/2000 0.00	RPSS-12 RPSS-12 (0-6") 01/04/2000 0.00	RPSS-13 RPSS-13 (0-6") 01/04/2000 0.00
Naphthalene	(mg/kg)	13	1.3 J	3.9	0.55 J	0.13 J	0.1 J
2-Methylnaphthalene	(mg/kg)	36.4	0.54 J	3.7 J	3.6 U	0.1 J	0.1 J
Acenaphthylene	(mg/kg)	41	1.9 J	13	1.7 J	0.8	0.74
Acenaphthene	(mg/kg)	50	3.6 U	3.8 U	3.6 U	0.16 J	0.36 U
Dibenzofuran	(mg/kg)	6.2	3.6 U	0.39 J	3.6 U	0.061 J	0.36 U
Fluorene	(mg/kg)	50	0.95 J	1.3 J	3.6 U	0.16 J	0.14 J
Phenanthrene	(mg/kg)	50	12	10	2.3 J	1.7	1.2
Anthracene	(mg/kg)	50	2 J	6.6	0.92 J	0.62	0.46
Fluoranthene	(mg/kg)	50	8.4	17	3.5 J	3.8	2.1
Pyrene	(mg/kg)	50	13	31	5.8	4	2.9
Benz(a)anthracene	(mg/kg)	0.224	[5.6]	[15]	[2.7] J	[2.4]	[1.6]
Chrysene	(mg/kg)	0.4	[7.4]	[20]	[3.3] J	[2.3]	[1.5]
Benzo(b)fluoranthene	(mg/kg)	1.1	[7.8]	[19]	[2.5] J	[3.2]	[1.4]
Benzo(k)fluoranthene	(mg/kg)	1.1	[2.4] J	[10]	1 J	1	0.61
Benzo(a)pyrene	(mg/kg)	0.061	[5.2]	[8.4]	[2] J	[2.4]	[1.2]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[4]	[11]	1.4 J	1.8	0.87
Dibenz(a,h)anthracene	(mg/kg)	0.014	[1.6] J	[3.3] J	[0.45] J	0.36 U	[0.24] J
Benzo(g,h,i)perylene	(mg/kg)	50	6.3	12	1.7 J	1.9	0.99
Total CAPAHs	(mg/kg)	10	[34.00]	[86.70]	[13.35]	[13.10]	7.42
Total PAHs	(mg/kg)	500	80.39	185.59	29.82	26.531	16.15

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 2
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-14 RPSS-14 (0-6") 01/04/2000 0.00	RPSS-15 RPSS-15 (0-6") 01/04/2000 0.00	RPSS-16 RPSS-16 (0-6") 01/12/2000 0.00
Naphthalene	(mg/kg)	13	0.74 J	3.6 U	0.41 J
2-Methylnaphthalene	(mg/kg)	36.4	3.5 U	3.6 U	0.37 J
Acenaphthylene	(mg/kg)	41	1.5 J	0.62 J	6.6
Acenaphthene	(mg/kg)	50	3.5 U	3.6 U	1.7 U
Dibenzofuran	(mg/kg)	6.2	3.5 U	3.6 U	1.7 U
Fluorene	(mg/kg)	50	3.5 U	3.6 U	0.5 J
Phenanthrene	(mg/kg)	50	1.4 J	0.96 J	3.7
Anthracene	(mg/kg)	50	0.78 J	0.48 J	2.6
Fluoranthene	(mg/kg)	50	2.5 J	3.3 J	10
Pyrene	(mg/kg)	50	3.9	3.6 J	21
Benz(a)anthracene	(mg/kg)	0.224	[1.9] J	[2.2] J	[8.3]
Chrysene	(mg/kg)	0.4	[1.7] J	[1.8] J	[9.4]
Benzo(b)fluoranthene	(mg/kg)	1.1	[2] J	[2.4] J	[9.3]
Benzo(k)fluoranthene	(mg/kg)	1.1	0.88 J	[1.2] J	[4.1]
Benzo(a)pyrene	(mg/kg)	0.061	[1.6] J	[2] J	[6.4]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	1.4 J	1.5 J	[5]
Dibenz(a,h)anthracene	(mg/kg)	0.014	3.5 U	3.6 U	[1.3] J
Benzo(g,h,i)perylene	(mg/kg)	50	1.6 J	1.7 J	5.8
Total CAPAHs	(mg/kg)	10	9.48	[11.10]	[43.80]
Total PAHs	(mg/kg)	500	21.90	21.76	94.78

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 3
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-04 RPSS-04 (0-6") 01/04/2000 0.00	RPSS-05 RPSS-05 (0-6") 01/04/2000 0.00	RPSS-06 RPSS-06 (0-6") 01/04/2000 0.00	RPSS-07 RPSS-07 (0-6") 01/04/2000 0.00	RPSS-08 RPSS-08 (0-6") 01/04/2000 0.00
Lead	(mg/kg)	500	136	13.9	57.6	69	118
Mercury	(mg/kg)	0.10	0.072	0.021 B	[0.16]	0.079	[0.12]
Silver	(mg/kg)		2.3 B	2.2 B	2.1 B	1.2 B	3.5
Arsenic	(mg/kg)	7.5	5.7	1.5 B	2.9	2.2	7.1
Barium	(mg/kg)	300	29.7	42.2	38.2	23.5	87.5
Cadmium	(mg/kg)	10	1.4	0.9	5.8	0.59	1.7
Chromium	(mg/kg)	50	6.4	7.3	10.6	4.7	9.7
Selenium	(mg/kg)	2	0.42 U	0.41 U	0.38 U	0.36 U	0.78 B
Cyanide	(mg/kg)		5.5	0.13 B	0.3 B	1.4	2.5

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 3
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-09 RPSS-09 (0-6") 01/04/2000 0.00	RPSS-10 RPSS-10 (0-6") 01/04/2000 0.00	RPSS-11 RPSS-11 (0-6") 01/04/2000 0.00	RPSS-12 RPSS-12 (0-6") 01/04/2000 0.00	RPSS-13 RPSS-13 (0-6") 01/04/2000 0.00
Lead	(mg/kg)	500	105	270	135	91.2	189
Mercury	(mg/kg)	0.10	[0.78]	[0.39]	[0.15]	[0.16]	[0.25]
Silver	(mg/kg)		2.3 B	6.6	1.2 B	1.3 B	1.4 B
Arsenic	(mg/kg)	7.5	[12.7]	[12.2]	2.8	2.7	2.6
Barium	(mg/kg)	300	47.8	68.7	44.3	38.7	87
Cadmium	(mg/kg)	10	1.3	2.8	0.67	0.71	0.86
Chromium	(mg/kg)	50	7.5	25.7	5.7	6.4	7.1
Selenium	(mg/kg)	2	0.54 B	1.5 B	0.45 U	0.34 U	0.63 B
Cyanide	(mg/kg)		0.52 B	9.4	0.97 B	0.41 B	1.2

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 3
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-14 RPSS-14 (0-6") 01/04/2000 0.00	RPSS-15 RPSS-15 (0-6") 01/04/2000 0.00	RPSS-16 RPSS-16 (0-6") 01/12/2000 0.00
Lead	(mg/kg)	500	90.1	59.3	[706] *
Mercury	(mg/kg)	0.10	0.092	[0.11]	[0.56]
Silver	(mg/kg)		1 B	1.6 B	1.7 B
Arsenic	(mg/kg)	7.5	2.2	2	[10]
Barium	(mg/kg)	300	24.3	24.7	59.5 *
Cadmium	(mg/kg)	10	0.53	0.79	2.8
Chromium	(mg/kg)	50	14.5	7	27.8
Selenium	(mg/kg)	2	0.4 U	0.42 U	[7.5]
Cyanide	(mg/kg)		2.4	0.26 B	7

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 4
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSS-04 RPSS-04 (0-6") 01/04/2000 0.00	RPSS-05 RPSS-05 (0-6") 01/04/2000 0.00	RPSS-06 RPSS-06 (0-6") 01/04/2000 0.00	RPSS-07 RPSS-07 (0-6") 01/04/2000 0.00	RPSS-08 RPSS-08 (0-6") 01/04/2000 0.00	RPSS-09 RPSS-09 (0-6") 01/04/2000 0.00
Total Phenols	(mg/kg)	11U	11U	11U	11U	11U	11U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 4
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSS-10 RPSS-10 (0-6") 01/04/2000 0.00	RPSS-11 RPSS-11 (0-6") 01/04/2000 0.00	RPSS-12 RPSS-12 (0-6") 01/04/2000 0.00	RPSS-13 RPSS-13 (0-6") 01/04/2000 0.00	RPSS-14 RPSS-14 (0-6") 01/04/2000 0.00	RPSS-15 RPSS-15 (0-6") 01/04/2000 0.00
Total Phenols	(mg/kg)	11U	11U	11U	11U	11U	11U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 4
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 01/04/2000 thru 01/12/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	RPSS-16
	SAMPLE ID	RPSS-16 (0-6")
	DATE	01/12/2000
	DEPTH (ft)	0.00
Total Phenols	(mg/kg)	12U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-07 RPSB-07(15-17) 12/13/1999 15.00	RPSB-07 RPSB-07(27-29) 12/13/1999 27.00	RPSB-07 RPSB-07(39-41) 12/13/1999 39.00	RPSB-08 RPSB-08(15-17) 12/13/1999 15.00	RPSB-08 RPSB-08(30-32) 12/14/1999 30.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 J	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.002	0.001 U	0.004	0.001 U	0.002
Xylene (total)	(mg/kg)	1.2	0.006	0.003	0.001 U	0.002	0.005
Total BTEX	(mg/kg)		0.009	0.003	0.004	0.002	0.007

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-08 RPSB-08(40-42) 12/14/1999 40.00	RPSB-09 RPSB-09 (2-4) 01/07/2000 2.00	RPSB-09 RPSB-09 (20-22) 01/07/2000 20.00	RPSB-09 RPSB-09 (40-42) 01/07/2000 40.00	RPSB-10 RPSB-10 (4-6) 12/28/1999 4.00
Benzene	(mg/kg)	0.06	0.001 U	[4.8]	0.001 U	0.001 U	0.004
Ethylbenzene	(mg/kg)	5.5	0.007	[9.4]	0.002	0.001 U	0.007
Toluene	(mg/kg)	1.5	0.002	[40]	0.007	0.001 U	0.02
Xylene (total)	(mg/kg)	1.2	0.009	[160]	0.019	0.001 U	0.052
Total BTEX	(mg/kg)		0.018	214.20	0.028	0.00	0.083

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-10 RPSB-10 (18-20) 12/28/1999 18.00	RPSB-10 RPSB-10 (50-52) 12/28/1999 50.00	RPSB-10 RPSB-10 (65-67) 12/29/1999 65.00	RPSB-11 RPSB-11 (15-17) 12/17/1999 15.00	RPSB-11 RPSB-11 (40-42) 12/17/1999 40.00
Benzene	(mg/kg)	0.06	0.001 U	0.031	0.002	[5.7]	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.013	0.001 U	[66]	0.042
Toluene	(mg/kg)	1.5	0.001 U	0.002	0.001 U	1.2 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.019	0.004	[36]	0.022
Total BTEX	(mg/kg)		0.00	0.065	0.006	107.70	0.064

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-11 RPSB-11 (45-47) 12/17/1999 45.00	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-12 RPSB-12 (14-16) 12/27/1999 14.00	RPSB-12 RPSB-12 (50-52) 12/27/1999 50.00	RPSB-13 RPSB-13 (4-6) 01/13/2000 4.00
Benzene	(mg/kg)	0.06	0.001 U	0.056	[490]	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.045	0.002 J	[890]	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.045	[94]	0.001 U	0.001 J
Xylene (total)	(mg/kg)	1.2	0.024	0.015	[1000]	0.001 U	0.002
Total BTEX	(mg/kg)		0.069	0.118	2474.00	0.00	0.003

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-13 RPSB-13 (30-32) 01/13/2000 30.00	RPSB-13 RPSB-13 (38-40) 01/14/2000 38.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-14 RPSB-14 (6-8) 12/13/1999 6.00	RPSB-14 RPSB-14 (30-32) 12/13/1999 30.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.002	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.002	0.001 U	0.014	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.002	0.001 U	0.016	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.004	0.001 U	0.065	0.004	0.002
Total BTEX	(mg/kg)		0.008	0.00	0.097	0.004	0.002

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-14 RPSB-14 (40-42) 12/13/1999 40.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-15 RPSB-15 (7-9) 12/15/1999 7.00	RPSB-15 RPSB-15 (25-27) 12/15/1999 25.00	RPSB-15 RPSB-15 (40-42) 12/15/1999 40.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.002	0.003	0.004	0.002	0.001 J
Toluene	(mg/kg)	1.5	0.003	0.001 U	0.003	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.007	0.008	0.016	0.002	0.001 J
Total BTEX	(mg/kg)		0.012	0.011	0.023	0.004	0.002

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-16 RPSB-16 (4-6) 12/03/1999 4.00	RPSB-16 RPSB-16 (6-8) 12/03/1999 6.00	RPSB-16 RPSB-16 (30-32) 12/07/1999 30.00	RPSB-16 RPSB-16 (50-52) 12/07/1999 50.00	RPSB-17 RPSB-17 (5-7) 12/07/1999 5.00
Benzene	(mg/kg)	0.06	[0.76]	0.32 U	0.001 U	0.001 U	0.006 U
Ethylbenzene	(mg/kg)	5.5	[6.7]	4.3	0.017	0.001 U	0.074
Toluene	(mg/kg)	1.5	[1.8]	1.4	0.001 U	0.001 U	0.006 U
Xylene (total)	(mg/kg)	1.2	[16]	[22]	0.016	0.001 U	0.006 U
Total BTEX	(mg/kg)		25.26	27.70	0.033	0.00	0.074

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-17 RPSB-17 (35-37) 12/07/1999 35.00	RPSB-17 RPSB-17 (50-52) 12/08/1999 50.00	RPSB-18 RPSB-18 (4-6) 12/08/1999 4.00	RPSB-18 RPSB-18 (10-12) 12/08/1999 10.00	RPSB-18 RPSB-18 (80-82) 12/09/1999 80.00
Benzene	(mg/kg)	0.06	0.003	0.001 U	6.4 U	[1]	0.005
Ethylbenzene	(mg/kg)	5.5	0.014	0.002	[95]	[16]	0.004
Toluene	(mg/kg)	1.5	0.001 U	0.002	6.4 U	0.6 U	0.002
Xylene (total)	(mg/kg)	1.2	0.021	0.009	[83]	[14]	0.012
Total BTEX	(mg/kg)		0.038	0.013	178.00	31.00	0.023

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-18 RPSB-18 (85-87) 12/09/1999 85.00	RPSB-19 RPSB-19 (4-6) 12/30/1999 4.00	RPSB-19 RPSB-19 (30-32) 01/03/2000 30.00	RPSB-19 RPSB-19 (45-47) 01/03/2000 45.00	RPSB-20 RPSB-20 (2-4) 12/20/1999 2.00
Benzene	(mg/kg)	0.06	0.025	[39]	0.004	0.001 U	[3]
Ethylbenzene	(mg/kg)	5.5	0.019	[180]	0.012	0.001	[6.2]
Toluene	(mg/kg)	1.5	0.002	3.2 U	0.01	0.001 U	[31]
Xylene (total)	(mg/kg)	1.2	0.013	[200]	0.023	0.002	[96]
Total BTEX	(mg/kg)		0.059	419.00	0.049	0.003	136.20

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-20 RPSB-20 (25-27) 12/20/1999 25.00	RPSB-20 RPSB-20 (40-42) 12/20/1999 40.00	RPSB-21 RPSB-21 (7-9) 12/15/1999 7.00	RPSB-21 RPSB-21 (23-25) 12/15/1999 23.00	RPSB-21 RPSB-21 (39-41) 12/15/1999 39.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.003	0.001 U	0.001 U	0.001 J
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.003	0.005	0.001 U	0.005
Total BTEX	(mg/kg)		0.00	0.006	0.005	0.00	0.006

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-22 RPSB-22 (4-6) 12/01/1999 4.00	RPSB-22 RPSB-22 (8-10) 12/01/1999 8.00	RPSB-22 RPSB-22 (60-62) 12/02/1999 60.00	RPSB-22 RPSB-22 (80-82) 12/02/1999 80.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00
Benzene	(mg/kg)	0.06	[39]	[4.9]	[9]	0.016	[3.2] J
Ethylbenzene	(mg/kg)	5.5	[100] D	[14]	[18]	0.005	[94]
Toluene	(mg/kg)	1.5	[1.9]	1.2 U	[11]	0.016	[4.9] J
Xylene (total)	(mg/kg)	1.2	[320] D	[29]	[49]	0.032	[220]
Total BTEX	(mg/kg)		460.90	47.90	87.00	0.069	322.10

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-23 RPSB-23 (12-14) 01/04/2000 12.00	RPSB-23 RPSB-23 (36-38) 01/06/2000 36.00	RPSB-23 RPSB-23 (48-50) 01/06/2000 48.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00	RPSB-24 RPSB-24 (5-7) 01/10/2000 5.00
Benzene	(mg/kg)	0.06	[16]	0.003	0.001 U	0.014	3 U
Ethylbenzene	(mg/kg)	5.5	[150]	0.007	0.008	0.12	[120]
Toluene	(mg/kg)	1.5	[21]	0.001 J	0.001 U	0.007	3 U
Xylene (total)	(mg/kg)	1.2	[240]	0.01	0.017	[1.7] D	[160]
Total BTEX	(mg/kg)		427.00	0.021	0.025	1.841	280.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-24 RPSB-24 (30-32) 01/11/2000 30.00	RPSB-24 RPSB-24 (50-52) 01/11/2000 50.00	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-25 RPSB-25 (6-8) 12/21/1999 6.00	RPSB-25 RPSB-25 (40-42) 12/21/1999 40.00
Benzene	(mg/kg)	0.06	0.004	0.001 J	[1.4]	0.3 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.069	0.003	[37] D	[21]	0.001 U
Toluene	(mg/kg)	1.5	0.002	0.001 U	1	0.3 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.033	0.005	[15] D	[9.1]	0.002
Total BTEX	(mg/kg)		0.108	0.009	54.40	30.10	0.002

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-25 RPSB-25 (50-52) 12/21/1999 50.00	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-26 RPSB-26 (13-15) 01/19/2000 13.00	RPSB-26 RPSB-26 (38-40) 01/19/2000 38.00	RPSB-27 RPSB-27 (2-4) 12/16/1999 2.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 J	[2.3]	0.002	[0.99] J
Ethylbenzene	(mg/kg)	5.5	0.003	0.005 U	0.48	0.002	[39] DJ
Toluene	(mg/kg)	1.5	0.001 U	0.001 J	[2.7]	0.002	[15]
Xylene (total)	(mg/kg)	1.2	0.002	0.005 U	1	0.005	[130]
Total BTEX	(mg/kg)		0.005	0.002	6.48	0.011	184.99

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-27 RPSB27(10-12) 12/16/1999 10.00	RPSB-27 RPSB-27 (40-42) 12/17/1999 40.00	RPSB-28 RPSB-28 (2-4) 12/29/1999 2.00	RPSB-28 RPSB-28 (4-6) 12/29/1999 4.00	RPSB-28 RPSB-28 (38-40) 12/30/1999 38.00
Benzene	(mg/kg)	0.06	[7]	0.001 U	[1.1]	[12]	0.002
Ethylbenzene	(mg/kg)	5.5	[63]	0.001 U	[13]	[32]	0.001 U
Toluene	(mg/kg)	1.5	[31]	0.001 U	0.32	1.2 U	0.001 U
Xylene (total)	(mg/kg)	1.2	[130]	0.001 U	[25]	[56]	0.003
Total BTEX	(mg/kg)		231.00	0.00	39.42	100.00	0.005

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-28 RPSB-28 (48-50) 12/30/1999 48.00	RPSB-29 RBSB-29 (5-7) 12/10/1999 5.00	RPSB-29 RPSB-29 (55-57) 02/02/2000 55.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-29 RPSB-29 (35-37) 02/03/2000 35.00
Benzene	(mg/kg)	0.06	0.012	0.3 U	0.28 U	[1] J	0.003
Ethylbenzene	(mg/kg)	5.5	0.002	[24]	4.7	[28]	0.014
Toluene	(mg/kg)	1.5	0.001 U	0.3 U	0.44	3 U	0.004
Xylene (total)	(mg/kg)	1.2	0.001 U	[42]	[15]	[53]	0.032
Total BTEX	(mg/kg)		0.014	66.00	20.14	82.00	0.053

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-29 RPSB-29(134-136 02/25/2000 134.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00	RPSB-30 RPSB-30 (19-21) 02/01/2000 19.00	RPSB-30 RPSB-30 (60-62) 02/02/2000 60.00	RPSB-31A RPSB-31A (2-4) 01/04/2000 2.00
Benzene	(mg/kg)	0.06	0.003	[0.74] J	0.002 J	0.002	[0.18]
Ethylbenzene	(mg/kg)	5.5	0.002	[15]	0.011	0.001 U	0.39
Toluene	(mg/kg)	1.5	0.001	3 U	0.001 J	0.001 U	0.029
Xylene (total)	(mg/kg)	1.2	0.014	[16]	0.004	0.001 U	0.12
Total BTEX	(mg/kg)		0.02	31.74	0.018	0.002	0.719

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-31A RPSB-31A (4-6) 01/04/2000 4.00	RPSB-31A RPSB-31A(35-37) 01/04/2000 35.00	RPSB-31A SB-31A(133-135) 03/10/2000 133.00	RPSB-31B RPSB-31B (4-6) 01/11/2000 4.00	RPSB-31B RPSB-31B (6-8) 01/11/2000 6.00
Benzene	(mg/kg)	0.06	[9.2]	0.006 U	0.003	0.001 J	1.2 U
Ethylbenzene	(mg/kg)	5.5	[130]	0.03	0.002	0.002	[14]
Toluene	(mg/kg)	1.5	[4.6]	0.006 U	0.001 U	0.001 U	1.2 U
Xylene (total)	(mg/kg)	1.2	[140]	0.05	0.014	0.009	[17]
Total BTEX	(mg/kg)		283.80	0.08	0.019	0.012	31.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-31B RPSB-31B(22-24) 01/12/2000 22.00	RPSB-31B RPSB-31B(48-50) 01/13/2000 48.00	RPSB-32 RPSB-32 (2-4) 12/21/1999 2.00	RPSB-32 RPSB-32 (25-27) 12/21/1999 25.00	RPSB-32 RPSB-32 (40-42) 12/21/1999 40.00
Benzene	(mg/kg)	0.06	0.001 U	0.002	0.002	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.003	0.004	0.003	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.002	0.006	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.004	0.006	0.011	0.005	0.001 U
Total BTEX	(mg/kg)		0.004	0.013	0.023	0.008	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00	RPSB-33 RPSB-33 (15-17) 12/22/1999 15.00	RPSB-33 RPSB-33 (45-47) 12/22/1999 45.00	RPSB-34 RPSB-34 (8-10) 12/29/1999 8.00	RPSB-34 RPSB-34 (40-42) 12/29/1999 40.00
Benzene	(mg/kg)	0.06	0.022	0.061 U	0.001 U	0.005	0.015
Ethylbenzene	(mg/kg)	5.5	0.007	0.54	0.001 U	0.07	0.08
Toluene	(mg/kg)	1.5	0.065	0.58	0.004	0.001 U	0.001
Xylene (total)	(mg/kg)	1.2	0.038	[1.6]	0.004	0.052	0.1
Total BTEX	(mg/kg)		0.132	2.72	0.008	0.127	0.196

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-34 RPSB-34 (80-82) 12/30/1999 80.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-35 RPSB-35 (10-12) 01/03/2000 10.00	RPSB-35 RPSB-35 (60-62) 01/03/2000 60.00	RPSB-35 RPSB-35 (80-82) 01/04/2000 80.00
Benzene	(mg/kg)	0.06	0.001	0.016	[41]	0.006	0.022
Ethylbenzene	(mg/kg)	5.5	0.001	0.005 J	[120]	0.2	0.006
Toluene	(mg/kg)	1.5	0.001 U	0.013	[33]	0.11	0.013
Xylene (total)	(mg/kg)	1.2	0.001 U	0.007	[260]	0.3	0.11
Total BTEX	(mg/kg)		0.002	0.041	454.00	0.616	0.151

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-36 RPSB-36 (5-7) 01/03/2000 5.00	RPSB-36 RPSB-36 (7-9) 01/03/2000 7.00	RPSB-36 RPSB-36 (35-37) 01/03/2000 35.00	RPSB-36 RPSB-36 (55-57) 01/04/2000 55.00	RPSB-37 RPSB-37 (10-12) 01/12/2000 10.00
Benzene	(mg/kg)	0.06	[8.7]	[12]	0.001 U	0.001	[0.33]
Ethylbenzene	(mg/kg)	5.5	[41]	[53]	0.003	0.002	3
Toluene	(mg/kg)	1.5	0.56 U	0.57 U	0.001 U	0.001 U	0.12 U
Xylene (total)	(mg/kg)	1.2	[9.3]	[10]	0.002	0.001 U	[2.5]
Total BTEX	(mg/kg)		59.00	75.00	0.005	0.003	5.83

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-37 RPSB-37 (35-37) 01/12/2000 35.00	RPSB-37 RPSB-37 (50-52) 01/12/2000 50.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-38 RPSB-38 (10-12) 01/13/2000 10.00	RPSB-38 RPSB-38 (30-32) 01/13/2000 30.00
Benzene	(mg/kg)	0.06	0.002	0.002	0.03	0.012 U	0.002
Ethylbenzene	(mg/kg)	5.5	0.002	0.004	0.026	0.23	0.003
Toluene	(mg/kg)	1.5	0.002	0.003	0.023	0.012 U	0.002
Xylene (total)	(mg/kg)	1.2	0.005	0.009	0.054	0.29	0.006
Total BTEX	(mg/kg)		0.011	0.018	0.133	0.52	0.013

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-38 RPSB-38 (50-52) 01/13/2000 50.00	RPSB-39 RPSB-39 (2-4) 02/01/2000 2.00	RPSB-39 RPSB-39 (25-27) 02/01/2000 25.00	RPSB-39 RPSB-39 (42-44) 02/01/2000 42.00	RPSB-40 RPSB-40 (19-21) 01/20/2000 19.00
Benzene	(mg/kg)	0.06	0.001 U	12 U	0.014	0.004	0.005
Ethylbenzene	(mg/kg)	5.5	0.002	[74]	0.001	0.009	0.002
Toluene	(mg/kg)	1.5	0.002	[380]	0.009	0.046	0.004
Xylene (total)	(mg/kg)	1.2	0.006	[1200]	0.009	0.1	0.003
Total BTEX	(mg/kg)		0.01	1654.00	0.033	0.159	0.014

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-40 RPSB-40 (26-28) 01/20/2000 26.00	RPSB-40 RPSB-40 (38-40) 01/20/2000 38.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-41 RPSB-41 (9-11) 12/16/1999 9.00	RPSB-41 RPSB-41 (45-47) 12/16/1999 45.00
Benzene	(mg/kg)	0.06	0.001 U	0.002	61 U	0.31 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 J	0.002	[75]	[7.4]	0.001 U
Toluene	(mg/kg)	1.5	0.002	0.001	[60] J	[1.8]	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.003	[240]	[20]	0.002
Total BTEX	(mg/kg)		0.003	0.008	375.00	29.20	0.002

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00	RPSB-42 RPSB-42 (10-12) 01/19/2000 10.00	RPSB-42 RPSB-42 (35-37) 01/24/2000 35.00	RPSB-42 RPSB-42(124-126 02/29/2000 124.00	RPSB-43 RPSB-43 (5-7) 12/01/1999 5.00
Benzene	(mg/kg)	0.06	0.26 U	[0.39]	0.002	0.001 U	0.023
Ethylbenzene	(mg/kg)	5.5	0.26 U	2.6	0.001 U	0.001 U	0.78 D
Toluene	(mg/kg)	1.5	0.26 U	0.21	0.004	0.003	0.043
Xylene (total)	(mg/kg)	1.2	0.26 U	[2.7]	0.003	0.013	0.18
Total BTEX	(mg/kg)		0.00	5.90	0.009	0.016	1.026

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-43 RPSB-43 (9-11) 12/01/1999 9.00	RPSB-43 RPSB-43 (45-47) 12/02/1999 45.00	RPSB-43 RPSB-43 (95-97) 12/03/1999 95.00	RPSB-44 RPSB-44 (10-12) 12/03/1999 10.00	RPSB-44 RPSB-44 (65-67) 12/06/1999 65.00
Benzene	(mg/kg)	0.06	1.2 U	0.062 U	0.001 U	[1.7]	0.001 U
Ethylbenzene	(mg/kg)	5.5	[7]	0.12	0.001 U	[56]	0.001 J
Toluene	(mg/kg)	1.5	[2.5]	0.062 U	0.001	1.2 U	0.001 U
Xylene (total)	(mg/kg)	1.2	[6.7]	0.22	0.003	[90]	0.003
Total BTEX	(mg/kg)		16.20	0.34	0.004	147.70	0.004

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-44 RPSB-44(149-151 03/15/2000 149.00	RPSB-45 RPSB-45 (6-8) 01/07/2000 6.00	RPSB-45 RPSB-45 (25-27) 01/07/2000 25.00	RPSB-45 RPSB-45 (40-42) 01/07/2000 40.00	RPSB-45 RPSB-45 (50-52) 01/07/2000 50.00
Benzene	(mg/kg)	0.06	0.001	0.062 U	0.012 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.002	3.8	0.75	0.002	0.001 U
Toluene	(mg/kg)	1.5	0.001	0.062 U	0.012 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.014	[2.6]	0.68	0.004	0.001 U
Total BTEX	(mg/kg)		0.018	6.40	1.43	0.006	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-46 RPSB-46 (4-6) 12/20/1999 4.00	RPSB-46 RPSB-46 (8-10) 12/20/1999 8.00	RPSB-46 RPSB-46 (35-37) 12/20/1999 35.00	RPSB-46 RPSB-46 (50-52) 12/20/1999 50.00	RPSB-47 RPSB-47 (5-7) 01/13/2000 5.00
Benzene	(mg/kg)	0.06	0.007	[4.3]	0.001 U	0.001 U	0.27 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	[35]	0.001 U	0.001 J	0.27 U
Toluene	(mg/kg)	1.5	0.006	0.6 U	0.001 U	0.001 U	0.27 U
Xylene (total)	(mg/kg)	1.2	0.017	[14]	0.001 J	0.005	[7.8]
Total BTEX	(mg/kg)		0.03	53.30	0.001	0.006	7.80

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-47 RPSB-47 (25-27) 01/13/2000 25.00	RPSB-47 RPSB-47 (40-42) 01/14/2000 40.00	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-48 RPSB-48 (22-24) 01/24/2000 22.00	RPSB-48 RPSB-48 (45-47) 01/24/2000 45.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	[120]	0.001 U	0.002
Ethylbenzene	(mg/kg)	5.5	0.002	0.002	[71]	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 J	0.001 U	[770]	0.003	0.004
Xylene (total)	(mg/kg)	1.2	0.004	0.002	[680]	0.002	0.003
Total BTEX	(mg/kg)		0.007	0.004	1641.00	0.005	0.009

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-49 RPSB-49 (2-4) 12/08/1999 2.00	RPSB-49 RPSB-49 (8-10) 12/08/1999 8.00	RPSB-49 RPSB-49 (40-42) 12/08/1999 40.00	RPSB-49 RPSB-49 (50-52) 12/08/1999 50.00	RPSB-50 RPSB-50 (5-7) 12/09/1999 5.00
Benzene	(mg/kg)	0.06	0.004	0.56 U	0.001 U	0.002	0.005
Ethylbenzene	(mg/kg)	5.5	0.004	[36]	0.004	0.003	0.003
Toluene	(mg/kg)	1.5	0.007	0.56 U	0.002	0.004	0.008
Xylene (total)	(mg/kg)	1.2	0.016	[120]	0.01	0.012	0.012
Total BTEX	(mg/kg)		0.031	156.00	0.016	0.021	0.028

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-50 RPSB-50 (7-9) 12/09/1999 7.00	RPSB-50 RBSB-50 (39-41) 12/10/1999 39.00	RPSB-50 RPSB-50 (55-57) 12/13/1999 55.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00	RPSB-51 RPSB-51 (10-12) 01/10/2000 10.00
Benzene	(mg/kg)	0.06	0.034	0.002	0.001 U	0.01	3.2 U
Ethylbenzene	(mg/kg)	5.5	0.26	0.002	0.002	0.009	[240]
Toluene	(mg/kg)	1.5	0.03	0.002	0.003	0.004 J	[44]
Xylene (total)	(mg/kg)	1.2	0.25	0.01	0.006	0.006	[410]
Total BTEX	(mg/kg)		0.574	0.016	0.011	0.029	694.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-51 RPSB-51 (40-42) 01/11/2000 40.00	RPSB-51 RPSB-51 (50-52) 01/11/2000 50.00	RPSB-52 RPSB-52 (6-8) 01/13/2000 6.00	RPSB-52 RPSB-52 (30-32) 01/14/2000 30.00	RPSB-52 RPSB-52 (42-44) 01/14/2000 42.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 J	6.2 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.002	0.004	[84]	0.001 J	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	[7.3]	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.002	0.007	[250]	0.002	0.001 U
Total BTEX	(mg/kg)		0.004	0.012	341.30	0.003	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-53 RPSB-53 (5-7) 02/02/2000 5.00	RPSB-53 RPSB-53 (25-27) 02/02/2000 25.00	RPSB-53 RPSB-53 (39-41) 02/02/2000 39.00	RPSB-54 RPSB-54 (4-6) 01/12/2000 4.00	RPSB-54 RPSB-54 (12-14) 01/12/2000 12.00
Benzene	(mg/kg)	0.06	0.06 U	0.001 U	0.001 U	0.001 U	1.2 U
Ethylbenzene	(mg/kg)	5.5	0.75	0.001 U	0.001 U	0.002	5
Toluene	(mg/kg)	1.5	0.098	0.001 U	0.001 U	0.004	[33]
Xylene (total)	(mg/kg)	1.2	[1.4]	0.002	0.001 U	0.004	[23]
Total BTEX	(mg/kg)		2.248	0.002	0.00	0.01	61.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 5
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-54 RPSB-54 (50-52) 01/13/2000 50.00
Benzene	(mg/kg)	0.06	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.003
Toluene	(mg/kg)	1.5	0.014
Xylene (total)	(mg/kg)	1.2	0.039
Total BTEX	(mg/kg)		0.056

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-07 RPSB-07(15-17) 12/13/1999 15.00	RPSB-07 RPSB-07(27-29) 12/13/1999 27.00	RPSB-07 RPSB-07(39-41) 12/13/1999 39.00	RPSB-08 RPSB-08(15-17) 12/13/1999 15.00	RPSB-08 RPSB-08(30-32) 12/14/1999 30.00
Benzo(a)pyrene	(mg/kg)	0.061	0.4 U	0.4 U	0.33 U	0.045 J	0.04 J
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	0.4 U	0.33 U	0.42 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	0.4 U	0.4 U	0.33 U	0.05 J	0.053 J
Acenaphthene	(mg/kg)	50	0.4 U	0.4 U	0.33 U	0.42 U	0.39 U
Phenanthrene	(mg/kg)	50	0.068 J	0.061 J	0.33 U	0.15 J	0.26 J
Fluorene	(mg/kg)	50	0.4 U	0.4 U	0.33 U	0.42 U	0.39 U
Naphthalene	(mg/kg)	13	0.4 U	0.4 U	0.33 U	0.42 U	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	0.4 U	0.33 U	0.42 U	0.39 U
Anthracene	(mg/kg)	50	0.4 U	0.4 U	0.33 U	0.42 U	0.054 J
Pyrene	(mg/kg)	50	0.065 J	0.083 J	0.33 U	0.14 J	0.18 J
Dibenzofuran	(mg/kg)	6.2	0.4 U	0.4 U	0.33 U	0.42 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	0.4 U	0.33 U	0.42 U	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	0.4 U	0.33 U	0.42 U	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.4 U	0.4 U	0.33 U	0.044 J	0.39 U
Fluoranthene	(mg/kg)	50	0.4 U	0.047 J	0.33 U	0.095 J	0.1 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	0.4 U	0.33 U	0.42 U	0.39 U
Acenaphthylene	(mg/kg)	41	0.4 U	0.4 U	0.33 U	0.42 U	0.39 U
Chrysene	(mg/kg)	0.4	0.4 U	0.4 U	0.33 U	0.049 J	0.054 J
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	0.188	0.147
Total PAHs	(mg/kg)	500	0.133	0.191	0.00	0.573	0.741

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-08 RPSB-08(40-42) 12/14/1999 40.00	RPSB-09 RPSB-09 (2-4) 01/07/2000 2.00	RPSB-09 RPSB-09 (20-22) 01/07/2000 20.00	RPSB-09 RPSB-09 (40-42) 01/07/2000 40.00	RPSB-10 RPSB-10 (4-6) 12/28/1999 4.00
Benzo(a)pyrene	(mg/kg)	0.061	0.43 U	[340] DJ	[0.15] J	0.41 U	[7.2]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.43 U	[6.8]	0.39 U	0.41 U	[0.99] J
Benzo(a)anthracene	(mg/kg)	0.224	0.43 U	[500] DJ	0.21 J	0.41 U	[5.5]
Acenaphthene	(mg/kg)	50	0.43 U	[880] DU	0.11 J	0.41 U	1.8 J
Phenanthrene	(mg/kg)	50	0.43 U	[3300] D	0.98	0.23 J	16
Fluorene	(mg/kg)	50	0.43 U	[950] D	0.22 J	0.41 U	5.1
Naphthalene	(mg/kg)	13	0.43 U	[9600] D	0.42	0.41 U	[47]
2-Methylnaphthalene	(mg/kg)	36.4	0.43 U	4.4 U	0.31 J	0.41 U	20
Anthracene	(mg/kg)	50	0.43 U	[620] DJ	0.26 J	0.042 J	4.2
Pyrene	(mg/kg)	50	0.43 U	[1500] D	0.61	0.15 J	23
Dibenzofuran	(mg/kg)	6.2	0.43 U	[110] DJ	0.39 U	0.41 U	0.64 J
Benzo(g,h,i)perylene	(mg/kg)	50	0.43 U	[170] DJ	0.092 J	0.41 U	5.9
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.43 U	[140] DJ	0.083 J	0.41 U	[5.3]
Benzo(b)fluoranthene	(mg/kg)	1.1	0.43 U	[300] DJ	0.14 J	0.41 U	[8]
Fluoranthene	(mg/kg)	50	0.43 U	[1000] D	0.42	0.1 J	8.9
Benzo(k)fluoranthene	(mg/kg)	1.1	0.43 U	[180] DJ	0.063 J	0.41 U	[3] J
Acenaphthylene	(mg/kg)	41	0.43 U	[240] DJ	0.074 J	0.41 U	6.9
Chrysene	(mg/kg)	0.4	0.43 U	[460] DJ	0.21 J	0.41 U	[6.4]
Total CAPAHs	(mg/kg)	10	0.00	[1926.80]	0.856	0.00	[36.39]
Total PAHs	(mg/kg)	500	0.00	[19526.80]	4.352	0.522	175.83

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-10 RPSB-10 (18-20) 12/28/1999 18.00	RPSB-10 RPSB-10 (50-52) 12/28/1999 50.00	RPSB-10 RPSB-10 (65-67) 12/29/1999 65.00	RPSB-11 RPSB-11 (15-17) 12/17/1999 15.00	RPSB-11 RPSB-11 (40-42) 12/17/1999 40.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.1] J	0.4 U	0.42 U	[6.7] J	0.047 J
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.42 U	0.4 U	0.42 U	10 U	0.43 U
Benzo(a)anthracene	(mg/kg)	0.224	0.18 J	0.06 J	0.058 J	[9.2] J	0.074 J
Acenaphthene	(mg/kg)	50	0.34 J	0.13 J	0.078 J	27	0.22 J
Phenanthrene	(mg/kg)	50	0.73	0.59	0.3 J	[62]	0.62
Fluorene	(mg/kg)	50	0.22 J	0.13 J	0.061 J	21	0.18 J
Naphthalene	(mg/kg)	13	0.5	0.27 J	0.42 U	[170]	0.42 J
2-Methylnaphthalene	(mg/kg)	36.4	0.17 J	0.052 J	0.42 U	[68]	0.21 J
Anthracene	(mg/kg)	50	0.18 J	0.11 J	0.062 J	15	0.11 J
Pyrene	(mg/kg)	50	0.6	0.25 J	0.16 J	26	0.25 J
Dibenzofuran	(mg/kg)	6.2	0.42 U	0.4 U	0.42 U	1.8 J	0.43 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.05 J	0.4 U	0.42 U	1.7 J	0.43 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.42 U	0.4 U	0.42 U	1.5 J	0.43 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.097 J	0.4 U	0.42 U	[5.2] J	0.43 U
Fluoranthene	(mg/kg)	50	0.33 J	0.18 J	0.1 J	16	0.17 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.048 J	0.4 U	0.42 U	[2] J	0.43 U
Acenaphthylene	(mg/kg)	41	0.059 J	0.029 J	0.42 U	6.5 J	0.43 U
Chrysene	(mg/kg)	0.4	0.15 J	0.043 J	0.043 J	[6.7] J	0.062 J
Total CAPAHs	(mg/kg)	10	0.575	0.103	0.101	[31.30]	0.183
Total PAHs	(mg/kg)	500	3.754	1.844	0.862	446.30	2.363

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-11 RPSB-11 (45-47) 12/17/1999 45.00	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-12 RPSB-12 (14-16) 12/27/1999 14.00	RPSB-12 RPSB-12 (50-52) 12/27/1999 50.00	RPSB-13 RPSB-13 (4-6) 01/13/2000 4.00
Benzo(a)pyrene	(mg/kg)	0.061	0.43 U	[1.8]	[350] J	0.4 U	0.34 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.43 U	[0.65] J	590 U	0.4 U	0.34 U
Benzo(a)anthracene	(mg/kg)	0.224	0.044 J	[3.4]	[520] J	0.4 U	0.34 U
Acenaphthene	(mg/kg)	50	0.15 J	0.7 U	[1800]	0.044 J	0.34 U
Phenanthrene	(mg/kg)	50	0.4 J	3.6	[3200]	0.18 J	0.34 U
Fluorene	(mg/kg)	50	0.12 J	0.7 U	[1000]	0.4 U	0.34 U
Naphthalene	(mg/kg)	13	0.29 J	1.2	[6800]	0.046 J	0.34 U
2-Methylnaphthalene	(mg/kg)	36.4	0.12 J	0.43 J	[3300]	0.4 U	0.34 U
Anthracene	(mg/kg)	50	0.085 J	0.6 J	[900]	0.041 J	0.34 U
Pyrene	(mg/kg)	50	0.17 J	7	[1400]	0.1 J	0.34 U
Dibenzofuran	(mg/kg)	6.2	0.43 U	0.7 U	[85] J	0.4 U	0.34 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.43 U	2.4	[130] J	0.4 U	0.34 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.43 U	2.2	[110] J	0.4 U	0.34 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.43 U	[4.1]	[280] J	0.4 U	0.34 U
Fluoranthene	(mg/kg)	50	0.1 J	4.3	[940]	0.062 J	0.34 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.43 U	[1.3]	[110] J	0.4 U	0.34 U
Acenaphthylene	(mg/kg)	41	0.031 J	1	[180] J	0.4 U	0.34 U
Chrysene	(mg/kg)	0.4	0.43 U	[4.3]	[470] J	0.4 U	0.34 U
Total CAPAHs	(mg/kg)	10	0.044	[17.75]	[1840.00]	0.00	0.00
Total PAHs	(mg/kg)	500	1.51	38.28	[21575.00]	0.473	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-13 RPSB-13 (30-32) 01/13/2000 30.00	RPSB-13 RPSB-13 (38-40) 01/14/2000 38.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-14 RPSB-14 (6-8) 12/13/1999 6.00	RPSB-14 RPSB-14 (30-32) 12/13/1999 30.00
Benzo(a)pyrene	(mg/kg)	0.061	0.39 U	0.38 U	[4.9]	0.41 U	0.39 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.39 U	0.38 U	[0.94] J	0.41 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	0.39 U	0.38 U	[4.8]	0.41 U	0.041 J
Acenaphthene	(mg/kg)	50	0.39 U	0.38 U	3.4 U	0.41 U	0.39 U
Phenanthrene	(mg/kg)	50	0.39 U	0.38 U	1.2 J	0.12 J	0.21 J
Fluorene	(mg/kg)	50	0.39 U	0.38 U	0.58 J	0.41 U	0.39 U
Naphthalene	(mg/kg)	13	0.39 U	0.38 U	0.53 J	0.41 U	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	0.39 U	0.38 U	0.56 J	0.41 U	0.39 U
Anthracene	(mg/kg)	50	0.39 U	0.38 U	0.88 J	0.41 U	0.39 U
Pyrene	(mg/kg)	50	0.39 U	0.38 U	7.8	0.11 J	0.13 J
Dibenzofuran	(mg/kg)	6.2	0.39 U	0.38 U	3.4 U	0.41 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.39 U	0.38 U	3.6	0.41 U	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.39 U	0.38 U	[3.2] J	0.41 U	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.39 U	0.38 U	[5.7]	0.41 U	0.39 U
Fluoranthene	(mg/kg)	50	0.39 U	0.38 U	3.1 J	0.064 J	0.083 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.39 U	0.38 U	[2.9] J	0.41 U	0.39 U
Acenaphthylene	(mg/kg)	41	0.39 U	0.38 U	5.4	0.41 U	0.39 U
Chrysene	(mg/kg)	0.4	0.39 U	0.38 U	[5.4]	0.043 J	0.043 J
Total CAPAHs	(mg/kg)	10	0.00	0.00	[27.84]	0.043	0.084
Total PAHs	(mg/kg)	500	0.00	0.00	51.49	0.337	0.507

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-14 RPSB-14 (40-42) 12/13/1999 40.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-15 RPSB-15 (7-9) 12/15/1999 7.00	RPSB-15 RPSB-15 (25-27) 12/15/1999 25.00	RPSB-15 RPSB-15 (40-42) 12/15/1999 40.00
Benzo(a)pyrene	(mg/kg)	0.061	0.42 U	[0.75]	[0.07] J	0.38 U	0.42 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.42 U	[0.17] J	0.38 U	0.38 U	0.42 U
Benzo(a)anthracene	(mg/kg)	0.224	0.42 U	[0.82]	0.097 J	0.38 U	0.052 J
Acenaphthene	(mg/kg)	50	0.42 U	0.37 U	0.38 U	0.38 U	0.42 U
Phenanthrene	(mg/kg)	50	0.15 J	0.78	0.081 J	0.082 J	0.19 J
Fluorene	(mg/kg)	50	0.42 U	0.15 J	0.38 U	0.38 U	0.42 U
Naphthalene	(mg/kg)	13	0.42 U	0.32 J	0.38 U	0.38 U	0.42 U
2-Methylnaphthalene	(mg/kg)	36.4	0.42 U	0.22 J	0.38 U	0.38 U	0.42 U
Anthracene	(mg/kg)	50	0.42 U	0.38	0.38 U	0.38 U	0.42 U
Pyrene	(mg/kg)	50	0.078 J	1.8	0.2 J	0.07 J	0.16 J
Dibenzofuran	(mg/kg)	6.2	0.42 U	0.37 U	0.38 U	0.38 U	0.42 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.42 U	0.77	0.38 U	0.38 U	0.42 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.42 U	0.67	0.38 U	0.38 U	0.42 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.42 U	[1.1]	0.1 J	0.38 U	0.42 U
Fluoranthene	(mg/kg)	50	0.05 J	0.95	0.1 J	0.38 U	0.08 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.42 U	0.41	0.052 J	0.38 U	0.42 U
Acenaphthylene	(mg/kg)	41	0.42 U	0.81	0.08 J	0.38 U	0.42 U
Chrysene	(mg/kg)	0.4	0.42 U	[0.97]	0.1 J	0.38 U	0.42 U
Total CAPAHs	(mg/kg)	10	0.00	4.89	0.419	0.00	0.052
Total PAHs	(mg/kg)	500	0.278	11.07	0.88	0.152	0.482

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-16 RPSB-16 (4-6) 12/03/1999 4.00	RPSB-16 RPSB-16 (6-8) 12/03/1999 6.00	RPSB-16 RPSB-16 (30-32) 12/07/1999 30.00	RPSB-16 RPSB-16 (50-52) 12/07/1999 50.00	RPSB-17 RPSB-17 (35-37) 12/07/1999 35.00
Benzo(a)pyrene	(mg/kg)	0.061	[190]	[55]	0.06 J	[0.065] J	0.4 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[23]	[6.4] J	0.39 U	0.39 U	0.4 U
Benzo(a)anthracene	(mg/kg)	0.224	[240]	[60]	0.085 J	0.087 J	0.046 J
Acenaphthene	(mg/kg)	50	[130]	39 J	0.24 J	0.087 J	0.099 J
Phenanthrene	(mg/kg)	50	[510] D	[250]	0.58	0.49	0.4
Fluorene	(mg/kg)	50	[160]	[84]	0.14 J	0.084 J	0.086 J
Naphthalene	(mg/kg)	13	[210]	[340]	0.25 J	0.39 U	0.18 J
2-Methylnaphthalene	(mg/kg)	36.4	[240]	[250]	0.12 J	0.39 U	0.096 J
Anthracene	(mg/kg)	50	[180]	[67]	0.11 J	0.1 J	0.065 J
Pyrene	(mg/kg)	50	[580] D	[150]	0.3 J	0.26 J	0.2 J
Dibenzofuran	(mg/kg)	6.2	[15] J	[9.1] J	0.39 U	0.39 U	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	[71]	24 J	0.39 U	0.39 U	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[76]	[21] J	0.39 U	0.39 U	0.4 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[200]	[39] J	0.048 J	0.053 J	0.4 U
Fluoranthene	(mg/kg)	50	[450] D	[120]	0.18 J	0.16 J	0.14 J
Benzo(k)fluoranthene	(mg/kg)	1.1	[75]	[19] J	0.39 U	0.39 U	0.4 U
Acenaphthylene	(mg/kg)	41	[630]	[45]	0.39 U	0.39 U	0.4 U
Chrysene	(mg/kg)	0.4	[210]	[54]	0.078 J	0.07 J	0.045 J
Total CAPAHs	(mg/kg)	10	[1014.00]	[254.40]	0.271	0.275	0.091
Total PAHs	(mg/kg)	500	[4190.00]	[1632.50]	2.191	1.456	1.357

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-17 RPSB-17 (50-52) 12/08/1999 50.00	RPSB-18 RPSB-18 (4-6) 12/08/1999 4.00	RPSB-18 RPSB-18 (10-12) 12/08/1999 10.00	RPSB-18 RPSB-18 (80-82) 12/09/1999 80.00	RPSB-18 RPSB-18 (85-87) 12/09/1999 85.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.24] J	[9.4] J	[0.16] J	[0.15] J	0.41 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	[1.1] J	0.39 U	0.4 U	0.41 U
Benzo(a)anthracene	(mg/kg)	0.224	[0.33] J	[13]	0.22 J	0.2 J	0.41 U
Acenaphthene	(mg/kg)	50	0.13 J	39	0.31 J	0.31 J	0.41 U
Phenanthrene	(mg/kg)	50	1.4	[76]	1.3	1.4	0.054 J
Fluorene	(mg/kg)	50	0.21 J	30	0.37 J	0.4 J	0.41 U
Naphthalene	(mg/kg)	13	0.4 U	[560] D	0.75	0.21 J	0.41 U
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	[200] D	0.36 J	0.44	0.41 U
Anthracene	(mg/kg)	50	0.33 J	21	0.34 J	0.27 J	0.41 U
Pyrene	(mg/kg)	50	1.1	40	0.62	0.76	0.41 U
Dibenzofuran	(mg/kg)	6.2	0.4 U	3.9 J	0.39 U	0.4 U	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.11 J	3.6 J	0.059 J	0.048 J	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.083 J	2.9 J	0.046 J	0.4 U	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.23 J	[8.4] J	0.11 J	0.13 J	0.41 U
Fluoranthene	(mg/kg)	50	0.56	24	0.4	0.38 J	0.41 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.1 J	[4.2] J	0.054 J	0.053 J	0.41 U
Acenaphthylene	(mg/kg)	41	0.16 J	5 J	0.18 J	0.14 J	0.41 U
Chrysene	(mg/kg)	0.4	0.32 J	[11]	0.19 J	0.18 J	0.41 U
Total CAPAHs	(mg/kg)	10	1.303	[50.00]	0.78	0.713	0.00
Total PAHs	(mg/kg)	500	5.303	[1052.50]	5.469	5.071	0.054

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-19 RPSB-19 (4-6) 12/30/1999 4.00	RPSB-19 RPSB-19 (30-32) 01/03/2000 30.00	RPSB-19 RPSB-19 (45-47) 01/03/2000 45.00	RPSB-20 RPSB-20 (2-4) 12/20/1999 2.00	RPSB-20 RPSB-20 (25-27) 12/20/1999 25.00
Benzo(a)pyrene	(mg/kg)	0.061	[48]	0.4 U	0.39 U	[170] J	0.38 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[7.4]	0.4 U	0.39 U	[44] J	0.38 U
Benzo(a)anthracene	(mg/kg)	0.224	[56]	0.4 U	0.39 U	[600] J	0.38 U
Acenaphthene	(mg/kg)	50	[56]	0.4 U	0.39 U	[150]	0.38 U
Phenanthrene	(mg/kg)	50	[230] D	0.15 J	0.39 U	[4200] D	0.1 J
Fluorene	(mg/kg)	50	[57]	0.4 U	0.39 U	[750] J	0.38 U
Naphthalene	(mg/kg)	13	[820] D	0.4 U	0.39 U	[1900] D	0.38 U
2-Methylnaphthalene	(mg/kg)	36.4	[300] D	0.4 U	0.39 U	[2100] D	0.38 U
Anthracene	(mg/kg)	50	[57]	0.4 U	0.39 U	[300] J	0.11 J
Pyrene	(mg/kg)	50	[170] D	0.092 J	0.39 U	[2300] D	0.078 J
Dibenzofuran	(mg/kg)	6.2	[7.5]	0.4 U	0.39 U	[95] J	0.38 U
Benzo(g,h,i)perylene	(mg/kg)	50	34	0.4 U	0.39 U	[190] J	0.38 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[28]	0.4 U	0.39 U	[190] J	0.38 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[49]	0.4 U	0.39 U	[410] J	0.38 U
Fluoranthene	(mg/kg)	50	[61]	0.068 J	0.39 U	[1200]	0.04 J
Benzo(k)fluoranthene	(mg/kg)	1.1	[20]	0.4 U	0.39 U	[170] J	0.38 U
Acenaphthylene	(mg/kg)	41	18	0.4 U	0.39 U	[390] J	0.38 U
Chrysene	(mg/kg)	0.4	[49]	0.4 U	0.39 U	[620] J	0.38 U
Total CAPAHs	(mg/kg)	10	[257.40]	0.00	0.00	[2204.00]	0.00
Total PAHs	(mg/kg)	500	[2067.90]	0.31	0.00	[15779.00]	0.328

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-20 RPSB-20 (40-42) 12/20/1999 40.00	RPSB-21 RPSB-21 (7-9) 12/15/1999 7.00	RPSB-21 RPSB-21 (23-25) 12/15/1999 23.00	RPSB-21 RPSB-21 (39-41) 12/15/1999 39.00	RPSB-22 RPSB-22 (4-6) 12/01/1999 4.00
Benzo(a)pyrene	(mg/kg)	0.061	0.41 U	0.41 U	0.4 U	0.41 U	[61] DJ
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.41 U	0.41 U	0.4 U	0.41 U	[8]
Benzo(a)anthracene	(mg/kg)	0.224	0.41 U	0.08 J	0.4 U	0.41 U	[80] DJ
Acenaphthene	(mg/kg)	50	0.41 U	0.41 U	0.4 U	0.41 U	[200] D
Phenanthrene	(mg/kg)	50	0.11 J	0.34 J	0.4 U	0.058 J	[480] D
Fluorene	(mg/kg)	50	0.41 U	0.086 J	0.4 U	0.41 U	[180] DJ
Naphthalene	(mg/kg)	13	0.41 U	0.1 J	0.4 U	0.41 U	[1400] D
2-Methylnaphthalene	(mg/kg)	36.4	0.41 U	0.18 J	0.4 U	0.41 U	[710] D
Anthracene	(mg/kg)	50	0.41 U	0.076 J	0.4 U	0.41 U	[130] DJ
Pyrene	(mg/kg)	50	0.095 J	0.23 J	0.4 U	0.41 U	[210] D
Dibenzofuran	(mg/kg)	6.2	0.41 U	0.41 U	0.4 U	0.41 U	[18]
Benzo(g,h,i)perylene	(mg/kg)	50	0.41 U	0.41 U	0.4 U	0.41 U	25 DJ
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.41 U	0.41 U	0.4 U	0.41 U	[29]
Benzo(b)fluoranthene	(mg/kg)	1.1	0.41 U	0.41 U	0.4 U	0.41 U	[46] DJ
Fluoranthene	(mg/kg)	50	0.046 J	0.13 J	0.4 U	0.41 U	[170] DJ
Benzo(k)fluoranthene	(mg/kg)	1.1	0.41 U	0.41 U	0.4 U	0.41 U	[21]
Acenaphthylene	(mg/kg)	41	0.41 U	0.047 J	0.4 U	0.41 U	23
Chrysene	(mg/kg)	0.4	0.41 U	0.068 J	0.4 U	0.41 U	[74] DJ
Total CAPAHs	(mg/kg)	10	0.00	0.148	0.00	0.00	[319.00]
Total PAHs	(mg/kg)	500	0.251	1.337	0.00	0.058	[3865.00]

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-22 RPSB-22 (8-10) 12/01/1999 8.00	RPSB-22 RPSB-22 (60-62) 12/02/1999 60.00	RPSB-22 RPSB-22 (80-82) 12/02/1999 80.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00	RPSB-23 RPSB-23 (12-14) 01/04/2000 12.00
Benzo(a)pyrene	(mg/kg)	0.061	[28] DJ	[170] DJ	[0.075] J	[36] DJ	[9] DJ
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[3]	[19]	0.44 U	[16]	[2.1]
Benzo(a)anthracene	(mg/kg)	0.224	[39] DJ	[200] DJ	0.1 J	[57] DJ	[15] DJ
Acenaphthene	(mg/kg)	50	[110] DJ	[66] DJ	0.017 J	26 DJ	30 DJ
Phenanthrene	(mg/kg)	50	[240] D	[1200] D	0.56	[310] D	[96] D
Fluorene	(mg/kg)	50	[86] D	[390] DJ	0.16 J	[110] D	28 DJ
Naphthalene	(mg/kg)	13	[840] D	[3400] D	0.53	[400] D	[230] D
2-Methylnaphthalene	(mg/kg)	36.4	0.41 U	[1100] D	0.2 J	[380] D	[99] D
Anthracene	(mg/kg)	50	[68] DJ	[320] DJ	0.13 J	[88] D	21 DJ
Pyrene	(mg/kg)	50	[100] D	[510] D	0.25 J	[160] D	42 DJ
Dibenzofuran	(mg/kg)	6.2	[6.4]	[42] DJ	0.44 U	[36]	[6.9] E
Benzo(g,h,i)perylene	(mg/kg)	50	12 DJ	[75] DJ	0.44 U	[58]	9.3 E
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[12] DJ	[61] DJ	0.44 U	[58]	[8.8] E
Benzo(b)fluoranthene	(mg/kg)	1.1	[21] DJ	[120] DJ	0.053 J	[28] DJ	[7.3] DJ
Fluoranthene	(mg/kg)	50	[80] DJ	[470] D	0.2 J	[97] D	31 DJ
Benzo(k)fluoranthene	(mg/kg)	1.1	[9.2] DJ	[65] D	0.44 U	[13] DJ	[3]
Acenaphthylene	(mg/kg)	41	13 DJ	[650] D	0.2 J	22 DJ	5.5 DJ
Chrysene	(mg/kg)	0.4	[33] DJ	[180] DJ	0.087 J	[50] DJ	[12] DJ
Total CAPAHs	(mg/kg)	10	[145.20]	[815.00]	0.315	[258.00]	[57.20]
Total PAHs	(mg/kg)	500	[1700.60]	[9038.00]	2.562	[1945.00]	[630.90]

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-23 RPSB-23 (36-38) 01/06/2000 36.00	RPSB-23 RPSB-23 (48-50) 01/06/2000 48.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00	RPSB-24 RPSB-24 (5-7) 01/10/2000 5.00	RPSB-24 RPSB-24 (30-32) 01/11/2000 30.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.12] J	[0.1] J	[46]	[7.8] DJ	[0.066] J
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	0.41 U	[8.1]	[0.82]	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	0.17 J	0.14 J	[70] DJ	[13] DJ	0.097 J
Acenaphthene	(mg/kg)	50	0.098 J	0.15 J	22	39 DJ	0.12 J
Phenanthrene	(mg/kg)	50	0.92	1.1	[250] D	[84] D	0.66
Fluorene	(mg/kg)	50	0.16 J	0.26 J	[59] DJ	33 DJ	0.16 J
Naphthalene	(mg/kg)	13	0.12 J	0.07 J	[19]	[520] D	0.35 J
2-Methylnaphthalene	(mg/kg)	36.4	0.1 J	0.16 J	24	[230] D	0.22 J
Anthracene	(mg/kg)	50	0.18 J	0.16 J	[53]	18 DJ	0.095 J
Pyrene	(mg/kg)	50	0.62	0.45	[170] D	45 D	0.3 J
Dibenzofuran	(mg/kg)	6.2	0.4 U	0.41 U	5.2	0.39 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	0.044 J	34	2.7	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.042 J	0.042 J	[28]	[3.8]	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.1 J	0.079 J	[51]	[5.9] DJ	0.057 J
Fluoranthene	(mg/kg)	50	0.29 J	0.32 J	[110] DJ	22 DJ	0.21 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	0.04 J	[20]	[4]	0.39 U
Acenaphthylene	(mg/kg)	41	0.053 J	0.1 J	20	0.39 U	0.033 J
Chrysene	(mg/kg)	0.4	0.14 J	0.13 J	[61] DJ	[11] DJ	0.087 J
Total CAPAHs	(mg/kg)	10	0.572	0.531	[284.10]	[46.32]	0.307
Total PAHs	(mg/kg)	500	3.113	3.345	[1050.30]	[1040.02]	2.455

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-24 RPSB-24 (50-52) 01/11/2000 50.00	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-25 RPSB-25 (6-8) 12/21/1999 6.00	RPSB-25 RPSB-25 (40-42) 12/21/1999 40.00	RPSB-25 RPSB-25 (50-52) 12/21/1999 50.00
Benzo(a)pyrene	(mg/kg)	0.061	0.06 J	[1.6]	[1.6] J	0.39 U	0.4 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.33 U	[0.31] J	3.1 U	0.39 U	0.4 U
Benzo(a)anthracene	(mg/kg)	0.224	0.075 J	[2.4]	[2.1] J	0.39 U	0.4 U
Acenaphthene	(mg/kg)	50	0.082 J	2.8	5.1	0.39 U	0.4 U
Phenanthrene	(mg/kg)	50	0.47	18 D	19	0.053 J	0.15 J
Fluorene	(mg/kg)	50	0.1 J	7 D	7.8	0.39 U	0.4 U
Naphthalene	(mg/kg)	13	0.065 J	[35] D	[46]	0.39 U	0.4 U
2-Methylnaphthalene	(mg/kg)	36.4	0.095 J	30 D	[40]	0.39 U	0.4 U
Anthracene	(mg/kg)	50	0.082 J	3.1	3.7	0.39 U	0.4 U
Pyrene	(mg/kg)	50	0.22 J	5.7	7.2	0.05 J	0.11 J
Dibenzofuran	(mg/kg)	6.2	0.33 U	0.41 U	2.7 J	0.39 U	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.33 U	1.2	0.6 J	0.39 U	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.33 U	1.1	0.51 J	0.39 U	0.4 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.051 J	[1.8]	[1.7] J	0.39 U	0.4 U
Fluoranthene	(mg/kg)	50	0.16 J	3.2	3.5	0.39 U	0.042 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.33 U	0.68	[1.1] J	0.39 U	0.4 U
Acenaphthylene	(mg/kg)	41	0.33 U	0.41 U	3.1 U	0.39 U	0.4 U
Chrysene	(mg/kg)	0.4	0.074 J	[2.1]	[1.9] J	0.39 U	0.4 U
Total CAPAHs	(mg/kg)	10	0.26	9.99	8.91	0.00	0.00
Total PAHs	(mg/kg)	500	1.534	115.99	144.51	0.103	0.302

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-26 RPSB-26 (13-15) 01/19/2000 13.00	RPSB-26 RPSB-26 (38-40) 01/19/2000 38.00	RPSB-27 RPSB-27 (2-4) 12/16/1999 2.00	RPSB-27 RPSB-27 (10-12) 12/16/1999 10.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.082] J	4.1 U	3.9 U	[34] DJ	[53] DJ
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.34 U	4.1 U	3.9 U	[7.2]	[5.2]
Benzo(a)anthracene	(mg/kg)	0.224	0.13 J	4.1 U	3.9 U	[45] DJ	[73] DJ
Acenaphthene	(mg/kg)	50	0.34 U	4.1 U	3.9 U	[54] DJ	[170] D
Phenanthrene	(mg/kg)	50	0.15 J	4.1 U	3.9 U	[280] D	[480] D
Fluorene	(mg/kg)	50	0.34 U	4.1 U	3.9 U	[92] DJ	[170] D
Naphthalene	(mg/kg)	13	0.046 J	4.8	3.9 U	[690] D	[1200] D
2-Methylnaphthalene	(mg/kg)	36.4	0.34 U	4.1 U	3.9 U	[510] D	[840] D
Anthracene	(mg/kg)	50	0.039 J	4.1 U	3.9 U	[64] DJ	[95] DJ
Pyrene	(mg/kg)	50	0.32 J	4.1 U	3.9 U	[140] DJ	[220] D
Dibenzofuran	(mg/kg)	6.2	0.34 U	4.1 U	3.9 U	[29]	[21]
Benzo(g,h,i)perylene	(mg/kg)	50	0.1 J	4.1 U	3.9 U	34 E	19
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.088 J	4.1 U	3.9 U	[30] E	[17]
Benzo(b)fluoranthene	(mg/kg)	1.1	0.16 J	4.1 U	3.9 U	[25] DJ	[45] DJ
Fluoranthene	(mg/kg)	50	0.2 J	4.1 U	3.9 U	[64] DJ	[130] D
Benzo(k)fluoranthene	(mg/kg)	1.1	0.076 J	4.1 U	3.9 U	[19]	[13]
Acenaphthylene	(mg/kg)	41	0.075 J	4.1 U	3.9 U	[77] DJ	[42] DJ
Chrysene	(mg/kg)	0.4	0.16 J	4.1 U	3.9 U	[39] DJ	[68] DJ
Total CAPAHs	(mg/kg)	10	0.696	0.00	0.00	[199.20]	[274.20]
Total PAHs	(mg/kg)	500	1.626	4.80	0.00	[2233.20]	[3661.20]

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-27 RPSB-27 (40-42) 12/17/1999 40.00	RPSB-28 RPSB-28 (2-4) 12/29/1999 2.00	RPSB-28 RPSB-28 (4-6) 12/29/1999 4.00	RPSB-28 RPSB-28 (38-40) 12/30/1999 38.00	RPSB-28 RPSB-28 (48-50) 12/30/1999 48.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.078] J	[48] D	[84] D	0.4 U	0.053 J
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	[6.6] DJ	[8.6]	0.4 U	0.41 U
Benzo(a)anthracene	(mg/kg)	0.224	0.099 J	[60] D	[110] D	0.048 J	0.078 J
Acenaphthene	(mg/kg)	50	0.14 J	33 DJ	[56] D	0.4 U	0.091 J
Phenanthrene	(mg/kg)	50	0.66	[280] D	[630] D	0.27 J	0.44
Fluorene	(mg/kg)	50	0.18 J	[88] D	[200] D	0.044 J	0.087 J
Naphthalene	(mg/kg)	13	0.22 J	[360] D	[830] D	0.4 U	0.41 U
2-Methylnaphthalene	(mg/kg)	36.4	0.37 J	[240] D	[590] D	0.4 U	0.41 U
Anthracene	(mg/kg)	50	0.12 J	[88] D	[200] D	0.056 J	0.11 J
Pyrene	(mg/kg)	50	0.31 J	[170] D	[320] D	0.14 J	0.23 J
Dibenzofuran	(mg/kg)	6.2	0.4 U	[9] DJ	[19]	0.4 U	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	26 DJ	38 DJ	0.4 U	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	[23] DJ	[35] DJ	0.4 U	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.056 J	[47] D	[74] D	0.4 U	0.41 U
Fluoranthene	(mg/kg)	50	0.18 J	[100] D	[200] D	0.1 J	0.16 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	[14] DJ	[16]	0.4 U	0.41 U
Acenaphthylene	(mg/kg)	41	0.066 J	33 DJ	[43] DJ	0.4 U	0.41 U
Chrysene	(mg/kg)	0.4	0.096 J	[62] D	[110] D	0.042 J	0.075 J
Total CAPAHs	(mg/kg)	10	0.329	[260.60]	[437.60]	0.09	0.206
Total PAHs	(mg/kg)	500	2.575	[1687.60]	[3563.60]	0.70	1.324

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-29 RBSB-29 (5-7) 12/10/1999 5.00	RPSB-29 RPSB-29 (55-57) 02/02/2000 55.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-29 RPSB-29 (35-37) 02/03/2000 35.00	RPSB-29 RPSB-29(134-136 02/25/2000 134.00
Benzo(a)pyrene	(mg/kg)	0.061	[36] J	[49] J	[28] J	[0.19] J	0.39 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	78 U	75 U	79 U	0.41 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	[49] J	[64] J	[37] J	[0.25] J	0.086 J
Acenaphthene	(mg/kg)	50	[95]	[190]	79 U	0.28 J	0.39 U
Phenanthrene	(mg/kg)	50	[260]	[430]	[220]	1.6	0.5
Fluorene	(mg/kg)	50	[88]	[150]	[84]	0.4 J	0.13 J
Naphthalene	(mg/kg)	13	[900]	[1200]	[840]	0.13 J	0.47
2-Methylnaphthalene	(mg/kg)	36.4	[390]	[510]	[430]	0.34 J	0.28 J
Anthracene	(mg/kg)	50	[71] J	[110]	[64] J	0.39 J	0.12 J
Pyrene	(mg/kg)	50	[130]	[200]	[100]	0.8	0.27 J
Dibenzofuran	(mg/kg)	6.2	[10] J	[15] J	[11] J	0.047 J	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	15 J	18 J	9.1 J	0.41 U	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[12] J	[17] J	[8.4] J	0.057 J	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[28] J	[37] J	[22] J	0.15 J	0.39 U
Fluoranthene	(mg/kg)	50	[78]	[120]	[61] J	0.49	0.16 J
Benzo(k)fluoranthene	(mg/kg)	1.1	[16] J	[10] J	79 U	0.06 J	0.39 U
Acenaphthylene	(mg/kg)	41	19 J	[51] J	19 J	0.12 J	0.16 J
Chrysene	(mg/kg)	0.4	[41] J	[58] J	[35] J	0.24 J	0.075 J
Total CAPAHs	(mg/kg)	10	[182.00]	[235.00]	[130.40]	0.947	0.161
Total PAHs	(mg/kg)	500	[2238.00]	[3229.00]	[1968.50]	5.544	2.251

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00	RPSB-30 RPSB-30 (19-21) 02/01/2000 19.00	RPSB-30 RPSB-30 (60-62) 02/02/2000 60.00	RPSB-31A RPSB-31A (2-4) 01/04/2000 2.00	RPSB-31A RPSB-31A (4-6) 01/04/2000 4.00
Benzo(a)pyrene	(mg/kg)	0.061	[53] J	[0.15] J	0.39 U	[54]	[32]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	120 U	0.41 U	0.39 U	[11] J	[4.1]
Benzo(a)anthracene	(mg/kg)	0.224	[73] J	0.21 J	0.39 U	[70]	[42]
Acenaphthene	(mg/kg)	50	[91] J	0.11 J	0.39 U	12 J	[52]
Phenanthrene	(mg/kg)	50	[390]	1.1	0.39 U	[110]	[220] D
Fluorene	(mg/kg)	50	[140]	0.33 J	0.39 U	29	[73] DJ
Naphthalene	(mg/kg)	13	[1400]	0.23 J	0.39 U	[13] J	[840] D
2-Methylnaphthalene	(mg/kg)	36.4	[810]	0.21 J	0.39 U	6.1 J	[350] D
Anthracene	(mg/kg)	50	[51] J	0.42	0.39 U	33	47
Pyrene	(mg/kg)	50	[220]	0.72	0.39 U	[200]	[130] DJ
Dibenzofuran	(mg/kg)	6.2	[18] J	0.41 U	0.39 U	3 J	[10]
Benzo(g,h,i)perylene	(mg/kg)	50	24 J	0.067 J	0.39 U	44	19
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[21] J	0.41 U	0.39 U	[35]	[17]
Benzo(b)fluoranthene	(mg/kg)	1.1	[48] J	0.16 J	0.39 U	[69]	[29]
Fluoranthene	(mg/kg)	50	[130]	0.4 J	0.39 U	[110]	[59]
Benzo(k)fluoranthene	(mg/kg)	1.1	[17] J	0.055 J	0.39 U	[19]	[11]
Acenaphthylene	(mg/kg)	41	31 J	0.07 J	0.39 U	34	34
Chrysene	(mg/kg)	0.4	[70] J	0.27 J	0.39 U	[79]	[42]
Total CAPAHs	(mg/kg)	10	[282.00]	0.845	0.00	[337.00]	[177.10]
Total PAHs	(mg/kg)	500	[3587.00]	4.502	0.00	[931.10]	[2011.10]

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-31A RPSB-31A(35-37) 01/04/2000 35.00	RPSB-31A SB-31A(133-135) 03/10/2000 133.00	RPSB-31B RPSB-31B (4-6) 01/11/2000 4.00	RPSB-31B RPSB-31B (6-8) 01/11/2000 6.00	RPSB-31B RPSB-31B(22-24) 01/12/2000 22.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.77] J	[0.12] J	[0.064] J	[5.2] J	0.39 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.83 U	0.39 U	0.35 U	7.6 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	[1.3]	0.15 J	0.038 J	[4.5] J	0.39 U
Acenaphthene	(mg/kg)	50	2.2	0.1 J	0.35 U	2.9 J	0.39 U
Phenanthrene	(mg/kg)	50	7.5	0.96	0.058 J	8	0.096 J
Fluorene	(mg/kg)	50	2.4	0.29 J	0.042 J	3.9 J	0.39 U
Naphthalene	(mg/kg)	13	7.4	0.98	0.13 J	[97]	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	5.9	0.63	0.35 U	8	0.39 U
Anthracene	(mg/kg)	50	1.5	0.23 J	0.096 J	2.4 J	0.39 U
Pyrene	(mg/kg)	50	3.4	0.47	0.078 J	16	0.085 J
Dibenzofuran	(mg/kg)	6.2	0.26 J	0.39 U	0.35 U	7.6 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.37 J	0.39 U	0.96	3.7 J	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.26 J	0.39 U	0.24 J	2.9 J	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.61 J	0.088 J	0.35 U	[5.7] J	0.39 U
Fluoranthene	(mg/kg)	50	2.2	0.28 J	0.036 J	7.8	0.057 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.22 J	0.39 U	0.35 U	0.92 J	0.39 U
Acenaphthylene	(mg/kg)	41	0.52 J	0.27 J	0.36	1.8 J	0.39 U
Chrysene	(mg/kg)	0.4	[0.98]	0.15 J	0.35 U	[3.5] J	0.39 U
Total CAPAHs	(mg/kg)	10	4.14	0.508	0.342	[22.72]	0.00
Total PAHs	(mg/kg)	500	37.79	4.718	2.102	174.22	0.238

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-31B RPSB-31B(48-50) 01/13/2000 48.00	RPSB-32 RPSB-32 (2-4) 12/21/1999 2.00	RPSB-32 RPSB-32 (25-27) 12/21/1999 25.00	RPSB-32 RPSB-32 (40-42) 12/21/1999 40.00	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.092] J	[1.9]	[0.067] J	0.41 U	[1.1]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.41 U	[0.44] J	0.37 U	0.41 U	[0.28] J
Benzo(a)anthracene	(mg/kg)	0.224	0.19 J	[3.2]	0.14 J	0.41 U	[2.2]
Acenaphthene	(mg/kg)	50	0.15 J	0.21 J	0.11 J	0.41 U	0.18 J
Phenanthrene	(mg/kg)	50	0.83	6.7	0.92	0.14 J	5.8
Fluorene	(mg/kg)	50	0.2 J	0.57 J	0.21 J	0.41 U	1.1
Naphthalene	(mg/kg)	13	0.41 U	0.31 J	0.37 U	0.41 U	4.7
2-Methylnaphthalene	(mg/kg)	36.4	0.056 J	0.22 J	0.37 U	0.41 U	2.4
Anthracene	(mg/kg)	50	0.17 J	0.7	0.15 J	0.41 U	2
Pyrene	(mg/kg)	50	0.48	11	0.45	0.095 J	6.7 D
Dibenzofuran	(mg/kg)	6.2	0.13 J	0.69 U	0.37 U	0.41 U	0.12 J
Benzo(g,h,i)perylene	(mg/kg)	50	0.044 J	2.6	0.37 U	0.41 U	1.4
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.044 J	2.3	0.37 U	0.41 U	1.2
Benzo(b)fluoranthene	(mg/kg)	1.1	0.12 J	[4]	0.052 J	0.41 U	[1.7]
Fluoranthene	(mg/kg)	50	0.54	3.5	0.29 J	0.065 J	4.1
Benzo(k)fluoranthene	(mg/kg)	1.1	0.042 J	[1.6]	0.051 J	0.41 U	0.54
Acenaphthylene	(mg/kg)	41	0.064 J	1.5	0.066 J	0.41 U	1.5
Chrysene	(mg/kg)	0.4	0.19 J	[3.4]	0.16 J	0.41 U	[2.4]
Total CAPAHs	(mg/kg)	10	0.678	[16.84]	0.47	0.00	9.42
Total PAHs	(mg/kg)	500	3.342	44.15	2.006	0.30	39.42

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (15-17) 12/22/1999 15.00	RPSB-33 RPSB-33 (45-47) 12/22/1999 45.00	RPSB-34 RPSB-34 (8-10) 12/29/1999 8.00	RPSB-34 RPSB-34 (40-42) 12/29/1999 40.00	RPSB-34 RPSB-34 (80-82) 12/30/1999 80.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.1] J	0.42 U	[24]	[1.4]	[0.14] J
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.39 U	0.42 U	[1.6] J	[0.097] J	0.4 U
Benzo(a)anthracene	(mg/kg)	0.224	0.18 J	0.42 U	[28]	[1.5]	0.17 J
Acenaphthene	(mg/kg)	50	0.39 U	0.42 U	[83] D	4	0.11 J
Phenanthrene	(mg/kg)	50	0.92	0.047 J	[180] D	8.9 D	1
Fluorene	(mg/kg)	50	0.22 J	0.42 U	47	2.3	0.19 J
Naphthalene	(mg/kg)	13	1.2	0.42 U	[510] D	6.7	0.2 J
2-Methylnaphthalene	(mg/kg)	36.4	0.33 J	0.42 U	[240] D	3.4	0.13 J
Anthracene	(mg/kg)	50	0.18 J	0.42 U	43	3.2	0.24 J
Pyrene	(mg/kg)	50	0.58	0.42 U	[750] D	4.8	0.55
Dibenzofuran	(mg/kg)	6.2	0.39 U	0.42 U	5.9	0.28 J	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.044 J	0.42 U	10	0.3 J	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.39 U	0.42 U	[8.8]	0.25 J	0.4 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.12 J	0.42 U	[17]	[1.2]	0.12 J
Fluoranthene	(mg/kg)	50	0.34 J	0.42 U	38	3.1	0.4
Benzo(k)fluoranthene	(mg/kg)	1.1	0.039 J	0.42 U	[7]	0.66	0.059 J
Acenaphthylene	(mg/kg)	41	0.05 J	0.42 U	4.8	0.41 J	0.14 J
Chrysene	(mg/kg)	0.4	0.18 J	0.42 U	[25]	[1.3]	0.16 J
Total CAPAHs	(mg/kg)	10	0.619	0.00	[111.40]	6.407	0.649
Total PAHs	(mg/kg)	500	4.483	0.047	[2023.10]	43.797	3.609

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-35 RPSB-35 (10-12) 01/03/2000 10.00	RPSB-35 RPSB-35 (60-62) 01/03/2000 60.00	RPSB-35 RPSB-35 (80-82) 01/04/2000 80.00	RPSB-36 RPSB-36 (5-7) 01/03/2000 5.00
Benzo(a)pyrene	(mg/kg)	0.061	[4.5]	[27] E	[6.9]	0.043 J	[12]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[1.1] J	[2.5]	3.8 U	0.42 U	[1.8] J
Benzo(a)anthracene	(mg/kg)	0.224	[4.9]	[41] E	[7]	0.075 J	[12]
Acenaphthene	(mg/kg)	50	4 U	[60] E	2.8 J	0.42 U	10
Phenanthrene	(mg/kg)	50	4.9	[180] E	44	0.44	42
Fluorene	(mg/kg)	50	0.67 J	44 E	13	0.12 J	12
Naphthalene	(mg/kg)	13	3.5 J	[1300] D	[92] D	0.42 J	[110] D
2-Methylnaphthalene	(mg/kg)	36.4	1.4 J	[640] DJ	[37]	0.14 J	[37]
Anthracene	(mg/kg)	50	1.9 J	44 E	13	0.16 J	10
Pyrene	(mg/kg)	50	8.5	[120] E	24	0.4 J	49
Dibenzofuran	(mg/kg)	6.2	0.47 J	[8] E	1.4 J	0.42 U	2.4 J
Benzo(g,h,i)perylene	(mg/kg)	50	3.9 J	14 E	1.8 J	0.42 U	13
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[3.7] J	[11] E	1.5 J	0.42 U	[10]
Benzo(b)fluoranthene	(mg/kg)	1.1	[5.3]	[20] E	[4.8]	0.42 U	[12]
Fluoranthene	(mg/kg)	50	8.2	[50] E	14	0.21 J	8.8
Benzo(k)fluoranthene	(mg/kg)	1.1	[5.3]	[7.3] E	[2.9] J	0.42 U	[3.3] J
Acenaphthylene	(mg/kg)	41	2.7 J	7.9 E	14	0.14 J	4.3
Chrysene	(mg/kg)	0.4	[5]	[33] E	[6.4]	0.07 J	[14]
Total CAPAHs	(mg/kg)	10	[29.80]	[141.80]	[29.50]	0.188	[65.10]
Total PAHs	(mg/kg)	500	65.94	[2609.70]	286.50	2.218	363.60

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-36 RPSB-36 (7-9) 01/03/2000 7.00	RPSB-36 RPSB-36 (35-37) 01/03/2000 35.00	RPSB-36 RPSB-36 (55-57) 01/04/2000 55.00	RPSB-37 RPSB-37 (10-12) 01/12/2000 10.00	RPSB-37 RPSB-37 (35-37) 01/12/2000 35.00
Benzo(a)pyrene	(mg/kg)	0.061	[18]	[0.32] J	0.043 J	[1.7] J	0.42 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[1.5] J	0.4 U	0.4 U	7.9 U	0.42 U
Benzo(a)anthracene	(mg/kg)	0.224	[24]	[0.37] J	0.093 J	[3.2] J	0.42 U
Acenaphthene	(mg/kg)	50	37	0.65	0.4 U	3.7 J	0.42 U
Phenanthrene	(mg/kg)	50	[140] E	2.2	0.38 J	29	0.13 J
Fluorene	(mg/kg)	50	42	0.5	0.043 J	10	0.42 U
Naphthalene	(mg/kg)	13	[460] D	0.74	0.047 J	[90]	0.42 U
2-Methylnaphthalene	(mg/kg)	36.4	[230] D	0.65	0.4 U	[46]	0.42 U
Anthracene	(mg/kg)	50	31	0.54	0.088 J	2.8 J	0.42 U
Pyrene	(mg/kg)	50	[74] D	1.3	0.27 J	12	0.42 U
Dibenzofuran	(mg/kg)	6.2	[7.5]	0.055 J	0.4 U	2.5 J	0.42 U
Benzo(g,h,i)perylene	(mg/kg)	50	10	0.078 J	0.4 U	7.9 U	0.42 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[7.8]	0.068 J	0.4 U	7.9 U	0.42 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[17]	0.27 J	0.4 U	[1.7] J	0.42 U
Fluoranthene	(mg/kg)	50	32	0.84	0.18 J	6.1 J	0.42 U
Benzo(k)fluoranthene	(mg/kg)	1.1	[6.6]	0.13 J	0.4 U	0.97 J	0.42 U
Acenaphthylene	(mg/kg)	41	6.7	0.095 J	0.4 U	7.9 U	0.42 U
Chrysene	(mg/kg)	0.4	[22]	0.32 J	0.057 J	[3.7] J	0.42 U
Total CAPAHs	(mg/kg)	10	[96.90]	1.478	0.193	[11.27]	0.00
Total PAHs	(mg/kg)	500	[1167.10]	9.126	1.201	213.37	0.13

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-37 RPSB-37 (50-52) 01/12/2000 50.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-38 RPSB-38 (10-12) 01/13/2000 10.00	RPSB-38 RPSB-38 (30-32) 01/13/2000 30.00	RPSB-38 RPSB-38 (50-52) 01/13/2000 50.00
Benzo(a)pyrene	(mg/kg)	0.061	0.39 U	[1]	[4.1] J	0.41 U	0.41 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.39 U	[0.28] J	7.5 U	0.41 U	0.41 U
Benzo(a)anthracene	(mg/kg)	0.224	0.39 U	[1.1]	[5.8] J	0.41 U	0.41 U
Acenaphthene	(mg/kg)	50	0.39 U	0.41 U	7.8	0.41 U	0.41 U
Phenanthrene	(mg/kg)	50	0.39 U	0.91	42	0.16 J	0.054 J
Fluorene	(mg/kg)	50	0.39 U	0.41 U	12	0.41 U	0.41 U
Naphthalene	(mg/kg)	13	0.39 U	0.86	[70]	0.41 U	0.41 U
2-Methylnaphthalene	(mg/kg)	36.4	0.39 U	0.59	[43]	0.41 U	0.41 U
Anthracene	(mg/kg)	50	0.39 U	0.9	4.8 J	0.41 U	0.41 U
Pyrene	(mg/kg)	50	0.39 U	2.9	26	0.28 J	0.41 U
Dibenzofuran	(mg/kg)	6.2	0.39 U	0.41 U	2.4 J	0.41 U	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.39 U	2.4	0.81 J	0.41 U	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.39 U	1.9	7.5 U	0.41 U	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.39 U	[1.1]	[4.3] J	0.41 U	0.41 U
Fluoranthene	(mg/kg)	50	0.39 U	1.4	12	0.17 J	0.41 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.39 U	[1.5]	[2.4] J	0.41 U	0.41 U
Acenaphthylene	(mg/kg)	41	0.39 U	1.1	1.2 J	0.41 U	0.41 U
Chrysene	(mg/kg)	0.4	0.39 U	[1.3]	[6] J	0.41 U	0.41 U
Total CAPAHs	(mg/kg)	10	0.00	8.18	[22.60]	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	19.24	244.61	0.61	0.054

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-39 RPSB-39 (2-4) 02/01/2000 2.00	RPSB-39 RPSB-39 (25-27) 02/01/2000 25.00	RPSB-39 RPSB-39 (42-44) 02/01/2000 42.00	RPSB-40 RPSB-40 (19-21) 01/20/2000 19.00	RPSB-40 RPSB-40 (26-28) 01/20/2000 26.00
Benzo(a)pyrene	(mg/kg)	0.061	[2.4] J	0.4 U	0.4 U	0.4 U	0.39 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	8.1 U	0.4 U	0.4 U	0.4 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	[4.6] J	0.4 U	0.4 U	0.4 U	0.39 U
Acenaphthene	(mg/kg)	50	1.6 J	0.4 U	0.4 U	0.4 U	0.39 U
Phenanthrene	(mg/kg)	50	16	0.32 J	0.16 J	0.4 U	0.39 U
Fluorene	(mg/kg)	50	5.4 J	0.098 J	0.052 J	0.4 U	0.39 U
Naphthalene	(mg/kg)	13	[320] D	0.4 U	0.4 U	0.4 U	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	[68]	0.055 J	0.4 U	0.4 U	0.39 U
Anthracene	(mg/kg)	50	3.5 J	0.065 J	0.4 U	0.4 U	0.39 U
Pyrene	(mg/kg)	50	14	0.11 J	0.4 U	0.4 U	0.39 U
Dibenzofuran	(mg/kg)	6.2	1.4 J	0.4 U	0.4 U	0.4 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	2.3 J	0.4 U	0.4 U	0.4 U	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	2 J	0.4 U	0.4 U	0.4 U	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[4.2] J	0.4 U	0.4 U	0.4 U	0.39 U
Fluoranthene	(mg/kg)	50	8.7	0.076 J	0.4 U	0.4 U	0.39 U
Benzo(k)fluoranthene	(mg/kg)	1.1	[1.9] J	0.4 U	0.4 U	0.4 U	0.39 U
Acenaphthylene	(mg/kg)	41	6.2 J	0.054 J	0.4 U	0.4 U	0.39 U
Chrysene	(mg/kg)	0.4	[5.6] J	0.4 U	0.4 U	0.4 U	0.39 U
Total CAPAHs	(mg/kg)	10	[20.70]	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	467.80	0.778	0.212	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-40 RPSB-40 (38-40) 01/20/2000 38.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-41 RPSB-41 (9-11) 12/16/1999 9.00	RPSB-41 RPSB-41 (45-47) 12/16/1999 45.00	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00
Benzo(a)pyrene	(mg/kg)	0.061	4 U	[47] DJ	[32]	0.39 U	[1.1]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	4 U	[10]	[2.9]	0.39 U	0.69 U
Benzo(a)anthracene	(mg/kg)	0.224	4 U	[67] DJ	[60] DJ	0.39 U	[0.45] J
Acenaphthene	(mg/kg)	50	4 U	[120] D	[59] DJ	0.39 U	1.1
Phenanthrene	(mg/kg)	50	4 U	[520] D	[480] D	0.26 J	2.2
Fluorene	(mg/kg)	50	4 U	[190] D	[190] D	0.068 J	0.72
Naphthalene	(mg/kg)	13	4 U	[880] D	[1000] D	0.043 J	2.8
2-Methylnaphthalene	(mg/kg)	36.4	4 U	[740] D	[740] D	0.064 J	1.7
Anthracene	(mg/kg)	50	4 U	[150] DJ	[130] D	0.063 J	0.57 J
Pyrene	(mg/kg)	50	4 U	[210] D	[180] D	0.15 J	3.8
Dibenzofuran	(mg/kg)	6.2	4 U	[20] DJ	[23]	0.39 U	0.69 U
Benzo(g,h,i)perylene	(mg/kg)	50	4 U	37 E	9.1	0.39 U	0.68 J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	4 U	[37] E	[8.8]	0.39 U	0.56 J
Benzo(b)fluoranthene	(mg/kg)	1.1	4 U	[35] DJ	[25]	0.39 U	[1.1]
Fluoranthene	(mg/kg)	50	4 U	[110] DJ	[110] D	0.059 J	0.82
Benzo(k)fluoranthene	(mg/kg)	1.1	4 U	[20]	[11]	0.39 U	0.34 J
Acenaphthylene	(mg/kg)	41	4 U	[200] D	[250] D	0.059 J	0.69 U
Chrysene	(mg/kg)	0.4	4 U	[61] DJ	[48] DJ	0.39 U	[1]
Total CAPAHs	(mg/kg)	10	0.00	[277.00]	[187.70]	0.00	4.55
Total PAHs	(mg/kg)	500	0.00	[3454.00]	[3358.80]	0.766	18.94

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-42 RPSB-42 (10-12) 01/19/2000 10.00	RPSB-42 RPSB-42 (35-37) 01/24/2000 35.00	RPSB-42 RPSB-42(124-126 02/29/2000 124.00	RPSB-43 RPSB-43 (5-7) 12/01/1999 5.00	RPSB-43 RPSB-43 (9-11) 12/01/1999 9.00
Benzo(a)pyrene	(mg/kg)	0.061	[3.6] J	[0.14] J	[0.072] J	[66] D	[25] DJ
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[0.45] J	0.42 U	0.39 U	[10]	[1.8]
Benzo(a)anthracene	(mg/kg)	0.224	[5.9]	0.18 J	0.1 J	[82] D	[32] DJ
Acenaphthene	(mg/kg)	50	10	0.16 J	0.39 U	[110] D	[110] D
Phenanthrene	(mg/kg)	50	27	1	0.52	[370] D	[200] D
Fluorene	(mg/kg)	50	8.5	0.22 J	0.1 J	[120] D	[73] D
Naphthalene	(mg/kg)	13	[37]	0.17 J	0.15 J	[56] D	[500] D
2-Methylnaphthalene	(mg/kg)	36.4	[39]	0.15 J	0.077 J	19	[210] D
Anthracene	(mg/kg)	50	7.4	0.25 J	0.14 J	[100] D	[84] D
Pyrene	(mg/kg)	50	13	0.57	0.27 J	[210] D	[82] D
Dibenzofuran	(mg/kg)	6.2	1.5 J	0.42 U	0.39 U	[14]	4.9
Benzo(g,h,i)perylene	(mg/kg)	50	1.5 J	0.064 J	0.39 U	32 DJ	9.1 DJ
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	1.1 J	0.049 J	0.39 U	[28] DJ	[7.7] DJ
Benzo(b)fluoranthene	(mg/kg)	1.1	[2.7] J	0.12 J	0.056 J	[68] D	[18] DJ
Fluoranthene	(mg/kg)	50	7.8	0.34 J	0.22 J	[140] D	[62] D
Benzo(k)fluoranthene	(mg/kg)	1.1	[1.4] J	0.052 J	0.39 U	[24]	[8.4] DJ
Acenaphthylene	(mg/kg)	41	3.9 U	0.18 J	0.1 J	24	17 DJ
Chrysene	(mg/kg)	0.4	[5.8]	0.17 J	0.088 J	[83] D	[30] DJ
Total CAPAHs	(mg/kg)	10	[20.95]	0.711	0.316	[361.00]	[122.99]
Total PAHs	(mg/kg)	500	173.65	3.815	1.893	[1556.00]	[1474.90]

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-43 RPSB-43 (45-47) 12/02/1999 45.00	RPSB-43 RPSB-43 (95-97) 12/03/1999 95.00	RPSB-44 RPSB-44 (10-12) 12/03/1999 10.00	RPSB-44 RPSB-44 (65-67) 12/06/1999 65.00	RPSB-44 RPSB-44(149-151 03/15/2000 149.00
Benzo(a)pyrene	(mg/kg)	0.061	[2.8]	0.41 U	[37] DJ	[0.29] J	0.048 J
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[0.21] J	0.41 U	[3]	0.39 U	0.41 U
Benzo(a)anthracene	(mg/kg)	0.224	[4.2]	0.05 J	[43] DJ	[0.36] J	0.061 J
Acenaphthene	(mg/kg)	50	6	0.41 U	[130] D	0.62	0.41 U
Phenanthrene	(mg/kg)	50	30 D	0.3 J	[280] D	2.2	0.35 J
Fluorene	(mg/kg)	50	11 D	0.068 J	[100] D	0.56	0.096 J
Naphthalene	(mg/kg)	13	[49] D	0.14 J	[620] D	0.44	0.28 J
2-Methylnaphthalene	(mg/kg)	36.4	26 D	0.061 J	[300] D	0.24 J	0.13 J
Anthracene	(mg/kg)	50	6.5	0.075 J	[77] D	0.52	0.086 J
Pyrene	(mg/kg)	50	12 D	0.15 J	[110] D	1.1	0.18 J
Dibenzofuran	(mg/kg)	6.2	1.1	0.41 U	[7.8]	0.06 J	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.83	0.41 U	13	0.12 J	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.79	0.41 U	[11]	0.1 J	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[2.3]	0.41 U	[27] DJ	0.24 J	0.41 U
Fluoranthene	(mg/kg)	50	10 D	0.12 J	[99] D	0.68	0.12 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.89	0.41 U	[12] DJ	0.068 J	0.41 U
Acenaphthylene	(mg/kg)	41	6.3	0.071 J	11	0.43	0.1 J
Chrysene	(mg/kg)	0.4	[4.4]	0.044 J	[40] DJ	0.33 J	0.061 J
Total CAPAHs	(mg/kg)	10	[15.59]	0.094	[173.00]	1.388	0.17
Total PAHs	(mg/kg)	500	174.32	1.079	[1920.80]	8.358	1.512

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-45 RPSB-45 (6-8) 01/07/2000 6.00	RPSB-45 RPSB-45 (25-27) 01/07/2000 25.00	RPSB-45 RPSB-45 (40-42) 01/07/2000 40.00	RPSB-45 RPSB-45 (50-52) 01/07/2000 50.00	RPSB-46 RPSB-46 (4-6) 12/20/1999 4.00
Benzo(a)pyrene	(mg/kg)	0.061	[3.4]	[2.3]	[0.37] J	0.41 U	[10]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[0.33] J	[0.23] J	[0.047] J	0.41 U	[1.3] J
Benzo(a)anthracene	(mg/kg)	0.224	[4]	[3.1]	[0.47]	0.41 U	[11]
Acenaphthene	(mg/kg)	50	7.5 D	4.7	0.81	0.41 U	6.2
Phenanthrene	(mg/kg)	50	22 D	1.1 D	2.8	0.22 J	23
Fluorene	(mg/kg)	50	5.3	3.4	0.78	0.41 U	4.4
Naphthalene	(mg/kg)	13	[21] D	5.1	0.91	0.41 U	1.2 J
2-Methylnaphthalene	(mg/kg)	36.4	17 D	3.1	1	0.41 U	1 J
Anthracene	(mg/kg)	50	5.7	4.2	0.7	0.045 J	8
Pyrene	(mg/kg)	50	13 D	7.7 D	1.3	0.11 J	28
Dibenzofuran	(mg/kg)	6.2	0.58	0.39	0.077 J	0.41 U	1.2 J
Benzo(g,h,i)perylene	(mg/kg)	50	1.4	0.96	0.16 J	0.41 U	6.1
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	1.3	0.85	0.14 J	0.41 U	[5.2]
Benzo(b)fluoranthene	(mg/kg)	1.1	[2.7]	[1.6]	0.3 J	0.41 U	[10]
Fluoranthene	(mg/kg)	50	9.4 D	5.6	0.94	0.075 J	18
Benzo(k)fluoranthene	(mg/kg)	1.1	[1.4]	0.84	0.12 J	0.41 U	[5]
Acenaphthylene	(mg/kg)	41	0.82	0.72	0.34 J	0.41 U	3.6
Chrysene	(mg/kg)	0.4	[3.6]	[2.4]	[0.41] J	0.41 U	[10]
Total CAPAHs	(mg/kg)	10	[16.73]	[11.32]	1.857	0.00	[52.50]
Total PAHs	(mg/kg)	500	120.43	48.29	11.674	0.45	153.20

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-46 RPSB-46 (8-10) 12/20/1999 8.00	RPSB-46 RPSB-46 (35-37) 12/20/1999 35.00	RPSB-46 RPSB-46 (50-52) 12/20/1999 50.00	RPSB-47 RPSB-47 (5-7) 01/13/2000 5.00	RPSB-47 RPSB-47 (25-27) 01/13/2000 25.00
Benzo(a)pyrene	(mg/kg)	0.061	[48] D	0.41 U	0.42 U	[8.1]	[1.1]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[4]	0.41 U	0.42 U	3.5 U	[0.12] J
Benzo(a)anthracene	(mg/kg)	0.224	[45] D	0.41 U	0.42 U	[10]	[1.5]
Acenaphthene	(mg/kg)	50	[69] D	0.41 U	0.42 U	3.8	1.9
Phenanthrene	(mg/kg)	50	[200] D	0.15 J	0.06 J	20	8.2 D
Fluorene	(mg/kg)	50	45 D	0.41 U	0.42 U	8.3	2.8
Naphthalene	(mg/kg)	13	[220] D	0.41 U	0.42 U	4.7	0.36 U
2-Methylnaphthalene	(mg/kg)	36.4	[85] D	0.41 U	0.42 U	13	0.68 J
Anthracene	(mg/kg)	50	[54] D	0.41 U	0.42 U	6.6	1.9
Pyrene	(mg/kg)	50	14 D	0.1 J	0.42 U	48	3.7
Dibenzofuran	(mg/kg)	6.2	[6.2]	0.41 U	0.42 U	0.72 J	1.4
Benzo(g,h,i)perylene	(mg/kg)	50	23	0.41 U	0.42 U	3.5 J	0.46 J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[19]	0.41 U	0.42 U	2.8 J	0.13 J
Benzo(b)fluoranthene	(mg/kg)	1.1	[36] D	0.41 U	0.42 U	[7.8]	[1.1]
Fluoranthene	(mg/kg)	50	[76] D	0.062 J	0.42 U	16	3.8 D
Benzo(k)fluoranthene	(mg/kg)	1.1	[23] D	0.41 U	0.42 U	[2.6] J	0.36 J
Acenaphthylene	(mg/kg)	41	37 D	0.41 U	0.42 U	4.9	0.51 J
Chrysene	(mg/kg)	0.4	[38] D	0.41 U	0.42 U	[10]	[1.5]
Total CAPAHs	(mg/kg)	10	[213.00]	0.00	0.00	[41.30]	5.81
Total PAHs	(mg/kg)	500	[1042.20]	0.312	0.06	170.82	31.16

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-47 RPSB-47 (40-42) 01/14/2000 40.00	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-48 RPSB-48 (22-24) 01/24/2000 22.00	RPSB-48 RPSB-48 (45-47) 01/24/2000 45.00	RPSB-49 RPSB-49 (2-4) 12/08/1999 2.00
Benzo(a)pyrene	(mg/kg)	0.061	0.4 U	16 U	0.4 U	0.4 U	[4.2]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	16 U	0.4 U	0.4 U	1.8 U
Benzo(a)anthracene	(mg/kg)	0.224	0.4 U	16 U	0.4 U	0.4 U	[5.6]
Acenaphthene	(mg/kg)	50	0.4 U	16 U	0.4 U	0.4 U	1.8 U
Phenanthrene	(mg/kg)	50	0.4 U	5.4 J	0.4 U	0.4 U	11
Fluorene	(mg/kg)	50	0.4 U	1.9 J	0.4 U	0.4 U	1.1 J
Naphthalene	(mg/kg)	13	0.4 U	[200]	0.4 U	0.4 U	1.1 J
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	[41]	0.4 U	0.4 U	1.2 J
Anthracene	(mg/kg)	50	0.4 U	16 U	0.4 U	0.4 U	1 J
Pyrene	(mg/kg)	50	0.051 J	2.2 J	0.4 U	0.4 U	18
Dibenzofuran	(mg/kg)	6.2	0.4 U	16 U	0.4 U	0.4 U	1.8 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	16 U	0.4 U	0.4 U	2.3
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	16 U	0.4 U	0.4 U	1.9
Benzo(b)fluoranthene	(mg/kg)	1.1	0.4 U	16 U	0.4 U	0.4 U	[5]
Fluoranthene	(mg/kg)	50	0.041 J	16 U	0.4 U	0.4 U	7.8
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	16 U	0.4 U	0.4 U	[2.5]
Acenaphthylene	(mg/kg)	41	0.4 U	16 U	0.4 U	0.4 U	1 J
Chrysene	(mg/kg)	0.4	0.4 U	16 U	0.4 U	0.4 U	[4.5]
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	0.00	[23.70]
Total PAHs	(mg/kg)	500	0.092	250.50	0.00	0.00	68.20

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-49 RPSB-49 (8-10) 12/08/1999 8.00	RPSB-49 RPSB-49 (40-42) 12/08/1999 40.00	RPSB-49 RPSB-49 (50-52) 12/08/1999 50.00	RPSB-50 RPSB-50 (5-7) 12/09/1999 5.00	RPSB-50 RPSB-50 (7-9) 12/09/1999 7.00
Benzo(a)pyrene	(mg/kg)	0.061	[41] D	[0.25] J	[0.24] J	[1.7] J	[22]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[0.33] J	0.42 U	0.4 U	[0.74] J	[1.2] J
Benzo(a)anthracene	(mg/kg)	0.224	[55] D	[0.32] J	[0.31] J	[1.4] J	[17]
Acenaphthene	(mg/kg)	50	[85] D	0.57	0.44	2 U	14
Phenanthrene	(mg/kg)	50	[180] D	1.9	1.6	1.1 J	42 D
Fluorene	(mg/kg)	50	[81] D	0.49	0.43	2 U	12
Naphthalene	(mg/kg)	13	[350] D	0.058 J	0.09 J	1 J	[30]
2-Methylnaphthalene	(mg/kg)	36.4	[210] D	0.42 U	0.14 J	0.49 J	14
Anthracene	(mg/kg)	50	[74] D	0.57	0.48	0.34 J	12
Pyrene	(mg/kg)	50	[250] D	0.97	1	2.1	46 D
Dibenzofuran	(mg/kg)	6.2	6	0.052 J	0.4 U	2 U	2.8
Benzo(g,h,i)perylene	(mg/kg)	50	13	0.096 J	0.089 J	4.8	9.2
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[11]	0.086 J	0.07 J	3	[7.5]
Benzo(b)fluoranthene	(mg/kg)	1.1	[35] DJ	0.18 J	0.19 J	[3.8]	[19]
Fluoranthene	(mg/kg)	50	[110] D	0.67	0.55	0.81 J	25
Benzo(k)fluoranthene	(mg/kg)	1.1	[15]	0.11 J	0.061 J	[1.5] J	[5.4]
Acenaphthylene	(mg/kg)	41	13	0.11 J	0.12 J	0.46 J	3.3
Chrysene	(mg/kg)	0.4	[52] D	0.29 J	0.26 J	[1.8] J	[17]
Total CAPAHs	(mg/kg)	10	[209.33]	1.236	1.131	[13.94]	[89.10]
Total PAHs	(mg/kg)	500	[1581.33]	6.722	6.07	25.04	299.40

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-50 RBSB-50 (39-41) 12/10/1999 39.00	RPSB-50 RPSB-50 (55-57) 12/13/1999 55.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00	RPSB-51 RPSB-51 (10-12) 01/10/2000 10.00	RPSB-51 RPSB-51 (40-42) 01/11/2000 40.00
Benzo(a)pyrene	(mg/kg)	0.061	0.41 U	0.41 U	[27]	[71]	[0.71]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.41 U	0.41 U	[3.4] J	42 U	[0.069] J
Benzo(a)anthracene	(mg/kg)	0.224	0.41 U	0.044 J	[25]	[74]	[0.75]
Acenaphthene	(mg/kg)	50	0.41 U	0.045 J	7.3 U	[67]	0.48
Phenanthrene	(mg/kg)	50	0.076 J	0.26 J	25	[410]	4
Fluorene	(mg/kg)	50	0.41 U	0.045 J	3.1 J	[84]	0.77
Naphthalene	(mg/kg)	13	0.41 U	0.41 U	1.5 J	[540]	0.38 J
2-Methylnaphthalene	(mg/kg)	36.4	0.41 U	0.41 U	1.1 J	[250]	0.46
Anthracene	(mg/kg)	50	0.41 U	0.05 J	14	[140]	1
Pyrene	(mg/kg)	50	0.045 J	0.13 J	[65]	[250]	2.3
Dibenzofuran	(mg/kg)	6.2	0.41 U	0.41 U	7.3 U	[6.4] J	0.047 J
Benzo(g,h,i)perylene	(mg/kg)	50	0.41 U	0.41 U	20	35 J	0.37 J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.41 U	0.41 U	[14]	[28] J	0.3 J
Benzo(b)fluoranthene	(mg/kg)	1.1	0.41 U	0.41 U	[25]	[46]	0.54
Fluoranthene	(mg/kg)	50	0.41 U	0.09 J	40	[180]	1.7
Benzo(k)fluoranthene	(mg/kg)	1.1	0.41 U	0.41 U	[14]	[24] J	0.26 J
Acenaphthylene	(mg/kg)	41	0.41 U	0.41 U	4 J	24 J	0.24 J
Chrysene	(mg/kg)	0.4	0.41 U	0.044 J	[24]	[81]	[0.73]
Total CAPAHs	(mg/kg)	10	0.00	0.088	[132.40]	[324.00]	3.359
Total PAHs	(mg/kg)	500	0.121	0.708	306.10	[2310.40]	15.106

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-51 RPSB-51 (50-52) 01/11/2000 50.00	RPSB-52 RPSB-52 (6-8) 01/13/2000 6.00	RPSB-52 RPSB-52 (30-32) 01/14/2000 30.00	RPSB-52 RPSB-52 (42-44) 01/14/2000 42.00	RPSB-53 RPSB-53 (5-7) 02/02/2000 5.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.074] J	[1] J	0.4 U	0.42 U	[0.23] J
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.43 U	4.1 U	0.4 U	0.42 U	0.4 U
Benzo(a)anthracene	(mg/kg)	0.224	0.094 J	[1.6] J	0.4 U	0.42 U	[0.43]
Acenaphthene	(mg/kg)	50	0.076 J	4.1 U	0.4 U	0.42 U	0.37 J
Phenanthrene	(mg/kg)	50	0.62	11	0.15 J	0.42 U	3.2
Fluorene	(mg/kg)	50	0.11 J	4 J	0.4 U	0.42 U	1.2
Naphthalene	(mg/kg)	13	0.067 J	[390] D	0.4 U	0.42 U	0.83
2-Methylnaphthalene	(mg/kg)	36.4	0.071 J	[56]	0.4 U	0.42 U	0.35 J
Anthracene	(mg/kg)	50	0.11 J	1.9 J	0.4 U	0.42 U	0.42
Pyrene	(mg/kg)	50	0.31 J	4.9	0.4 U	0.42 U	1.4
Dibenzofuran	(mg/kg)	6.2	0.43 U	1 J	0.4 U	0.42 U	0.22 J
Benzo(g,h,i)perylene	(mg/kg)	50	0.43 U	0.66 J	0.4 U	0.42 U	0.27 J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.43 U	0.59 J	0.4 U	0.42 U	0.2 J
Benzo(b)fluoranthene	(mg/kg)	1.1	0.06 J	[1.4] J	0.4 U	0.42 U	0.36 J
Fluoranthene	(mg/kg)	50	0.22 J	3.1 J	0.4 U	0.42 U	1
Benzo(k)fluoranthene	(mg/kg)	1.1	0.029 J	4.1 U	0.4 U	0.42 U	0.13 J
Acenaphthylene	(mg/kg)	41	0.43 U	3 J	0.4 U	0.42 U	0.4 U
Chrysene	(mg/kg)	0.4	0.082 J	[1.7] J	0.4 U	0.42 U	[0.48]
Total CAPAHs	(mg/kg)	10	0.339	6.29	0.00	0.00	1.83
Total PAHs	(mg/kg)	500	1.923	481.85	0.15	0.00	11.09

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 6
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS(PAHs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-53 RPSB-53 (25-27) 02/02/2000 25.00	RPSB-53 RPSB-53 (39-41) 02/02/2000 39.00	RPSB-54 RPSB-54 (4-6) 01/12/2000 4.00	RPSB-54 RPSB-54 (12-14) 01/12/2000 12.00	RPSB-54 RPSB-54 (50-52) 01/13/2000 50.00
Benzo(a)pyrene	(mg/kg)	0.061	0.37 U	0.4 U	[0.69]	0.4 U	0.4 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.37 U	0.4 U	[0.24] J	0.4 U	0.4 U
Benzo(a)anthracene	(mg/kg)	0.224	0.37 U	0.4 U	[1.6]	0.4 U	0.4 U
Acenaphthene	(mg/kg)	50	0.37 U	0.4 U	0.33 U	0.4 U	0.4 U
Phenanthrene	(mg/kg)	50	0.37 U	0.18 J	0.72	0.4 U	0.4 U
Fluorene	(mg/kg)	50	0.37 U	0.047 J	0.26 J	0.4 U	0.4 U
Naphthalene	(mg/kg)	13	0.37 U	0.4 U	0.32 J	0.07 J	0.4 U
2-Methylnaphthalene	(mg/kg)	36.4	0.37 U	0.4 U	0.13 J	0.4 U	0.4 U
Anthracene	(mg/kg)	50	0.37 U	0.4 U	1	0.4 U	0.4 U
Pyrene	(mg/kg)	50	0.37 U	0.049 J	3	0.4 U	0.4 U
Dibenzofuran	(mg/kg)	6.2	0.37 U	0.4 U	0.33 U	0.4 U	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.37 U	0.4 U	0.77	0.4 U	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.37 U	0.4 U	0.71	0.4 U	0.4 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.37 U	0.4 U	[1.2]	0.4 U	0.4 U
Fluoranthene	(mg/kg)	50	0.37 U	0.4 U	1.1	0.4 U	0.4 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.37 U	0.4 U	0.64	0.4 U	0.4 U
Acenaphthylene	(mg/kg)	41	0.37 U	0.4 U	1.2	0.4 U	0.4 U
Chrysene	(mg/kg)	0.4	0.37 U	0.4 U	[1.7]	0.4 U	0.4 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	6.78	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.276	15.28	0.07	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-07 RPSB-07(15-17) 12/13/1999 15.00	RPSB-07 RPSB-07(27-29) 12/13/1999 27.00	RPSB-07 RPSB-07(39-41) 12/13/1999 39.00	RPSB-08 RPSB-08(15-17) 12/13/1999 15.00	RPSB-08 RPSB-08(30-32) 12/14/1999 30.00
Lead	(mg/kg)	500	1.5	0.71 B	0.93	4.3	0.76 B
Mercury	(mg/kg)	0.10	0.018 U	0.015 U	0.019 U	0.019 U	0.02 U
Silver	(mg/kg)		0.34 U	0.32 U	0.24 U	0.34 U	0.28 U
Arsenic	(mg/kg)	7.5	0.48 B	0.5 B	0.94	1.6	0.7 B
Barium	(mg/kg)	300	4.5 B	3.3 B	3.2 B	5.9 B	1.3 B
Cadmium	(mg/kg)	10	0.22 U	0.21 U	0.16 U	0.4 B	0.19 U
Chromium	(mg/kg)	50	3	1.1 B	3	4.3	1.8 B
Selenium	(mg/kg)	2	0.45 U	0.43 U	0.33 B	0.46 U	0.37 U
Cyanide	(mg/kg)		0.13 B	0.03 U	0.042 U	0.16 B	0.039 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-08 RPSB-08(40-42) 12/14/1999 40.00	RPSB-09 RPSB-09 (2-4) 01/07/2000 2.00	RPSB-09 RPSB-09 (20-22) 01/07/2000 20.00	RPSB-09 RPSB-09 (40-42) 01/07/2000 40.00	RPSB-10 RPSB-10 (4-6) 12/28/1999 4.00
Lead	(mg/kg)	500	0.72 B	173	1	0.79 B	29.9
Mercury	(mg/kg)	0.10	0.02 U	[1.1]	0.018 U	0.02 U	0.036 B
Silver	(mg/kg)		0.32 U	5.9	0.29 U	0.33 U	2.2 B
Arsenic	(mg/kg)	7.5	0.82 B	[40]	0.29 U	0.67 B	4.5
Barium	(mg/kg)	300	2 B	43.6	1.4 B	2.1 B	21.3 B
Cadmium	(mg/kg)	10	0.21 U	6.9	0.19 U	0.22 U	0.31 B
Chromium	(mg/kg)	50	1.4 B	21.3	1.3 B	5.9	7
Selenium	(mg/kg)	2	0.42 U	[73]	0.38 U	0.44 U	0.44 U
Cyanide	(mg/kg)		0.041 U	138	0.036 U	0.088 B	2.7

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-10 RPSB-10 (18-20) 12/28/1999 18.00	RPSB-10 RPSB-10 (50-52) 12/28/1999 50.00	RPSB-10 RPSB-10 (65-67) 12/29/1999 65.00	RPSB-11 RPSB-11 (15-17) 12/17/1999 15.00	RPSB-11 RPSB-11 (40-42) 12/17/1999 40.00
Lead	(mg/kg)	500	0.64 B	0.32 B	3 *	7.8	0.52 B
Mercury	(mg/kg)	0.10	0.021 U	0.019 U	0.02 U	0.017 U	0.019 U
Silver	(mg/kg)		0.35 U	0.3 U	0.35 U	0.36 B	0.29 U
Arsenic	(mg/kg)	7.5	0.35 U	0.64 B	0.35 U	1.6	0.72 B
Barium	(mg/kg)	300	1.3 B	2.3 B	26	12.9 B	2 B
Cadmium	(mg/kg)	10	0.24 U	0.2 U	0.25 B	0.21 B	0.19 U
Chromium	(mg/kg)	50	0.92 B	1.9 B	7.6 *	3.4	3
Selenium	(mg/kg)	2	0.47 U	0.4 U	[3.3]	0.41 U	0.38 U
Cyanide	(mg/kg)		0.036 U	0.032 U	0.033 UN	0.12 B	0.057 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-11 RPSB-11 (45-47) 12/17/1999 45.00	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-12 RPSB-12 (14-16) 12/27/1999 14.00	RPSB-12 RPSB-12 (50-52) 12/27/1999 50.00	RPSB-13 RPSB-13 (4-6) 01/13/2000 4.00
Lead	(mg/kg)	500	0.53 B	43.1	19.6	0.51 B	2.2 *
Mercury	(mg/kg)	0.10	0.02 U	0.055	0.041 B	0.021 U	0.017 U
Silver	(mg/kg)		0.34 U	2.7 B	0.8 B	0.31 U	0.29 U
Arsenic	(mg/kg)	7.5	0.92 B	[7.8]	4.4	0.67 B	0.51 B
Barium	(mg/kg)	300	2.2 B	15.6 B	4.7 B	1.6 B	3.3 B*
Cadmium	(mg/kg)	10	0.23 U	0.38 B	0.23 U	0.21 U	0.32 B
Chromium	(mg/kg)	50	2 B	5.3	2.9	1.7 B	1.8 B
Selenium	(mg/kg)	2	0.45 U	0.4 U	0.48 B	0.41 U	0.38 U
Cyanide	(mg/kg)		0.11 B	1.5	2.5	0.034 U	0.039 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-13 RPSB-13 (30-32) 01/13/2000 30.00	RPSB-13 RPSB-13 (38-40) 01/14/2000 38.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-14 RPSB-14 (6-8) 12/13/1999 6.00	RPSB-14 RPSB-14 (30-32) 12/13/1999 30.00
Lead	(mg/kg)	500	1.8 *	0.68 B	9	1.1	0.71 B
Mercury	(mg/kg)	0.10	0.019 U	0.018 U	[1.8]	0.018 U	0.02 U
Silver	(mg/kg)		0.29 U	0.31 U	0.41 B	0.32 U	0.34 U
Arsenic	(mg/kg)	7.5	0.29 U	0.94 B	4.9	0.61 B	0.7 B
Barium	(mg/kg)	300	2.5 B*	1.8 B	137	2.6 B	3.7 B
Cadmium	(mg/kg)	10	0.19 U	0.21 U	0.5 B	0.21 U	0.22 U
Chromium	(mg/kg)	50	2.1	1.5 B	4.3	2.8	2.4
Selenium	(mg/kg)	2	0.39 U	0.41 U	[5.8]	0.62 B	0.45 U
Cyanide	(mg/kg)		0.079 B	0.27 B	10.4	2.4 B	0.033 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-14 RPSB-14 (40-42) 12/13/1999 40.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-15 RPSB-15 (7-9) 12/15/1999 7.00	RPSB-15 RPSB-15 (25-27) 12/15/1999 25.00	RPSB-15 RPSB-15 (40-42) 12/15/1999 40.00
Lead	(mg/kg)	500	0.59 B	36.8	11.5	0.7 B	0.7 B
Mercury	(mg/kg)	0.10	0.019 U	0.05	0.019 U	0.019 U	0.016 U
Silver	(mg/kg)		0.29 U	0.88 B	0.32 U	0.27 U	0.24 U
Arsenic	(mg/kg)	7.5	1.1	1.6	0.98 B	0.41 B	0.55 B
Barium	(mg/kg)	300	2.1 B	25.4	6.8 B	1.7 B	2.1 B
Cadmium	(mg/kg)	10	0.19 U	0.51	0.22 B	0.18 U	0.16 U
Chromium	(mg/kg)	50	1.3 B	2.6	4.2	1.3 B	1.9
Selenium	(mg/kg)	2	0.38 U	0.37 U	0.42 U	0.36 U	0.32 U
Cyanide	(mg/kg)		0.037 U	2.1	4.8	0.13 B	0.036 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-16 RPSB-16 (4-6) 12/03/1999 4.00	RPSB-16 RPSB-16 (6-8) 12/03/1999 6.00	RPSB-16 RPSB-16 (30-32) 12/07/1999 30.00	RPSB-16 RPSB-16 (50-52) 12/07/1999 50.00	RPSB-17 RPSB-17 (5-7) 12/07/1999 5.00
Lead	(mg/kg)	500	9.3	70.9	0.96 B	1.1	12.5
Mercury	(mg/kg)	0.10	0.087	0.016 U	0.019 U	0.019 U	0.019 U
Silver	(mg/kg)		0.34 B	0.92 B	0.36 U	0.3 U	0.35 B
Arsenic	(mg/kg)	7.5	0.9	4	0.36 U	0.54 B	1.3
Barium	(mg/kg)	300	6.2 B	27.3 E	1.9 B	2.9 B	2 B
Cadmium	(mg/kg)	10	0.26 B	1	0.24 U	0.2 U	1.2
Chromium	(mg/kg)	50	2.3	5.6	2.1 B	5.5	1.7 B
Selenium	(mg/kg)	2	1.5 B	[3.3]	0.47 U	0.4 U	[7.1]
Cyanide	(mg/kg)		6	25.3	0.11 B	0.046 U	4

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-17 RPSB-17 (35-37) 12/07/1999 35.00	RPSB-17 RPSB-17 (50-52) 12/08/1999 50.00	RPSB-18 RPSB-18 (4-6) 12/08/1999 4.00	RPSB-18 RPSB-18 (10-12) 12/08/1999 10.00	RPSB-18 RPSB-18 (80-82) 12/09/1999 80.00
Lead	(mg/kg)	500	1.1 B	9.2	2.5	1.8	3.6
Mercury	(mg/kg)	0.10	0.02 U	0.02 U	0.016 U	0.019 U	0.046 B
Silver	(mg/kg)		0.36 U	0.5 B	0.38 B	0.35 U	0.68 B
Arsenic	(mg/kg)	7.5	0.6 B	0.55 B	1.4	0.35 U	0.56 B
Barium	(mg/kg)	300	2.6 B	17.9 B	4.1 B	1.6 B	20.4 B
Cadmium	(mg/kg)	10	0.24 U	0.24 B	0.37 B	0.23 U	0.82
Chromium	(mg/kg)	50	2.8	2.3	5	1.8 B	7.7
Selenium	(mg/kg)	2	0.48 U	0.43 U	0.44 U	0.5 B	0.46 U
Cyanide	(mg/kg)		0.046 U	0.18 B	0.75 B	0.15 B	0.06 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-18 RPSB-18 (85-87) 12/09/1999 85.00	RPSB-19 RPSB-19 (4-6) 12/30/1999 4.00	RPSB-19 RPSB-19 (30-32) 01/03/2000 30.00	RPSB-19 RPSB-19 (45-47) 01/03/2000 45.00	RPSB-20 RPSB-20 (2-4) 12/20/1999 2.00
Lead	(mg/kg)	500	5.5	150	0.87 B	0.7 B	32.9
Mercury	(mg/kg)	0.10	0.026 B	[0.45]	0.037 B	0.02 U	0.02 U
Silver	(mg/kg)		0.9 B	5.8	0.36 U	0.3 U	0.43 B
Arsenic	(mg/kg)	7.5	0.64 B	[15.4]	0.36 U	0.42 B	4
Barium	(mg/kg)	300	47.6	34.9 E	3.1 B	1.7 B	72.6
Cadmium	(mg/kg)	10	1.4	1.3	0.24 U	0.2 U	0.47 B
Chromium	(mg/kg)	50	15.7	16.5	3.2	1.6 B	6.8
Selenium	(mg/kg)	2	0.49 U	[3.5]	0.48 U	0.45 B	[2.7] B
Cyanide	(mg/kg)		0.044 U	2.8	0.045 U	0.058 B	1.5

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-20 RPSB-20 (25-27) 12/20/1999 25.00	RPSB-20 RPSB-20 (40-42) 12/20/1999 40.00	RPSB-21 RPSB-21 (7-9) 12/15/1999 7.00	RPSB-21 RPSB-21 (23-25) 12/15/1999 23.00	RPSB-21 RPSB-21 (39-41) 12/15/1999 39.00
Lead	(mg/kg)	500	0.55 B	0.47 B	1.1	0.5 B	0.68 B
Mercury	(mg/kg)	0.10	0.019 U	0.021 U	0.019 U	0.018 U	0.017 U
Silver	(mg/kg)		0.28 U	0.26 U	0.29 U	0.31 U	0.3 U
Arsenic	(mg/kg)	7.5	0.28 U	0.26 U	0.56 B	0.31 U	1
Barium	(mg/kg)	300	1.2 B	1.8 B	4.4 B	2 B	1.7 B
Cadmium	(mg/kg)	10	0.19 U	0.17 U	0.19 U	0.21 U	0.2 U
Chromium	(mg/kg)	50	1 B	2.2	3.2	1 B	2.5
Selenium	(mg/kg)	2	0.37 U	0.35 U	0.47 B	0.42 U	0.4 U
Cyanide	(mg/kg)		0.081 B	0.19 B	0.66	0.28 B	0.037 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-22 RPSB-22 (4-6) 12/01/1999 4.00	RPSB-22 RPSB-22 (8-10) 12/01/1999 8.00	RPSB-22 RPSB-22 (60-62) 12/02/1999 60.00	RPSB-22 RPSB-22 (80-82) 12/02/1999 80.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00
Lead	(mg/kg)	500	1.9	3	1.3	3.5	25.9
Mercury	(mg/kg)	0.10	0.019 U	0.02 U	0.02 U	0.019 U	0.074
Silver	(mg/kg)		0.32 U	0.33 U	0.35 B	0.67 B	0.63 B
Arsenic	(mg/kg)	7.5	0.72 B	0.33 U	0.55 B	0.52 B	2.4
Barium	(mg/kg)	300	3.2 B	2.4 B	7.5 B	30.5	7.4 B
Cadmium	(mg/kg)	10	0.22 U	0.22 U	0.38 B	0.94	0.23 U
Chromium	(mg/kg)	50	1.7 B	1.6 B	4.8	9.3	5
Selenium	(mg/kg)	2	0.43 U	0.44 U	1 B	[2.9]	0.63 B
Cyanide	(mg/kg)		1.2	0.045 B	0.047 B	0.081 B	1.5

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-23 RPSB-23 (12-14) 01/04/2000 12.00	RPSB-23 RPSB-23 (36-38) 01/06/2000 36.00	RPSB-23 RPSB-23 (48-50) 01/06/2000 48.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00	RPSB-24 RPSB-24 (5-7) 01/10/2000 5.00
Lead	(mg/kg)	500	3.9	0.86 B	0.74 B	95	1.1
Mercury	(mg/kg)	0.10	0.019 U	0.02 U	0.02 U	[0.2]	0.019 U
Silver	(mg/kg)		0.36 U	0.3 U	0.34 U	1 B	0.31 U
Arsenic	(mg/kg)	7.5	0.5 B	0.67 B	0.64 B	5.4	0.49 B
Barium	(mg/kg)	300	2.5 B	1.5 B	2.9 B	44.9	2.2 B
Cadmium	(mg/kg)	10	0.24 U	0.2 U	0.22 U	1.7	0.2 U
Chromium	(mg/kg)	50	1.8 B	2.8	2.3	4.9	1.5 B
Selenium	(mg/kg)	2	0.48 B	0.86 B	0.7 B	0.41 U	0.93 B
Cyanide	(mg/kg)		0.06 U	0.045 U	0.058 U	0.88	0.2 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-24 RPSB-24 (30-32) 01/11/2000 30.00	RPSB-24 RPSB-24 (50-52) 01/11/2000 50.00	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-25 RPSB-25 (6-8) 12/21/1999 6.00	RPSB-25 RPSB-25 (40-42) 12/21/1999 40.00
Lead	(mg/kg)	500	0.8 B	0.74 B	153	103	0.59 B
Mercury	(mg/kg)	0.10	0.019 U	0.019 U	0.021 U	0.038 B	0.019 U
Silver	(mg/kg)		0.29 U	0.36 U	0.52 B	0.34 B	0.29 U
Arsenic	(mg/kg)	7.5	0.96 B	0.76 B	3.5	1.9	0.31 B
Barium	(mg/kg)	300	5 B	1.7 B	41.7	19.6 B	2.4 B
Cadmium	(mg/kg)	10	0.19 U	0.24 U	0.35 B	0.24 B	0.2 U
Chromium	(mg/kg)	50	4.2	3.2	6.1	3.6	1.4 B
Selenium	(mg/kg)	2	0.39 U	0.5 B	[4.3]	[3.3]	0.39 U
Cyanide	(mg/kg)		0.049 B	0.1 B	2.6	1.3	0.093 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-25 RPSB-25 (50-52) 12/21/1999 50.00	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-26 RPSB-26 (13-15) 01/19/2000 13.00	RPSB-26 RPSB-26 (38-40) 01/19/2000 38.00	RPSB-27 RPSB27(2-4) 12/16/1999 2.00
Lead	(mg/kg)	500	0.5 B	5.5	0.35 B	0.81 B	5.4
Mercury	(mg/kg)	0.10	0.02 U	0.017 U	0.02 U	0.02 U	0.018 U
Silver	(mg/kg)		0.3 U	0.97 B	0.56 B	0.35 B	0.32 U
Arsenic	(mg/kg)	7.5	0.63 B	1.2	0.8 B	0.36 B	1.3
Barium	(mg/kg)	300	1.8 B	6.5 B	2.3 B	1.8 B	9.4 B
Cadmium	(mg/kg)	10	0.2 U	0.36 B	0.19 U	0.19 U	0.27 B
Chromium	(mg/kg)	50	1.6 B	5.7	3.3	1.7 B	4.4
Selenium	(mg/kg)	2	0.39 U	0.46 B	0.37 U	0.39 U	0.43 U
Cyanide	(mg/kg)		0.12 B	0.9	0.28 B	0.18 B	0.4 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-27 RPSB27(10-12) 12/16/1999 10.00	RPSB-27 RPSB-27 (40-42) 12/17/1999 40.00	RPSB-28 RPSB-28 (2-4) 12/29/1999 2.00	RPSB-28 RPSB-28 (4-6) 12/29/1999 4.00	RPSB-28 RPSB-28 (38-40) 12/30/1999 38.00
Lead	(mg/kg)	500	12.6	0.99 B	56.8 *	130 *	0.55 B
Mercury	(mg/kg)	0.10	0.018 B	0.018 U	0.032 B*	0.076 *	0.02 U
Silver	(mg/kg)		0.31 U	0.32 U	0.28 U	0.32 U	0.27 U
Arsenic	(mg/kg)	7.5	1.5	1 B	3.2	4.7	0.85 B
Barium	(mg/kg)	300	5.4 B	1.8 B	34	19 B	2.7 B
Cadmium	(mg/kg)	10	0.21 U	0.22 U	0.67	0.83	0.18 U
Chromium	(mg/kg)	50	2.7	1.6 B	5.5 *	20.3 *	2
Selenium	(mg/kg)	2	1.1 B	0.43 U	[7.1]	[3.9]	0.36 U
Cyanide	(mg/kg)		0.1 B	0.043 U	5.7 N	7.9 N	0.047 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-28 RPSB-28 (48-50) 12/30/1999 48.00	RPSB-29 RBSB-29 (5-7) 12/10/1999 5.00	RPSB-29 RPSB-29 (55-57) 02/02/2000 55.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-29 RPSB-29 (35-37) 02/03/2000 35.00
Lead	(mg/kg)	500	0.52 B	0.78 B	0.19 U	0.76 B*	0.43 B*
Mercury	(mg/kg)	0.10	0.02 U	0.016 U	0.017 U	0.02 U	0.019 U
Silver	(mg/kg)		0.33 U	0.48 B	0.26 B	0.26 B	0.21 U
Arsenic	(mg/kg)	7.5	0.72 B	0.33 B	1.1 B	0.62 B	0.42 U
Barium	(mg/kg)	300	2.7 B	2.3 B	2.4 B	2.1 B	1.6 B
Cadmium	(mg/kg)	10	0.22 U	0.21 U	0.13 B	0.091 B	0.065 B
Chromium	(mg/kg)	50	1.6 B	2.3	2.2	1.9 B	2 B
Selenium	(mg/kg)	2	0.58 B	0.42 U	0.33 U	0.39 U	0.42 U
Cyanide	(mg/kg)		0.052 U	0.055 U	0.066 U	0.23 B	0.081 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-29 RPSB-29(134-136 02/25/2000 134.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00	RPSB-30 RPSB-30 (19-21) 02/01/2000 19.00	RPSB-30 RPSB-30 (60-62) 02/02/2000 60.00	RPSB-31A RPSB-31A (2-4) 01/04/2000 2.00
Lead	(mg/kg)	500	---	0.36 B	0.33 B	0.23 U	448
Mercury	(mg/kg)	0.10	---	0.019 U	0.02 U	0.019 U	[1.2]
Silver	(mg/kg)		---	0.31 U	0.3 U	0.31 B	3.9
Arsenic	(mg/kg)	7.5	---	0.31 U	0.3 U	0.72 B	[9.1]
Barium	(mg/kg)	300	---	1.1 B	1.9 B	1.8 B	261
Cadmium	(mg/kg)	10	---	0.21 U	0.2 U	0.093 B	2.2
Chromium	(mg/kg)	50	---	0.89 B	3.5	2.1	14.9
Selenium	(mg/kg)	2	---	0.42 U	0.4 U	0.4 U	1.9
Cyanide	(mg/kg)		0.13 B	0.099 B	0.093 U	0.083 U	9.2

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-31A RPSB-31A (4-6) 01/04/2000 4.00	RPSB-31A RPSB-31A(35-37) 01/04/2000 35.00	RPSB-31A SB-31A(133-135) 03/10/2000 133.00	RPSB-31B RPSB-31B (4-6) 01/11/2000 4.00	RPSB-31B RPSB-31B (6-8) 01/11/2000 6.00
Lead	(mg/kg)	500	134	1.2	2.2	1.9	8.8
Mercury	(mg/kg)	0.10	[0.21]	0.018 U	0.016 U	0.017 U	0.024 B
Silver	(mg/kg)		2.8	0.32 U	0.27 B	0.28 U	0.32 U
Arsenic	(mg/kg)	7.5	4.9	0.84 B	1.4	0.5 B	1.1
Barium	(mg/kg)	300	75.8	3.7 B	6.5 B	2 B	2.9 B
Cadmium	(mg/kg)	10	1.5	0.21 U	0.11 B	0.19 U	0.27 B
Chromium	(mg/kg)	50	6.3	1.7 B	2.7	1.9 B	1.9 B
Selenium	(mg/kg)	2	0.66 B	0.43 U	0.31 U	0.38 U	0.43 U
Cyanide	(mg/kg)		4.7	0.05 B	0.22 U	0.063 B	0.052 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-31B RPSB-31B(22-24) 01/12/2000 22.00	RPSB-31B RPSB-31B(48-50) 01/13/2000 48.00	RPSB-32 RPSB-32 (2-4) 12/21/1999 2.00	RPSB-32 RPSB-32 (25-27) 12/21/1999 25.00	RPSB-32 RPSB-32 (40-42) 12/21/1999 40.00
Lead	(mg/kg)	500	0.55 B	0.91	91.9	0.71 B	0.89 B
Mercury	(mg/kg)	0.10	0.018 U	0.02 U	0.059	0.015 U	0.018 U
Silver	(mg/kg)		0.24 U	0.27 U	0.34 B	0.26 U	0.28 U
Arsenic	(mg/kg)	7.5	0.24 U	0.4 B	1.6	0.26 U	0.81 B
Barium	(mg/kg)	300	1.2 B	1.7 B	23.4	1.8 B	1.9 B
Cadmium	(mg/kg)	10	0.16 U	0.18 U	0.31 B	0.17 U	0.19 U
Chromium	(mg/kg)	50	1.1 B	3.4	3.5	2.5	1.5 B
Selenium	(mg/kg)	2	0.32 U	0.35 U	[4]	0.34 U	0.37 U
Cyanide	(mg/kg)		0.13 B	0.21 B	8	0.047 U	0.12 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00	RPSB-33 RPSB-33 (15-17) 12/22/1999 15.00	RPSB-33 RPSB-33 (45-47) 12/22/1999 45.00	RPSB-34 RPSB-34 (8-10) 12/29/1999 8.00	RPSB-34 RPSB-34 (40-42) 12/29/1999 40.00
Lead	(mg/kg)	500	26.7	1.6	2.2	1.7	0.47 B
Mercury	(mg/kg)	0.10	0.017 B	0.017 U	0.019 U	0.019 U	0.021 U
Silver	(mg/kg)		1.7 B	0.39 B	0.28 B	0.35 B	0.36 U
Arsenic	(mg/kg)	7.5	0.61 B	0.47 B	0.36 B	0.49 B	0.84 B
Barium	(mg/kg)	300	51.9	1.9 B	3 B	2.1 B	1.9 B
Cadmium	(mg/kg)	10	1.3	0.17 U	0.23 B	0.22 U	0.24 U
Chromium	(mg/kg)	50	17.3	11.7	2.7	1.7 B	2.6
Selenium	(mg/kg)	2	[16.5]	0.83 B	0.76 B	0.44 B	0.48 U
Cyanide	(mg/kg)		2.8	0.21 B	0.096 B	0.075 B	0.038 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-34 RPSB-34 (80-82) 12/30/1999 80.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-35 RPSB-35 (10-12) 01/03/2000 10.00	RPSB-35 RPSB-35 (60-62) 01/03/2000 60.00	RPSB-35 RPSB-35 (80-82) 01/04/2000 80.00
Lead	(mg/kg)	500	1.8	30.2	0.46 B	0.3 U	1.9
Mercury	(mg/kg)	0.10	0.02 U	0.051	0.019 U	0.016 U	0.02 U
Silver	(mg/kg)		2 B	0.85 B	0.31 U	0.3 U	1.6 B
Arsenic	(mg/kg)	7.5	1.8 B	1.8	0.53 B	0.63 B	1.4
Barium	(mg/kg)	300	61.1 E	16.4 E	1.5 B	2.4 B	14.4 B
Cadmium	(mg/kg)	10	0.35 B	0.25 B	0.21 U	0.2 U	0.62
Chromium	(mg/kg)	50	18.2	4.7	1.2 B	4.2	7.8
Selenium	(mg/kg)	2	0.55 B	0.29 U	0.6 B	0.4 U	0.51 B
Cyanide	(mg/kg)		0.045 U	0.072 B	0.034 U	0.055 U	0.061 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-36 RPSB-36 (5-7) 01/03/2000 5.00	RPSB-36 RPSB-36 (7-9) 01/03/2000 7.00	RPSB-36 RPSB-36 (35-37) 01/03/2000 35.00	RPSB-36 RPSB-36 (55-57) 01/04/2000 55.00	RPSB-37 RPSB-37 (10-12) 01/12/2000 10.00
Lead	(mg/kg)	500	52.5	3.6	0.63 B	0.97 B	3.9
Mercury	(mg/kg)	0.10	0.045 B	0.019 U	0.02 U	0.021 U	0.055 B
Silver	(mg/kg)		0.49 B	0.48 B	0.27 U	0.35 U	0.32 U
Arsenic	(mg/kg)	7.5	1 B	1.1 B	0.9 B	0.89 B	0.32 U
Barium	(mg/kg)	300	9.6 B	10.6 B	5.3 B	1.7 B	2.3 B
Cadmium	(mg/kg)	10	0.21 U	0.22 U	0.18 U	0.24 U	0.22 U
Chromium	(mg/kg)	50	2.6	2.1 B	2.6	2.5	2 B
Selenium	(mg/kg)	2	0.68 B	0.62 B	0.36 U	0.47 U	1.2 B
Cyanide	(mg/kg)		0.052 U	0.046 U	0.05 U	0.053 U	0.12 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-37 RPSB-37 (35-37) 01/12/2000 35.00	RPSB-37 RPSB-37 (50-52) 01/12/2000 50.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-38 RPSB-38 (10-12) 01/13/2000 10.00	RPSB-38 RPSB-38 (30-32) 01/13/2000 30.00
Lead	(mg/kg)	500	0.9 B	0.87 B	4.2 *	1.2	1.6 *
Mercury	(mg/kg)	0.10	0.021 U	0.019 U	0.026 B	0.02 U	0.019 U
Silver	(mg/kg)		0.37 U	0.31 U	0.29 B	0.33 U	0.23 U
Arsenic	(mg/kg)	7.5	0.37 U	0.32 B	1.2	0.33 U	1.2
Barium	(mg/kg)	300	1.9 B	1.5 B	16.2 B*	1.5 B	2.1 B*
Cadmium	(mg/kg)	10	0.24 U	0.21 U	0.27 B	0.22 U	0.23 B
Chromium	(mg/kg)	50	2.3 B	2.4	1.6 B	1.5 B	2.1
Selenium	(mg/kg)	2	0.49 U	0.42 U	1.9	0.79 B	0.3 U
Cyanide	(mg/kg)		0.28 B	0.27 B	0.93 B	0.29 B	0.17 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-38 RPSB-38 (50-52) 01/13/2000 50.00	RPSB-39 RPSB-39 (2-4) 02/01/2000 2.00	RPSB-39 RPSB-39 (25-27) 02/01/2000 25.00	RPSB-39 RPSB-39 (42-44) 02/01/2000 42.00	RPSB-40 RPSB-40 (19-21) 01/20/2000 19.00
Lead	(mg/kg)	500	1.5 *	322	1.1	0.36 B	0.92 B
Mercury	(mg/kg)	0.10	0.018 U	0.032 B	0.018 U	0.02 U	0.017 U
Silver	(mg/kg)		0.32 U	0.28 U	0.26 U	0.3 U	0.37 B
Arsenic	(mg/kg)	7.5	0.61 B	1 B	0.26 U	0.81 B	0.74 B
Barium	(mg/kg)	300	2.1 B*	7.6 B	1.3 B	1.5 B	1.7 B
Cadmium	(mg/kg)	10	0.21 U	0.19 U	0.18 U	0.2 U	0.22 U
Chromium	(mg/kg)	50	2 B	20.7	2.6	3.3	2.2
Selenium	(mg/kg)	2	0.43 U	0.38 U	0.35 U	0.4 U	0.43 U
Cyanide	(mg/kg)		0.18 B	2.1	0.12 B	0.1 U	0.31 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-40 RPSB-40 (26-28) 01/20/2000 26.00	RPSB-40 RPSB-40 (38-40) 01/20/2000 38.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-41 RPSB-41 (9-11) 12/16/1999 9.00	RPSB-41 RPSB-41 (45-47) 12/16/1999 45.00
Lead	(mg/kg)	500	0.97 B	0.47 B	6.1	1.6	4.8
Mercury	(mg/kg)	0.10	0.017 U	0.02 U	0.018 U	0.019 U	0.025 U
Silver	(mg/kg)		0.31 U	0.25 U	0.33 U	0.32 U	0.44 U
Arsenic	(mg/kg)	7.5	0.38 B	0.86	0.74 B	0.32 U	1.8
Barium	(mg/kg)	300	1.6 B	1.5 B	4.2 B	3.5 B	39.3
Cadmium	(mg/kg)	10	0.21 U	0.17 U	0.22 U	0.21 U	0.29 U
Chromium	(mg/kg)	50	2.2	1.8	1.6 B	2.4	1.7 B
Selenium	(mg/kg)	2	0.41 U	0.33 U	0.44 U	0.42 U	0.59 U
Cyanide	(mg/kg)		0.18 B	0.22 B	0.42 B	0.62 B	0.62 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00	RPSB-42 RPSB-42 (10-12) 01/19/2000 10.00	RPSB-42 RPSB-42 (35-37) 01/24/2000 35.00	RPSB-42 RPSB-42(124-126 02/29/2000 124.00	RPSB-43 RPSB-43 (5-7) 12/01/1999 5.00
Lead	(mg/kg)	500	16.7	3.6	0.98 B	8.8	301
Mercury	(mg/kg)	0.10	0.017 U	0.018 U	0.018 U	0.019 U	[0.2]
Silver	(mg/kg)		0.29 U	0.3 U	0.38 U	0.23 U	0.96 B
Arsenic	(mg/kg)	7.5	0.57 B	0.53 B	0.74 B	4	4.2
Barium	(mg/kg)	300	5.1 B	4.3 B	2.4 B	52.9	38.8
Cadmium	(mg/kg)	10	0.19 U	0.2 U	0.26 U	0.045 U	1.4
Chromium	(mg/kg)	50	2.3	2.9	2.3 B	12.7	7.8
Selenium	(mg/kg)	2	0.39 U	0.4 U	0.98 B	0.45 U	0.41 U
Cyanide	(mg/kg)		2.7	0.35 B	0.24 B	0.11 U	1.9

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-43 RPSB-43 (9-11) 12/01/1999 9.00	RPSB-43 RPSB-43 (45-47) 12/02/1999 45.00	RPSB-43 RPSB-43 (95-97) 12/03/1999 95.00	RPSB-44 RPSB-44 (10-12) 12/03/1999 10.00	RPSB-44 RPSB-44 (65-67) 12/06/1999 65.00
Lead	(mg/kg)	500	23	1	5.1	5.5	1
Mercury	(mg/kg)	0.10	0.02 B	0.019 U	0.02 U	0.018 U	0.018 U
Silver	(mg/kg)		0.7 B	0.29 U	1.2 B	0.26 U	0.27 U
Arsenic	(mg/kg)	7.5	4.6	0.83 B	1.3	0.63 B	0.57 B
Barium	(mg/kg)	300	87.6	2.4 B	30.3 E	5.3 B	2.7 B
Cadmium	(mg/kg)	10	1.4	0.46 B	1.6	0.22 B	0.18 B
Chromium	(mg/kg)	50	13.2	4.5	11.7	2	3
Selenium	(mg/kg)	2	0.42 U	0.39 U	[5.9]	0.35 U	0.35 U
Cyanide	(mg/kg)		2.3	0.091 B	0.071 B	0.19 B	0.055 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-44 RPSB-44(149-151 03/15/2000 149.00	RPSB-45 RPSB-45 (6-8) 01/07/2000 6.00	RPSB-45 RPSB-45 (25-27) 01/07/2000 25.00	RPSB-45 RPSB-45 (40-42) 01/07/2000 40.00	RPSB-45 RPSB-45 (50-52) 01/07/2000 50.00
Lead	(mg/kg)	500	1.7	15.6	0.62 B	0.83 B	0.68 B
Mercury	(mg/kg)	0.10	0.021 U	[0.15]	0.016 U	0.018 U	0.02 U
Silver	(mg/kg)		0.32 B	0.61 B	0.25 U	0.34 U	0.33 U
Arsenic	(mg/kg)	7.5	0.91	6.2	0.25 U	0.7 B	0.64 B
Barium	(mg/kg)	300	10.1 B	51.5	1.9 B	2.9 B	1.3 B
Cadmium	(mg/kg)	10	0.12 B	0.35 B	0.16 U	0.23 U	0.22 U
Chromium	(mg/kg)	50	2.2	5.1	1.8	2.1 B	2.2 B
Selenium	(mg/kg)	2	0.32 U	0.47 U	0.33 U	1.2 B	0.44 U
Cyanide	(mg/kg)		0.15 U	0.42 B	0.042 U	0.049 U	0.051 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-46 RPSB-46 (4-6) 12/20/1999 4.00	RPSB-46 RPSB-46 (8-10) 12/20/1999 8.00	RPSB-46 RPSB-46 (35-37) 12/20/1999 35.00	RPSB-46 RPSB-46 (50-52) 12/20/1999 50.00	RPSB-47 RPSB-47 (5-7) 01/13/2000 5.00
Lead	(mg/kg)	500	160	3.6	0.87 B	0.63 B	11.5
Mercury	(mg/kg)	0.10	[0.46]	0.019 U	0.018 U	0.017 U	0.032 B
Silver	(mg/kg)		1.5 B	0.77 B	0.47 B	0.3 B	0.23 U
Arsenic	(mg/kg)	7.5	4.3	0.61 B	1.2	0.46 B	0.23 U
Barium	(mg/kg)	300	269	8.2 B	3.8 B	2 B	6.1 B
Cadmium	(mg/kg)	10	1.5	0.23 U	0.22 U	0.18 U	0.15 U
Chromium	(mg/kg)	50	12.1	2.2 B	2.4	2.6	2.8
Selenium	(mg/kg)	2	0.45 U	0.46 U	0.44 U	0.37 U	0.36 B
Cyanide	(mg/kg)		1.5	1.3	0.82	1.1	0.56 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-47 RPSB-47 (25-27) 01/13/2000 25.00	RPSB-47 RPSB-47 (40-42) 01/14/2000 40.00	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-48 RPSB-48 (22-24) 01/24/2000 22.00	RPSB-48 RPSB-48 (45-47) 01/24/2000 45.00
Lead	(mg/kg)	500	1.2	2.7	20.2	1.2	0.84 B
Mercury	(mg/kg)	0.10	0.018 U	0.019 U	0.019 U	0.018 U	0.21 U
Silver	(mg/kg)		0.29 U	0.24 U	0.32 U	0.31 U	0.35 U
Arsenic	(mg/kg)	7.5	0.42 B	0.96	0.88 B	0.31 U	0.35 U
Barium	(mg/kg)	300	1.2 B	1.8 B	4.6 B	1.3 B	1.9 B
Cadmium	(mg/kg)	10	0.2 U	0.16 U	0.21 U	0.21 U	0.23 U
Chromium	(mg/kg)	50	3.3	2.1	3.5	3.4	2.9
Selenium	(mg/kg)	2	0.39 U	0.85 B	0.42 U	0.41 U	0.47 U
Cyanide	(mg/kg)		0.13 B	0.25 B	0.29 B	0.22 B	0.24 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-49 RPSB-49 (2-4) 12/08/1999 2.00	RPSB-49 RPSB-49 (8-10) 12/08/1999 8.00	RPSB-49 RPSB-49 (40-42) 12/08/1999 40.00	RPSB-49 RPSB-49 (50-52) 12/08/1999 50.00	RPSB-50 RPSB-50 (5-7) 12/09/1999 5.00
Lead	(mg/kg)	500	122	32.2	1	1.8	217
Mercury	(mg/kg)	0.10	[0.16]	0.017 U	0.022 U	0.018 U	[0.35]
Silver	(mg/kg)		0.57 B	0.46 B	0.29 U	0.34 U	1 B
Arsenic	(mg/kg)	7.5	2.1	2.1	0.66 B	0.34 U	5.4
Barium	(mg/kg)	300	51.6	18.6	2.7 B	3.7 B	95.5
Cadmium	(mg/kg)	10	0.88	0.96	0.19 U	0.23 U	1.5
Chromium	(mg/kg)	50	9.6	1.8 B	5.4	3.4	5.7
Selenium	(mg/kg)	2	0.37 U	[4.9]	0.38 U	0.45 U	[9]
Cyanide	(mg/kg)		0.87 B	3.2	0.29 B	0.064 B	0.79 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-50 RPSB-50 (7-9) 12/09/1999 7.00	RPSB-50 RBSB-50 (39-41) 12/10/1999 39.00	RPSB-50 RPSB-50 (55-57) 12/13/1999 55.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00	RPSB-51 RPSB-51 (10-12) 01/10/2000 10.00
Lead	(mg/kg)	500	22.3	0.63 B	0.73 B	147	8.2
Mercury	(mg/kg)	0.10	[0.14]	0.02 U	0.019 U	[0.13]	0.024 B
Silver	(mg/kg)		3.7	0.5 B	0.26 U	0.52 B	0.4 B
Arsenic	(mg/kg)	7.5	1.2	1 B	0.91	4	1.6
Barium	(mg/kg)	300	16.6 B	8.9 B	2.8 B	9.5 B	8.6 B
Cadmium	(mg/kg)	10	1.1	0.23 U	0.17 U	0.47 B	0.43 B
Chromium	(mg/kg)	50	2.6	4.6	3.6	2.7	4.2
Selenium	(mg/kg)	2	[2]	0.47 U	0.34 U	1.4 B	0.43 U
Cyanide	(mg/kg)		0.16 B	0.049 U	0.041 U	0.048 B	0.062 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-51 RPSB-51 (40-42) 01/11/2000 40.00	RPSB-51 RPSB-51 (50-52) 01/11/2000 50.00	RPSB-52 RPSB-52 (6-8) 01/13/2000 6.00	RPSB-52 RPSB-52 (30-32) 01/14/2000 30.00	RPSB-52 RPSB-52 (42-44) 01/14/2000 42.00
Lead	(mg/kg)	500	0.61 B	0.94 B	22.2 *	2.1	1.5
Mercury	(mg/kg)	0.10	0.019 U	0.018 U	0.017 U	0.017 U	0.018 U
Silver	(mg/kg)		0.32 U	0.29 U	0.32 U	0.39 B	0.48 B
Arsenic	(mg/kg)	7.5	0.91 B	0.96 B	0.79 B	0.36 U	0.57 B
Barium	(mg/kg)	300	1.3 B	2.7 B	6.5 B*	1.9 B	2.2 B
Cadmium	(mg/kg)	10	0.21 U	0.2 U	0.44 B	0.25 B	0.22 U
Chromium	(mg/kg)	50	2.3	2.4	4.5	2.5	1.9 B
Selenium	(mg/kg)	2	0.68 B	0.39 U	0.43 U	0.48 U	0.44 U
Cyanide	(mg/kg)		0.075 B	0.046 U	0.85	0.28 B	0.34 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-53 RPSB-53 (5-7) 02/02/2000 5.00	RPSB-53 RPSB-53 (25-27) 02/02/2000 25.00	RPSB-53 RPSB-53 (39-41) 02/02/2000 39.00	RPSB-54 RPSB-54 (4-6) 01/12/2000 4.00	RPSB-54 RPSB-54 (12-14) 01/12/2000 12.00
Lead	(mg/kg)	500	10.2 *	0.22 U	0.22 U	28.8 *	0.85 *
Mercury	(mg/kg)	0.10	0.018 B	0.018 U	0.02 U	0.017 U	0.019 U
Silver	(mg/kg)		0.48 B	0.32 B	0.27 B	0.54 B	0.21 U
Arsenic	(mg/kg)	7.5	0.45 B	1 B	0.72 B	1.5	0.25 B
Barium	(mg/kg)	300	8.3 B	1.6 B	1.8 B	8.8 B*	0.96 B*
Cadmium	(mg/kg)	10	0.071 B	0.059 B	0.084 B	1.3	0.14 U
Chromium	(mg/kg)	50	3.5	2.2	6.1	6.2	0.94 B
Selenium	(mg/kg)	2	0.43 U	0.38 U	0.38 U	[2.4]	0.27 U
Cyanide	(mg/kg)		0.26 B	0.062 U	0.07 U	5.2	0.053 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 7
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-54 RPSB-54 (50-52) 01/13/2000 50.00
Lead	(mg/kg)	500	1.4 *
Mercury	(mg/kg)	0.10	0.018 U
Silver	(mg/kg)		0.27 U
Arsenic	(mg/kg)	7.5	0.79 B
Barium	(mg/kg)	300	1.5 B*
Cadmium	(mg/kg)	10	0.18 U
Chromium	(mg/kg)	50	3.7
Selenium	(mg/kg)	2	0.36 U
Cyanide	(mg/kg)		0.085 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-07 RPSB-07(15-17) 12/13/1999 15.00	RPSB-07 RPSB-07(27-29) 12/13/1999 27.00	RPSB-07 RPSB-07(39-41) 12/13/1999 39.00	RPSB-08 RPSB-08(15-17) 12/13/1999 15.00	RPSB-08 RPSB-08(30-32) 12/14/1999 30.00	RPSB-08 RPSB-08(40-42) 12/14/1999 40.00
Total Phenol	(mg/kg)	12U	12U	12U	12U	12U	12U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-09 RPSB-09 (2-4) 01/07/2000 2.00	RPSB-09 RPSB-09 (20-22) 01/07/2000 20.00	RPSB-09 RPSB-09 (40-42) 01/07/2000 40.00	RPSB-10 RPSB-10 (4-6) 12/28/1999 4.00	RPSB-10 RPSB-10 (18-20) 12/28/1999 18.00	RPSB-10 RPSB-10 (50-52) 12/28/1999 50.00
Total Phenol	(mg/kg)	12U	12U	12U	13U	13U	14U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-10 RPSB-10 (65-67) 12/29/1999 65.00	RPSB-11 RPSB-11 (15-17) 12/17/1999 15.00	RPSB-11 RPSB-11 (40-42) 12/17/1999 40.00	RPSB-11 RPSB-11 (45-47) 12/17/1999 45.00	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-12 RPSB-12 (14-16) 12/27/1999 14.00
Total Phenol	(mg/kg)	13U	12U	12U	12U	13U	23

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-12 RPSB-12 (50-52) 12/27/1999 50.00	RPSB-13 RPSB-13 (4-6) 01/13/2000 4.00	RPSB-13 RPSB-13 (30-32) 01/13/2000 30.00	RPSB-13 RPSB-13 (38-40) 01/14/2000 38.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-14 RPSB-14 (6-8) 12/13/1999 6.00
Total Phenol	(mg/kg)	13U	12U	12U	13U	12U	12U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-14 RPSB-14 (30-32) 12/13/1999 30.00	RPSB-14 RPSB-14 (40-42) 12/13/1999 40.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-15 RPSB-15 (25-27) 12/15/1999 25.00	RPSB-15 RPSB-15 (7-9) 12/15/1999 7.00	RPSB-15 RPSB-15 (40-42) 12/15/1999 40.00
Total Phenol	(mg/kg)	12U	12U	15U	15U	15U	12U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-16 RPSB-16 (4-6) 12/03/1999 4.00	RPSB-16 RPSB-16 (6-8) 12/03/1999 6.00	RPSB-16 RPSB-16 (30-32) 12/07/1999 30.00	RPSB-16 RPSB-16 (50-52) 12/07/1999 50.00	RPSB-17 RPSB-17 (5-7) 12/07/1999 5.00	RPSB-17 RPSB-17 (35-37) 12/07/1999 35.00
Total Phenol	(mg/kg)	15U	15U	15U	15U	15U	15U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-17 RPSB-17 (50-52) 12/08/1999 50.00	RPSB-18 RPSB-18 (4-6) 12/08/1999 4.00	RPSB-18 RPSB-18 (10-12) 12/08/1999 10.00	RPSB-18 RPSB-18 (80-82) 12/09/1999 80.00	RPSB-18 RPSB-18 (85-87) 12/09/1999 85.00	RPSB-19 RPSB-19 (4-6) 12/30/1999 4.00
Total Phenol	(mg/kg)	13U	13U	13U	13U	13U	14U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-19 RPSB-19 (30-32) 01/03/2000 30.00	RPSB-19 RPSB-19 (45-47) 01/03/2000 45.00	RPSB-20 RPSB-20 (2-4) 12/20/1999 2.00	RPSB-20 RPSB-20 (25-27) 12/20/1999 25.00	RPSB-20 RPSB-20 (40-42) 12/20/1999 40.00	RPSB-21 RPSB-21 (7-9) 12/15/1999 7.00
Total Phenol	(mg/kg)	14U	14U	15U	15U	15U	15U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-21 RPSB-21 (23-25) 12/15/1999 23.00	RPSB-21 RPSB-21 (39-41) 12/15/1999 39.00	RPSB-22 RPSB-22 (4-6) 12/01/1999 4.00	RPSB-22 RPSB-22 (8-10) 12/01/1999 8.00	RPSB-22 RPSB-22 (60-62) 12/02/1999 60.00	RPSB-22 RPSB-22 (80-82) 12/02/1999 80.00
Total Phenol	(mg/kg)	15U	15U	15U	15U	15U	15U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00	RPSB-23 RPSB-23 (12-14) 01/04/2000 12.00	RPSB-23 RPSB-23 (36-38) 01/06/2000 36.00	RPSB-23 RPSB-23(48-50) 01/06/2000 48.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00	RPSB-24 RPSB-24 (5-7) 01/10/2000 5.00
Total Phenol	(mg/kg)	12U	12U	12U	12U	13U	13U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-24 RPSB-24 (30-32) 01/11/2000 30.00	RPSB-24 RPSB-24 (50-52) 01/11/2000 50.00	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-25 RPSB-25 (6-8) 12/21/1999 6.00	RPSB-25 RPSB-25 (40-42) 12/21/1999 40.00	RPSB-25 RPSB-25 (50-52) 12/21/1999 50.00
Total Phenol	(mg/kg)	13U	13U	15U	15U	15U	15U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-26 RPSB-26 (13-15) 01/19/2000 13.00	RPSB-26 RPSB-26 (38-40) 01/19/2000 38.00	RPSB-27 RPSB-27 (2-4) 12/16/1999 2.00	RPSB-27 RPSB-27 (10-12) 12/16/1999 10.00	RPSB-27 RPSB-27 (40-42) 12/17/1999 40.00
Total Phenol	(mg/kg)	12U	12U	12U	15U	15U	12U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-28 RPSB-28 (2-4) 12/29/1999 2.00	RPSB-28 RPSB-28 (4-6) 12/29/1999 4.00	RPSB-28 RPSB-28 (38-40) 12/30/1999 38.00	RPSB-28 RPSB-28 (48-50) 12/30/1999 48.00	RPSB-29 RBSB29(5-7) 12/10/1999 5.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00
Total Phenol	(mg/kg)	13U	13U	14U	14U	11U	13U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-29 RPSB-29 (35-37) 02/03/2000 35.00	RPSB-29 RPSB-29 (55-57) 02/03/2000 55.00	RPSB-29 RPSB-29(134-136 02/25/2000 134.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00	RPSB-30 RPSB-30 (19-21) 02/01/2000 19.00	RPSB-30 RPSB-30 (60-62) 02/02/2000 60.00
Total Phenol	(mg/kg)	13U	13U	12U	12U	12U	13U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-31A RPSB-31A (2-4) 01/04/2000 2.00	RPSB-31A RPSB-31A (4-6) 01/04/2000 4.00	RPSB-31A RPSB-31A(35-37) 01/04/2000 35.00	RPSB-31A SB-31A(133-135) 03/10/2000 133.00	RPSB-31B RPSB-31B (4-6) 01/11/2000 4.00	RPSB-31B RPSB-31B (6-8) 01/11/2000 6.00
Total Phenol	(mg/kg)	12U	12U	12U	12U	13U	13U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-31B RPSB-31B(22-24) 01/12/2000 22.00	RPSB-31B RPSB-31B(48-50) 01/13/2000 48.00	RPSB-32 RPSB-32 (2-4) 12/21/1999 2.00	RPSB-32 RPSB-32 (25-27) 12/21/1999 25.00	RPSB-32 RPSB-32 (40-42) 12/21/1999 40.00	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00
Total Phenol	(mg/kg)	13U	13U	15U	15U	15U	12U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-33 RPSB-33 (15-17) 12/22/1999 15.00	RPSB-33 RPSB-33 (45-47) 12/22/1999 45.00	RPSB-34 RPSB-34 (8-10) 12/29/1999 8.00	RPSB-34 RPSB-34 (40-42) 12/29/1999 40.00	RPSB-34 RPSB-34 (80-82) 12/30/1999 80.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00
Total Phenol	(mg/kg)	12U	12U	14U	14U	14U	14U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-35 RPSB-35 (10-12) 01/03/2000 10.00	RPSB-35 RPSB-35 (60-62) 01/03/2000 60.00	RPSB-35 RPSB-35 (80-82) 01/04/2000 80.00	RPSB-36 RPSB-36 (5-7) 01/03/2000 5.00	RPSB-36 RPSB-36 (7-9) 01/03/2000 7.00	RPSB-36 RPSB-36 (35-37) 01/03/2000 35.00
Total Phenol	(mg/kg)	14U	14U	12U	14U	14U	14U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-36 RPSB-36 (55-57) 01/04/2000 55.00	RPSB-37 RPSB-37 (10-12) 01/12/2000 10.00	RPSB-37 RPSB-37 (35-37) 01/12/2000 35.00	RPSB-37 RPSB-37 (50-52) 01/12/2000 50.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-38 RPSB-38 (10-12) 01/13/2000 10.00
Total Phenol	(mg/kg)	12U	13U	13U	13U	12U	13U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-38 RPSB-38 (30-32) 01/13/2000 30.00	RPSB-38 RPSB-38 (50-52) 01/13/2000 50.00	RPSB-39 RPSB-39 (2-4) 02/01/2000 2.00	RPSB-39 RPSB-39 (25-27) 02/01/2000 25.00	RPSB-39 RPSB-39 (42-44) 02/01/2000 42.00	RPSB-40 RPSB-40 (19-21) 01/20/2000 19.00
Total Phenol	(mg/kg)	12U	12U	12U	12U	12U	12U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-40 RPSB-40 (26-28) 01/20/2000 26.00	RPSB-40 RPSB-40 (38-40) 01/20/2000 38.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-41 RPSB-41 (9-11) 12/16/1999 9.00	RPSB-41 RPSB-41 (45-47) 12/16/1999 45.00	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00
Total Phenol	(mg/kg)	12U	12U	15U	15U	15U	12U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-42 RPSB-42 (10-12) 01/19/2000 10.00	RPSB-42 RPSB-42 (35-37) 01/24/2000 35.00	RPSB-42 RPSB-42(124-126 02/29/2000 124.00	RPSB-43 RPSB-43 (5-7) 12/01/1999 5.00	RPSB-43 RPSB-43 (9-11) 12/01/1999 9.00	RPSB-43 RPSB-43 (45-47) 12/02/1999 45.00
Total Phenol	(mg/kg)	12U	13U	12U	15U	15U	15U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-43 RPSB-43 (95-97) 12/03/1999 95.00	RPSB-44 RPSB-44 (10-12) 12/03/1999 10.00	RPSB-44 RPSB-44 (65-67) 12/06/1999 65.00	RPSB-44 RPSB-44(149-151 03/15/2000 149.00	RPSB-45 RPSB-45 (6-8) 01/07/2000 6.00	RPSB-45 RPSB-45 (25-27) 01/07/2000 25.00
Total Phenol	(mg/kg)	15U	15U	15U	13U	12U	12U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-45 RPSB-45 (40-42) 01/07/2000 40.00	RPSB-45 RPSB-45 (50-52) 01/07/2000 50.00	RPSB-46 RPSB-46 (4-6) 12/20/1999 4.00	RPSB-46 RPSB-46 (8-10) 12/20/1999 8.00	RPSB-46 RPSB-46 (35-37) 12/20/1999 35.00	RPSB-46 RPSB-46 (50-52) 12/20/1999 50.00
Total Phenol	(mg/kg)	12U	12U	15U	15U	15U	15U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-47 RPSB-47 (5-7) 01/13/2000 5.00	RPSB-47 RPSB-47 (25-27) 01/13/2000 25.00	RPSB-47 RPSB-47 (40-42) 01/14/2000 40.00	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-48 RPSB-48 (22-24) 01/24/2000 22.00	RPSB-48 RPSB-48 (45-47) 01/24/2000 45.00
Total Phenol	(mg/kg)	13U	13U	13U	12U	13U	13U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-49 RPSB-49 (2-4) 12/08/1999 2.00	RPSB-49 RPSB-49 (8-10) 12/08/1999 8.00	RPSB-49 RPSB-49 (40-42) 12/08/1999 40.00	RPSB-49 RPSB-49 (50-52) 12/08/1999 50.00	RPSB-50 RPSB-50 (5-7) 12/09/1999 5.00	RPSB-50 RPSB-50 (7-9) 12/09/1999 7.00
Total Phenol	(mg/kg)	13U	13U	13U	13U	13U	13U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-50 RBSB-50 (39-41 12/10/1999 39.00	RPSB-50 RPSB-50 (55-57) 12/13/1999 55.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00	RPSB-51 RPSB-51 (10-12) 01/10/2000 10.00	RPSB-51 RPSB-51 (40-42) 01/11/2000 40.00	RPSB-51 RPSB-51 (50-52) 01/11/2000 50.00
Total Phenol	(mg/kg)	11U	12U	13U	13U	13U	13U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-52 RPSB-52 (6-8) 01/13/2000 6.00	RPSB-52 RPSB-52 (30-32) 01/14/2000 30.00	RPSB-52 RPSB-52 (42-44) 01/14/2000 42.00	RPSB-53 RPSB-53 (5-7) 02/02/2000 5.00	RPSB-53 RPSB-53 (25-27) 02/02/2000 25.00	RPSB-53 RPSB-53 (39-41) 02/02/2000 39.00
Total Phenol	(mg/kg)	12U	12U	12U	13U	13U	13U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 8
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-54 RPSB-54 (4-6) 01/12/2000 4.00	RPSB-54 RPSB-54 (12-14) 01/12/2000 12.00	RPSB-54 RPSB-54 (50-52) 01/13/2000 50.00
Total Phenol	(mg/kg)	12U	12U	12U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00
Chloromethane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Bromomethane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Vinyl chloride	(mg/kg)	0.2	0.005 U	0.005 U	0.006 U	11 U	0.006 U
Chloroethane	(mg/kg)	1.9	0.005 U	0.005 U	0.006 U	11 U	0.006 U
Methylene chloride	(mg/kg)	0.1	0.005 U	[0.16]	0.022	11 U	0.037 B
Acetone	(mg/kg)	0.2	0.005 J	0.005 B	0.02 B	11 U	0.006 B
Carbon disulfide	(mg/kg)	2.7	0.005 U	0.005 U	0.006 U	11 U	0.002 J
1,1-Dichloroethene	(mg/kg)	0.4	0.005 U	0.005 U	0.006 U	11 U	0.006 U
1,1-Dichloroethane	(mg/kg)	0.2	0.005 U	0.005 U	0.006 U	11 U	0.006 U
Chloroform	(mg/kg)	0.3	0.005 U	0.005 U	0.006 U	11 U	0.006 U
1,2-Dichloroethane	(mg/kg)	0.1	0.005 U	0.005 U	0.006 U	11 U	0.006 U
2-Butanone	(mg/kg)	0.3	0.005 U	0.005 U	0.003 J	11 U	0.006 U
1,1,1-Trichloroethane	(mg/kg)	0.8	0.005 U	0.005 U	0.006 U	11 U	0.006 U
Carbon tetrachloride	(mg/kg)	0.6	0.005 U	0.005 U	0.006 U	11 U	0.006 U
Vinyl Acetate	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Bromodichloromethane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
1,2-Dichloropropane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
cis-1,3-Dichloropropene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Trichloroethene	(mg/kg)	0.7	0.005 U	0.001 J	0.006 U	11 U	0.006 U
Dibromochloromethane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
1,1,2-Trichloroethane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00
trans-1,3-Dichloropropene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Bromoform	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
4-Methyl-2-pentanone	(mg/kg)	1	0.005 U	0.005 U	0.006 U	11 U	0.006 U
2-Hexanone	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Tetrachloroethene	(mg/kg)	1.4	0.002 J	0.008	0.002 J	11 U	0.006 U
1,1,2,2-Tetrachloroethane	(mg/kg)	0.6	0.005 U	0.005 U	0.006 U	11 U	0.006 U
Chlorobenzene	(mg/kg)	1.7	0.005 U	0.005 U	0.006 U	11 U	0.006 U
Styrene	(mg/kg)		0.005 U	0.005 U	0.002 J	11 U	0.006 U
1,1,1,2-Tetrachloroethane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
1,1-Dichloropropene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
1,2,3-Trichlorobenzene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
1,2,3-Trichloropropane	(mg/kg)	0.4	0.005 U	0.005 U	0.006 U	11 U	0.006 U
1,3-Dichloropropane	(mg/kg)	0.3	0.005 U	0.005 U	0.006 U	11 U	0.006 U
2,2-Dichloropropane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
4-Bromofluorobenzene	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Benzene, 1,2,4-trimethyl	(mg/kg)		0.001 J	0.025	0.012	200	0.006 U
Benzene, 1,3,5-trimethyl-	(mg/kg)		0.005 U	0.013	0.004 J	75	1.1 E
Benzene, 1-methylethyl-	(mg/kg)		0.005 U	0.001 J	0.006 U	13	0.17
Bromobenzene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Chlorobromomethane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
cis-1,2-Dichloroethylene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00
1,2-Dibromo-3-chloropropane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Dichlorodifluoromethane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
1,2-Dibromoethane	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
trans-1,2-Dichloroethylene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Methyl iodide	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Methylene bromide	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Methyltert-butylether	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
n-Butylbenzene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
n-Propylbenzene	(mg/kg)		0.005 U	0.005 U	0.006 U	4.9 J	0.006 U
o-Chlorotoluene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
p-Chlorotoluene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
sec-Butylbenzene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
tert-Butylbenzene	(mg/kg)		0.005 U	0.005 U	0.006 U	11 U	0.006 U
Trichlorofluoromethane	(mg/kg)	6	0.005 U	0.003 J	0.006 U	11 U	0.006 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-27 RPSB-27 (2-4) 12/16/1999 2.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00
Chloromethane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Bromomethane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Vinyl chloride	(mg/kg)	0.2	0.047 U	0.005 U	1.1 U	3 U	3 U
Chloroethane	(mg/kg)	1.9	0.047 U	0.005 U	1.1 U	3 U	3 U
Methylene chloride	(mg/kg)	0.1	0.021 J	0.022	[0.46] J	3 U	3 U
Acetone	(mg/kg)	0.2	0.18 B	0.004 J	1.1 U	3 U	3 U
Carbon disulfide	(mg/kg)	2.7	0.016 J	0.002 J	1.1 U	3 U	3 U
1,1-Dichloroethene	(mg/kg)	0.4	0.047 U	0.005 U	1.1 U	3 U	3 U
1,1-Dichloroethane	(mg/kg)	0.2	0.047 U	0.005 U	1.1 U	3 U	3 U
Chloroform	(mg/kg)	0.3	0.047 U	0.005 U	1.1 U	3 U	3 U
1,2-Dichloroethane	(mg/kg)	0.1	0.047 U	0.005 U	1.1 U	3 U	3 U
2-Butanone	(mg/kg)	0.3	0.047 U	0.005 U	1.1 U	3 U	3 U
1,1,1-Trichloroethane	(mg/kg)	0.8	0.047 U	0.005 U	1.1 U	3 U	3 U
Carbon tetrachloride	(mg/kg)	0.6	0.047 U	0.005 U	1.1 U	3 U	3 U
Vinyl Acetate	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Bromodichloromethane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
1,2-Dichloropropane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
cis-1,3-Dichloropropene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Trichloroethene	(mg/kg)	0.7	0.047 U	0.005 U	1.1 U	3 U	3 U
Dibromochloromethane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
1,1,2-Trichloroethane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-27 RPSB-27 (2-4) 12/16/1999 2.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00
trans-1,3-Dichloropropene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Bromoform	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
4-Methyl-2-pentanone	(mg/kg)	1	0.047 U	0.005 U	1.1 U	3 U	3 U
2-Hexanone	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Tetrachloroethene	(mg/kg)	1.4	0.047 U	0.005 U	1.1 U	3 U	3 U
1,1,2,2-Tetrachloroethane	(mg/kg)	0.6	0.047 U	0.005 U	1.1 U	3 U	3 U
Chlorobenzene	(mg/kg)	1.7	0.047 U	0.005 U	1.1 U	3 U	3 U
Styrene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
1,1,1,2-Tetrachloroethane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
1,1-Dichloropropene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
1,2,3-Trichlorobenzene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
1,2,3-Trichloropropane	(mg/kg)	0.4	0.047 U	0.005 U	1.1 U	3 U	3 U
1,3-Dichloropropane	(mg/kg)	0.3	0.047 U	0.005 U	1.1 U	3 U	3 U
2,2-Dichloropropane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
4-Bromofluorobenzene	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
Benzene, 1,2,4-trimethyl	(mg/kg)		20 E	0.005 U	71 E	17	14
Benzene, 1,3,5-trimethyl-	(mg/kg)		5 E	0.005 U	25	6.1	4.7
Benzene, 1-methylethyl-	(mg/kg)		6.8 E	0.005 U	7.9	2.5 J	2 J
Bromobenzene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Chlorobromomethane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
cis-1,2-Dichloroethylene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-27 RPSB-27 (2-4) 12/16/1999 2.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00
1,2-Dibromo-3-chloropropane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Dichlorodifluoromethane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
1,2-Dibromoethane	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
trans-1,2-Dichloroethylene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Methyl iodide	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Methylene bromide	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Methyltert-butylether	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
n-Butylbenzene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
n-Propylbenzene	(mg/kg)		0.047 U	0.005 U	2.7	0.98 J	0.77 J
o-Chlorotoluene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
p-Chlorotoluene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
sec-Butylbenzene	(mg/kg)		1.7	0.005 U	1.1 U	3 U	3 U
tert-Butylbenzene	(mg/kg)		0.047 U	0.005 U	1.1 U	3 U	3 U
Trichlorofluoromethane	(mg/kg)	6	0.047 U	0.005 U	1.1 U	3 U	3 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00
Chloromethane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Bromomethane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Vinyl chloride	(mg/kg)	0.2	0.005 U	0.006 U	0.006 U	61 U	0.26 U
Chloroethane	(mg/kg)	1.9	0.005 U	0.006 U	0.006 U	61 U	0.26 U
Methylene chloride	(mg/kg)	0.1	0.039	0.006 U	[0.12]	[37] J	0.26 U
Acetone	(mg/kg)	0.2	0.018	0.006 U	0.017	61 U	0.26 U
Carbon disulfide	(mg/kg)	2.7	0.005 U	0.006 U	0.006 U	61 U	0.26 U
1,1-Dichloroethene	(mg/kg)	0.4	0.005 U	0.006 U	0.006 U	61 U	0.26 U
1,1-Dichloroethane	(mg/kg)	0.2	0.005 U	0.006 U	0.006 U	61 U	0.26 U
Chloroform	(mg/kg)	0.3	0.005 U	0.006 U	0.006 U	61 U	0.26 U
1,2-Dichloroethane	(mg/kg)	0.1	0.005 U	0.006 U	0.006 U	61 U	0.26 U
2-Butanone	(mg/kg)	0.3	0.003 J	0.006 U	0.006 U	61 U	0.26 U
1,1,1-Trichloroethane	(mg/kg)	0.8	0.005 U	0.006 U	0.006 U	61 U	0.26 U
Carbon tetrachloride	(mg/kg)	0.6	0.005 U	0.006 U	0.006 U	61 U	0.26 U
Vinyl Acetate	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Bromodichloromethane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
1,2-Dichloropropane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
cis-1,3-Dichloropropene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Trichloroethene	(mg/kg)	0.7	0.005 U	0.006 U	0.006 U	61 U	0.26 U
Dibromochloromethane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
1,1,2-Trichloroethane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00
trans-1,3-Dichloropropene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Bromoform	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
4-Methyl-2-pentanone	(mg/kg)	1	0.005 U	0.006 U	0.006 U	61 U	0.26 U
2-Hexanone	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Tetrachloroethene	(mg/kg)	1.4	0.001 J	0.006 U	0.001 J	61 U	0.26 U
1,1,2,2-Tetrachloroethane	(mg/kg)	0.6	0.005 U	0.006 U	0.006 U	61 U	0.26 U
Chlorobenzene	(mg/kg)	1.7	0.005 U	0.006 U	0.006 U	61 U	0.26 U
Styrene	(mg/kg)		0.008	0.002 J	0.006 U	61 U	0.26 U
1,1,1,2-Tetrachloroethane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
1,1-Dichloropropene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
1,2,3-Trichlorobenzene	(mg/kg)		0.005 U	0.004 J	0.006 U	61 U	0.26 U
1,2,3-Trichloropropane	(mg/kg)	0.4	0.005 U	0.006 U	0.006 U	61 U	0.26 U
1,3-Dichloropropane	(mg/kg)	0.3	0.005 U	0.006 U	0.006 U	61 U	0.26 U
2,2-Dichloropropane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
4-Bromofluorobenzene	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
Benzene, 1,2,4-trimethyl	(mg/kg)		0.006	0.001 J	0.006 J	90	0.32
Benzene, 1,3,5-trimethyl-	(mg/kg)		0.002 J	0.006 U	0.004 J	33 J	0.26 U
Benzene, 1-methylethyl-	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Bromobenzene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Chlorobromomethane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
cis-1,2-Dichloroethylene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00
1,2-Dibromo-3-chloropropane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Dichlorodifluoromethane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
1,2-Dibromoethane	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
trans-1,2-Dichloroethylene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Methyl iodide	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Methylene bromide	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Methyltert-butylether	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
n-Butylbenzene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
n-Propylbenzene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
o-Chlorotoluene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
p-Chlorotoluene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
sec-Butylbenzene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
tert-Butylbenzene	(mg/kg)		0.005 U	0.006 U	0.006 U	61 U	0.26 U
Trichlorofluoromethane	(mg/kg)	6	0.005 U	0.006 U	0.004 J	61 U	0.26 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00
Chloromethane	(mg/kg)		30 U	0.005 U
Bromomethane	(mg/kg)		30 U	0.005 U
Vinyl chloride	(mg/kg)	0.2	30 U	0.005 U
Chloroethane	(mg/kg)	1.9	30 U	0.005 U
Methylene chloride	(mg/kg)	0.1	30 U	0.005 JB
Acetone	(mg/kg)	0.2	30 U	0.023 B
Carbon disulfide	(mg/kg)	2.7	30 U	0.005 U
1,1-Dichloroethene	(mg/kg)	0.4	30 U	0.005 U
1,1-Dichloroethane	(mg/kg)	0.2	30 U	0.005 U
Chloroform	(mg/kg)	0.3	30 U	0.005 U
1,2-Dichloroethane	(mg/kg)	0.1	30 U	0.005 U
2-Butanone	(mg/kg)	0.3	30 U	0.006
1,1,1-Trichloroethane	(mg/kg)	0.8	30 U	0.005 U
Carbon tetrachloride	(mg/kg)	0.6	30 U	0.005 U
Vinyl Acetate	(mg/kg)		30 U	0.005 U
Bromodichloromethane	(mg/kg)		30 U	0.005 U
1,2-Dichloropropane	(mg/kg)		30 U	0.005 U
cis-1,3-Dichloropropene	(mg/kg)		30 U	0.005 U
Trichloroethene	(mg/kg)	0.7	30 U	0.005 U
Dibromochloromethane	(mg/kg)		30 U	0.005 U
1,1,2-Trichloroethane	(mg/kg)		30 U	0.005 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00
trans-1,3-Dichloropropene	(mg/kg)		30 U	0.005 U
Bromoform	(mg/kg)		30 U	0.005 U
4-Methyl-2-pentanone	(mg/kg)	1	30 U	0.005 U
2-Hexanone	(mg/kg)		30 U	0.005 U
Tetrachloroethene	(mg/kg)	1.4	30 U	0.005 U
1,1,2,2-Tetrachloroethane	(mg/kg)	0.6	30 U	0.005 U
Chlorobenzene	(mg/kg)	1.7	30 U	0.005 U
Styrene	(mg/kg)		440	0.005 U
1,1,1,2-Tetrachloroethane	(mg/kg)		30 U	0.005 U
1,1-Dichloropropene	(mg/kg)		30 U	0.005 U
1,2,3-Trichlorobenzene	(mg/kg)		30 U	0.005 U
1,2,3-Trichloropropane	(mg/kg)	0.4	30 U	0.005 U
1,3-Dichloropropane	(mg/kg)	0.3	30 U	0.005 U
2,2-Dichloropropane	(mg/kg)		30 U	0.005 U
4-Bromofluorobenzene	(mg/kg)		16 U	7.3 U
Benzene, 1,2,4-trimethyl	(mg/kg)		120	0.005 U
Benzene, 1,3,5-trimethyl-	(mg/kg)		48	0.001 J
Benzene, 1-methylethyl-	(mg/kg)		30 U	0.005 U
Bromobenzene	(mg/kg)		30 U	0.005 U
Chlorobromomethane	(mg/kg)		30 U	0.005 U
cis-1,2-Dichloroethylene	(mg/kg)		30 U	0.005 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 9
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGAMIC COMPOUNDS (VOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00
1,2-Dibromo-3-chloropropane	(mg/kg)		30 U	0.005 U
Dichlorodifluoromethane	(mg/kg)		30 U	0.005 U
1,2-Dibromoethane	(mg/kg)		30 U	0.005 U
trans-1,2-Dichloroethylene	(mg/kg)		30 U	0.005 U
Methyl iodide	(mg/kg)		30 U	0.005 U
Methylene bromide	(mg/kg)		30 U	0.005 U
Methyltert-butylether	(mg/kg)		30 U	0.005 U
n-Butylbenzene	(mg/kg)		30 U	0.005 U
n-Propylbenzene	(mg/kg)		6.8 J	0.005 U
o-Chlorotoluene	(mg/kg)		30 U	0.005 U
p-Chlorotoluene	(mg/kg)		30 U	0.005 U
sec-Butylbenzene	(mg/kg)		30 U	0.005 U
tert-Butylbenzene	(mg/kg)		30 U	0.005 U
Trichlorofluoromethane	(mg/kg)	6	30 U	0.005 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00
Phenol	(mg/kg)	0.03	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Bis(2-chloroethyl)ether	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
2-Chlorophenol	(mg/kg)	0.8	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
1,3-Dichlorobenzene	(mg/kg)	1.6	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
1,4-Dichlorobenzene	(mg/kg)	8.5	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
1,2-Dichlorobenzene	(mg/kg)	7.9	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
2-Methylphenol	(mg/kg)	0.1	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
4-Methylphenol	(mg/kg)	0.9	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
N-Nitroso-di-n-propylamine	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Hexachloroethane	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Nitrobenzene	(mg/kg)	0.2	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Isophorone	(mg/kg)	4.4	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
2-Nitrophenol	(mg/kg)	0.33	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
2,4-Dimethylphenol	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Bis(2-chloroethoxy)methane	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
2,4-Dichlorophenol	(mg/kg)	0.4	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
1,2,4-Trichlorobenzene	(mg/kg)	3.4	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
4-Chloroaniline	(mg/kg)	0.22	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Hexachlorobutadiene	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
4-Chloro-3-methylphenol	(mg/kg)	0.24	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Hexachlorocyclopentadiene	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00
2,4,6-Trichlorophenol	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
2,4,5-Trichlorophenol	(mg/kg)	0.1	1.4 U	7 U	0.75 U	0.83 U	7.5 U
2-Chloronaphthalene	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
2-Nitroaniline	(mg/kg)	0.43	1.4 U	7 U	0.75 U	0.83 U	3.7 U
Dimethyl phthalate	(mg/kg)	2	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
2,6-Dinitrotoluene	(mg/kg)	1	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
3-Nitroaniline	(mg/kg)	0.5	1.4 U	7 U	0.75 U	0.83 U	7.5 U
2,4-Dinitrophenol	(mg/kg)	0.2	1.4 U	7 U	0.75 U	0.83 U	7.5 U
4-Nitrophenol	(mg/kg)	0.1	1.4 U	7 U	0.75 U	0.83 U	7.5 U
2,4-Dinitrotoluene	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Diethylphthalate	(mg/kg)	7.1	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
4-Chlorophenyl phenylether	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
4-Nitroaniline	(mg/kg)		1.4 U	7 U	0.75 U	0.83 U	7.5 U
4,6-Dinitro,2-methylphenol	(mg/kg)		1.4 U	7 U	0.75 U	0.83 U	7.5 U
N-Nitrosodiphenylamine (1)	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Hexachlorobenzene	(mg/kg)	0.41	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Pentachlorophenol	(mg/kg)	1	1.4 U	7 U	0.75 U	0.83 U	7.5 U
Di-n-butylphthalate	(mg/kg)	8.1	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Butylbenzylphthalate	(mg/kg)	50	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
3,3'-Dichlorobenzidine	(mg/kg)		0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Bis(2-ethylhexyl)phthalate	(mg/kg)	50	0.7 U	3.4 U	0.26 J	0.41 U	3.7 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00
Di-n-octyl phthalate	(mg/kg)	50	0.7 U	3.4 U	0.37 U	0.41 U	3.7 U
Carbazole	(mg/kg)		0.7 U	3.4 U	0.37 U	4.6	0.72 J

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-27 RPSB-27 (2-4) 12/16/1999 2.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00
Phenol	(mg/kg)	0.03	0.41 U	0.34 U	1.8 U	79 U	120 U
Bis(2-chloroethyl)ether	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
2-Chlorophenol	(mg/kg)	0.8	0.41 U	0.34 U	1.8 U	79 U	120 U
1,3-Dichlorobenzene	(mg/kg)	1.6	0.41 U	0.34 U	1.8 U	79 U	120 U
1,4-Dichlorobenzene	(mg/kg)	8.5	0.41 U	0.34 U	1.8 U	79 U	120 U
1,2-Dichlorobenzene	(mg/kg)	7.9	0.41 U	0.34 U	1.8 U	79 U	120 U
2-Methylphenol	(mg/kg)	0.1	0.41 U	0.34 U	1.8 U	79 U	120 U
4-Methylphenol	(mg/kg)	0.9	0.41 U	0.34 U	1.8 U	79 U	120 U
N-Nitroso-di-n-propylamine	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
Hexachloroethane	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
Nitrobenzene	(mg/kg)	0.2	0.41 U	0.34 U	1.8 U	79 U	120 U
Isophorone	(mg/kg)	4.4	0.41 U	0.34 U	1.8 U	79 U	120 U
2-Nitrophenol	(mg/kg)	0.33	0.41 U	0.34 U	1.8 U	79 U	120 U
2,4-Dimethylphenol	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
Bis(2-chloroethoxy)methane	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
2,4-Dichlorophenol	(mg/kg)	0.4	0.41 U	0.34 U	1.8 U	79 U	120 U
1,2,4-Trichlorobenzene	(mg/kg)	3.4	0.41 U	0.34 U	1.8 U	79 U	120 U
4-Chloroaniline	(mg/kg)	0.22	0.41 U	0.34 U	1.8 U	79 U	120 U
Hexachlorobutadiene	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
4-Chloro-3-methylphenol	(mg/kg)	0.24	0.41 U	0.34 U	1.8 U	79 U	120 U
Hexachlorocyclopentadiene	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-27 RPSB-27 (2-4) 12/16/1999 2.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00
2,4,6-Trichlorophenol	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
2,4,5-Trichlorophenol	(mg/kg)	0.1	0.83 U	0.7 U	3.7 U	160 U	240 U
2-Chloronaphthalene	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
2-Nitroaniline	(mg/kg)	0.43	0.83 U	0.7 U	3.7 U	160 U	240 U
Dimethyl phthalate	(mg/kg)	2	0.41 U	0.34 U	1.8 U	79 U	120 U
2,6-Dinitrotoluene	(mg/kg)	1	0.41 U	0.34 U	1.8 U	79 U	120 U
3-Nitroaniline	(mg/kg)	0.5	0.83 U	0.7 U	3.7 U	160 U	240 U
2,4-Dinitrophenol	(mg/kg)	0.2	0.83 U	0.7 U	3.7 U	160 U	240 U
4-Nitrophenol	(mg/kg)	0.1	0.83 U	0.7 U	3.7 U	160 U	240 U
2,4-Dinitrotoluene	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
Diethylphthalate	(mg/kg)	7.1	0.41 U	0.34 U	1.8 U	79 U	120 U
4-Chlorophenyl phenylether	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
4-Nitroaniline	(mg/kg)		0.83 U	0.7 U	3.7 U	160 U	240 U
4,6-Dinitro,2-methylphenol	(mg/kg)		0.83 U	0.7 U	3.7 U	160 U	240 U
N-Nitrosodiphenylamine (1)	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
Hexachlorobenzene	(mg/kg)	0.41	0.41 U	0.34 U	1.8 U	79 U	120 U
Pentachlorophenol	(mg/kg)	1	0.83 U	0.7 U	3.7 U	160 U	240 U
Di-n-butylphthalate	(mg/kg)	8.1	0.41 U	0.34 U	1.8 U	79 U	120 U
Butylbenzylphthalate	(mg/kg)	50	0.41 U	0.34 U	1.8 U	79 U	120 U
3,3'-Dichlorobenzidine	(mg/kg)		0.41 U	0.34 U	1.8 U	79 U	120 U
Bis(2-ethylhexyl)phthalate	(mg/kg)	50	0.41 U	0.52	1.8 U	79 U	120 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-27 RPSB-27 (2-4) 12/16/1999 2.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00
Di-n-octyl phthalate	(mg/kg)	50	0.41 U	0.34 U	1.8 U	79 U	120 U
Carbazole	(mg/kg)		0.41 U	0.34 U	3.3	79 U	120 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00
Phenol	(mg/kg)	0.03	[0.04] J	4 U	0.41 U	2 U	0.69 U
Bis(2-chloroethyl)ether	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
2-Chlorophenol	(mg/kg)	0.8	0.37 U	4 U	0.41 U	2 U	0.69 U
1,3-Dichlorobenzene	(mg/kg)	1.6	0.37 U	4 U	0.41 U	2 U	0.69 U
1,4-Dichlorobenzene	(mg/kg)	8.5	0.37 U	4 U	0.41 U	2 U	0.69 U
1,2-Dichlorobenzene	(mg/kg)	7.9	0.37 U	4 U	0.41 U	2 U	0.69 U
2-Methylphenol	(mg/kg)	0.1	0.038 J	4 U	0.41 U	2 U	0.69 U
4-Methylphenol	(mg/kg)	0.9	0.048 J	4 U	0.41 U	2 U	0.69 U
N-Nitroso-di-n-propylamine	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
Hexachloroethane	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
Nitrobenzene	(mg/kg)	0.2	0.37 U	4 U	0.41 U	2 U	0.69 U
Isophorone	(mg/kg)	4.4	0.37 U	4 U	0.41 U	2 U	0.69 U
2-Nitrophenol	(mg/kg)	0.33	0.37 U	4 U	0.41 U	2 U	0.69 U
2,4-Dimethylphenol	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
Bis(2-chloroethoxy)methane	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
2,4-Dichlorophenol	(mg/kg)	0.4	0.37 U	4 U	0.41 U	2 U	0.69 U
1,2,4-Trichlorobenzene	(mg/kg)	3.4	0.37 U	4 U	0.41 U	2 U	0.69 U
4-Chloroaniline	(mg/kg)	0.22	0.37 U	4 U	0.41 U	2 U	0.69 U
Hexachlorobutadiene	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
4-Chloro-3-methylphenol	(mg/kg)	0.24	0.37 U	4 U	0.41 U	2 U	0.69 U
Hexachlorocyclopentadiene	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00
2,4,6-Trichlorophenol	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
2,4,5-Trichlorophenol	(mg/kg)	0.1	0.75 U	8 U	0.83 U	4 U	1.4 U
2-Chloronaphthalene	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
2-Nitroaniline	(mg/kg)	0.43	0.75 U	8 U	0.83 U	4 U	1.4 U
Dimethyl phthalate	(mg/kg)	2	0.37 U	4 U	0.41 U	2 U	0.69 U
2,6-Dinitrotoluene	(mg/kg)	1	0.37 U	4 U	0.41 U	2 U	0.69 U
3-Nitroaniline	(mg/kg)	0.5	0.75 U	8 U	0.83 U	4 U	1.4 U
2,4-Dinitrophenol	(mg/kg)	0.2	0.75 U	8 U	0.83 U	4 U	1.4 U
4-Nitrophenol	(mg/kg)	0.1	0.75 U	8 U	0.83 U	4 U	1.4 U
2,4-Dinitrotoluene	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
Diethylphthalate	(mg/kg)	7.1	0.37 U	4 U	0.41 U	2 U	0.69 U
4-Chlorophenyl phenylether	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
4-Nitroaniline	(mg/kg)		0.75 U	8 U	0.83 U	4 U	1.4 U
4,6-Dinitro,2-methylphenol	(mg/kg)		0.75 U	8 U	0.83 U	4 U	1.4 U
N-Nitrosodiphenylamine (1)	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
Hexachlorobenzene	(mg/kg)	0.41	0.37 U	4 U	0.41 U	2 U	0.69 U
Pentachlorophenol	(mg/kg)	1	0.75 U	8 U	0.83 U	4 U	1.4 U
Di-n-butylphthalate	(mg/kg)	8.1	0.37 U	4 U	0.41 U	2 U	0.69 U
Butylbenzylphthalate	(mg/kg)	50	0.37 U	4 U	0.41 U	2 U	0.69 U
3,3'-Dichlorobenzidine	(mg/kg)		0.37 U	4 U	0.41 U	2 U	0.69 U
Bis(2-ethylhexyl)phthalate	(mg/kg)	50	0.37 U	4 U	0.41 U	2 U	0.69 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00
Di-n-octyl phthalate	(mg/kg)	50	0.37 U	4 U	0.41 U	2 U	0.69 U
Carbazole	(mg/kg)		0.069 J	4 U	0.41 U	2 U	0.69 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00
Phenol	(mg/kg)	0.03	16 U	7.3 U
Bis(2-chloroethyl)ether	(mg/kg)		16 U	7.3 U
2-Chlorophenol	(mg/kg)	0.8	16 U	7.3 U
1,3-Dichlorobenzene	(mg/kg)	1.6	16 U	7.3 U
1,4-Dichlorobenzene	(mg/kg)	8.5	16 U	7.3 U
1,2-Dichlorobenzene	(mg/kg)	7.9	16 U	7.3 U
2-Methylphenol	(mg/kg)	0.1	16 U	7.3 U
4-Methylphenol	(mg/kg)	0.9	16 U	7.3 U
N-Nitroso-di-n-propylamine	(mg/kg)		16 U	7.3 U
Hexachloroethane	(mg/kg)		16 U	7.3 U
Nitrobenzene	(mg/kg)	0.2	16 U	7.3 U
Isophorone	(mg/kg)	4.4	16 U	7.3 U
2-Nitrophenol	(mg/kg)	0.33	16 U	7.3 U
2,4-Dimethylphenol	(mg/kg)		16 U	7.3 U
Bis(2-chloroethoxy)methane	(mg/kg)		16 U	7.3 U
2,4-Dichlorophenol	(mg/kg)	0.4	16 U	7.3 U
1,2,4-Trichlorobenzene	(mg/kg)	3.4	16 U	7.3 U
4-Chloroaniline	(mg/kg)	0.22	16 U	7.3 U
Hexachlorobutadiene	(mg/kg)		16 U	7.3 U
4-Chloro-3-methylphenol	(mg/kg)	0.24	16 U	7.3 U
Hexachlorocyclopentadiene	(mg/kg)		16 U	7.3 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00
2,4,6-Trichlorophenol	(mg/kg)		16 U	7.3 U
2,4,5-Trichlorophenol	(mg/kg)	0.1	32 U	15 U
2-Chloronaphthalene	(mg/kg)		16 U	7.3 U
2-Nitroaniline	(mg/kg)	0.43	32 U	15 U
Dimethyl phthalate	(mg/kg)	2	16 U	7.3 U
2,6-Dinitrotoluene	(mg/kg)	1	16 U	7.3 U
3-Nitroaniline	(mg/kg)	0.5	32 U	15 U
2,4-Dinitrophenol	(mg/kg)	0.2	32 U	15 U
4-Nitrophenol	(mg/kg)	0.1	32 U	15 U
2,4-Dinitrotoluene	(mg/kg)		16 U	7.3 U
Diethylphthalate	(mg/kg)	7.1	16 U	7.3 U
4-Chlorophenyl phenylether	(mg/kg)		16 U	7.3 U
4-Nitroaniline	(mg/kg)		32 U	15 U
4,6-Dinitro,2-methylphenol	(mg/kg)		32 U	15 U
N-Nitrosodiphenylamine (1)	(mg/kg)		16 U	7.3 U
Hexachlorobenzene	(mg/kg)	0.41	16 U	7.3 U
Pentachlorophenol	(mg/kg)	1	32 U	15 U
Di-n-butylphthalate	(mg/kg)	8.1	16 U	7.3 U
Butylbenzylphthalate	(mg/kg)	50	16 U	7.3 U
3,3'-Dichlorobenzidine	(mg/kg)		16 U	7.3 U
Bis(2-ethylhexyl)phthalate	(mg/kg)	50	16 U	7.3 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 10
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGAMIC COMPOUNDS (SVOCs)*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00
Di-n-octyl phthalate	(mg/kg)	50	16 U	7.3 U
Carbazole	(mg/kg)		16 U	7.3 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 11
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00
Aluminum	(mg/kg)		1110	415	1060	942	1310
Antimony	(mg/kg)		0.27 B	0.22 U	0.19 U	0.61 B	0.21 U
Beryllium	(mg/kg)	0.16	0.2 U	0.22 U	0.19 U	0.23 U	0.21 U
Calcium	(mg/kg)		2440	108	50200	264	13100
Cobalt	(mg/kg)	30	1.6 B	0.9 B	0.81 B	2.1 B	2.4 B
Copper	(mg/kg)	25	[26.3]	7.3	8.3	14.5	[40]
Iron	(mg/kg)	2000	[12500]	[6020]	[3740]	[2530]	[8290]
Magnesium	(mg/kg)		273	153	1410	179	6990
Manganese	(mg/kg)		51.8	10	27.4	10	44.3
Nickel	(mg/kg)	13	3.1 B	3.8 B	3.5 B	6.8	8.7 E
Potassium	(mg/kg)		226	122	199	94.7	183 B
Sodium	(mg/kg)		114	16.8 U	776	189	137
Thallium	(mg/kg)		0.3 U	0.34 U	0.28 U	0.35 U	0.31 U
Vanadium	(mg/kg)	150	3.7 B	5.4 B	4.2 B	3.3 B	9.3
Zinc	(mg/kg)	20	[30.9]	7	[32.7]	[251]	[132]

mg/kg: milligram/kilogram
*RCRA metals and cyanide not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 11
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-27 RPSB27(2-4) 12/16/1999 2.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00
Aluminum	(mg/kg)		700	802	858	303	161
Antimony	(mg/kg)		0.25 U	0.24 B	0.41 B	0.3 U	0.33 B
Beryllium	(mg/kg)	0.16	0.25 U	0.2 U	0.21 U	0.2 U	0.21 U
Calcium	(mg/kg)		252	958	1480	294	49.6 B
Cobalt	(mg/kg)	30	1 B	7.2	1.5 B	0.5 B	0.31 U
Copper	(mg/kg)	25	[37.4]	6.4	4.7 B	1.1 B	0.82 B
Iron	(mg/kg)	2000	[4570]	[2510]	[3030]	1290	1310
Magnesium	(mg/kg)		210	299	386	135	69.1
Manganese	(mg/kg)		12	49	17.6 B	9.6	4.8 B
Nickel	(mg/kg)	13	4.1 B	[17.8]	5.2 B	1.1 B	0.71 B
Potassium	(mg/kg)		247	177 B	246	125 B	66.4 B
Sodium	(mg/kg)		18.6 U	27.8 B	59.9	37.2 B	54.5 B
Thallium	(mg/kg)		0.37 U	0.3 U	0.32 U	0.3 U	0.31 U
Vanadium	(mg/kg)	150	6.7	3.6 B	4.6 B	0.49 B	0.21 U
Zinc	(mg/kg)	20	[25.1]	[112]	12.8 E	3.1 B	4.2 B

mg/kg: milligram/kilogram
*RCRA metals and cyanide not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 11
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00
Aluminum	(mg/kg)		936	1990	259	189	322
Antimony	(mg/kg)		0.17 U	0.15 U	0.23 B	0.24 B	0.2 B
Beryllium	(mg/kg)	0.16	0.17 U	0.15 U	0.19 U	0.22 U	0.19 U
Calcium	(mg/kg)		280	8290	276	90.9	2770
Cobalt	(mg/kg)	30	3.3 B	2.6 B	0.97 B	0.33 U	0.93 B
Copper	(mg/kg)	25	21.5	13.1	6.4	6.4	1.8 B
Iron	(mg/kg)	2000	[16800]	[5100]	[2050]	610	1040
Magnesium	(mg/kg)		103	2830	62.6	66.9	129
Manganese	(mg/kg)		13.5	76.6	6.8	4.3 B	18.2
Nickel	(mg/kg)	13	10	7.4	2.1 B	0.65 B	2 B
Potassium	(mg/kg)		229	261	62 B	105	74.9 B
Sodium	(mg/kg)		13.1 U	11 U	51.6 B	16.5 U	14.5 U
Thallium	(mg/kg)		0.26 U	0.22 U	0.28 U	0.33 U	0.29 U
Vanadium	(mg/kg)	150	32.1	19.3	1.3 B	0.94 B	2.1 B
Zinc	(mg/kg)	20	10	[31.4]	[22.1]	1.5 BE	12.9

mg/kg: milligram/kilogram
*RCRA metals and cyanide not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 11
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS*

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00
Aluminum	(mg/kg)		318	776
Antimony	(mg/kg)		0.41 B	0.21 U
Beryllium	(mg/kg)	0.16	0.21 U	0.21 U
Calcium	(mg/kg)		880	577
Cobalt	(mg/kg)	30	0.59 B	1.7 B
Copper	(mg/kg)	25	2.4 B	12.2
Iron	(mg/kg)	2000	1050	[3720]
Magnesium	(mg/kg)		131	139
Manganese	(mg/kg)		10	13.8
Nickel	(mg/kg)	13	0.9 B	7.5 E
Potassium	(mg/kg)		89.4 B	114
Sodium	(mg/kg)		15.8 U	15.6 U
Thallium	(mg/kg)		0.32 U	0.71 B
Vanadium	(mg/kg)	150	1.4 B	40.1
Zinc	(mg/kg)	20	9.9	[21.3]

mg/kg: milligram/kilogram
*RCRA metals and cyanide not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 12
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS(PCBs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00
alpha-BHC	(mg/kg)	0.11	0.0018 U	0.003	0.019 U	0.032	0.0031
beta-BHC	(mg/kg)	0.2	0.0018 U	0.0018 U	0.019 U	0.019 U	0.0023
delta-BHC	(mg/kg)	0.3	0.0018 U	0.0018 U	0.019 U	0.019 U	0.0025
gamma-BHC (Lindane)	(mg/kg)	0.06	0.0018 U	0.0018 U	0.019 U	0.019 U	0.0059
Heptachlor	(mg/kg)	0.1	0.009	0.0018 U	0.019 U	0.049	0.0019 U
Aldrin	(mg/kg)	0.041	0.0018 U	0.0018 U	0.019 U	[0.041]	0.0078
Heptachlor epoxide	(mg/kg)	0.02	0.011	0.004	0.019 U	0.019 U	0.017
Endosulfan I	(mg/kg)	0.9	0.0018 U	0.002	0.019 U	0.036	0.0023
Dieldrin	(mg/kg)	0.044	0.0035 U	0.0044	0.038 U	[0.37]	0.0054
4,4-DDE	(mg/kg)	2.1	0.0035 U	0.0034 U	0.038 U	0.037 U	0.0037 U
Endrin	(mg/kg)	0.1	0.0035 U	0.0089	0.038 U	[0.23]	0.016
Endosulfan II	(mg/kg)	0.9	0.012	0.0036	0.038 U	0.037 U	0.021
4,4-DDD	(mg/kg)	2.9	0.0035 U	0.0034 U	0.038 U	0.1	0.029
Endosulfan sulfate	(mg/kg)	1	0.0035 U	0.0034 U	0.038 U	0.048	0.0037 U
4,4-DDT	(mg/kg)	2.1	0.0035 U	0.009	0.038 U	0.5	0.015
Methoxychlor	(mg/kg)		0.018 U	0.05	0.19 U	0.19 U	0.019 U
Endrin ketone	(mg/kg)		0.011	0.014	0.038 U	0.037 U	0.0037 U
Endrin aldehyde	(mg/kg)		0.0035 U	0.0034 U	0.038 U	0.037 U	0.0037 U
alpha-Chlordane	(mg/kg)	0.54	0.0018 U	0.0018 U	0.019 U	0.019 U	0.003
gamma-Chlordane	(mg/kg)	0.54	0.0018 U	0.0018 U	0.019 U	0.18	0.0087
Toxaphene	(mg/kg)		0.18 U	0.18 U	1.9 U	1.9 U	0.19 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 12
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS(PCBs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-12 RPSB-12 (2-4) 12/27/1999 2.00	RPSB-14 RPSB-14 (0-2) 12/13/1999 0.00	RPSB-15 RPSB-15 (3-5) 12/15/1999 3.00	RPSB-23 RPSB-23 (2-4) 01/04/2000 2.00	RPSB-24 RPSB-24 (3-5) 01/10/2000 3.00
Aroclor-1016	(mg/kg)	10	0.036 U	0.035 U	0.038 U	0.037 U	0.037 U
Aroclor-1221	(mg/kg)	10	0.036 U	0.035 U	0.038 U	0.037 U	0.037 U
Aroclor-1232	(mg/kg)	10	0.036 U	0.035 U	0.038 U	0.037 U	0.037 U
Aroclor-1242	(mg/kg)	10	0.11	0.18	0.038 U	0.037 U	0.037 U
Aroclor-1248	(mg/kg)	10	0.036 U	0.035 U	0.038 U	0.037 U	0.037 U
Aroclor-1254	(mg/kg)	10	0.036 U	0.035 U	0.038 U	0.32	0.037 U
Aroclor-1260	(mg/kg)	10	0.036 U	0.24	0.038 U	0.037 U	0.037 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 12
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS(PCBs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-27 RPSB-27 (2-4) 12/16/1999 2.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00
alpha-BHC	(mg/kg)	0.11	0.0021 U	0.0017 U	0.019 U	0.0022 P	0.0020 U
beta-BHC	(mg/kg)	0.2	0.0021 U	0.0017 U	0.019 U	0.0021 U	0.0020 U
delta-BHC	(mg/kg)	0.3	0.0021 U	0.0017 U	0.053	0.014 P	0.028
gamma-BHC (Lindane)	(mg/kg)	0.06	0.0021 U	0.0017 U	0.019 U	0.0021 U	0.0020 U
Heptachlor	(mg/kg)	0.1	0.0021 U	0.0017 U	0.019 U	0.0021 U	0.0020 U
Aldrin	(mg/kg)	0.041	0.012	0.0017 U	0.019 U	0.0021 U	0.0020 U
Heptachlor epoxide	(mg/kg)	0.02	0.0021 U	0.0017 U	[0.07]	0.0021 U	0.0020 U
Endosulfan I	(mg/kg)	0.9	0.0021 U	0.0017 U	0.019 U	0.0024 P	0.0020 U
Dieldrin	(mg/kg)	0.044	0.0041 U	0.0034 U	0.037 U	0.042	[0.045]
4,4-DDE	(mg/kg)	2.1	0.0088	0.0034 U	0.037 U	0.004 U	0.0039 U
Endrin	(mg/kg)	0.1	0.0041 U	0.035	0.037 U	0.004 U	0.0039 U
Endosulfan II	(mg/kg)	0.9	0.0041 U	0.0053	0.037 U	0.004 U	0.0039 U
4,4-DDD	(mg/kg)	2.9	0.0041 U	0.0034 U	0.037 U	0.012 P	0.0087
Endosulfan sulfate	(mg/kg)	1	0.018	0.0082	0.037 U	0.047 P	0.039
4,4-DDT	(mg/kg)	2.1	0.0071	0.0034 U	0.052	0.26 PE	0.37 E
Methoxychlor	(mg/kg)		0.021 U	0.017 U	0.19 U	0.021 U	0.032
Endrin ketone	(mg/kg)		0.0041 U	0.0034 U	0.037 U	0.004 U	0.0039 U
Endrin aldehyde	(mg/kg)		0.013	0.0034 U	0.037 U	0.004 U	0.0039 U
alpha-Chlordane	(mg/kg)	0.54	0.0021 U	0.0017 U	0.019 U	0.0021 U	0.0020 U
gamma-Chlordane	(mg/kg)	0.54	0.011	0.0017 U	0.019 U	0.075 PE	0.0020 U
Toxaphene	(mg/kg)		0.21 U	0.17 U	1.9 U	0.21 U	0.2 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 12
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS(PCBs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-25 RPSB-25 (4-6) 12/21/1999 4.00	RPSB-26 RPSB-26 (4-6) 01/19/2000 4.00	RPSB-27 RPSB-27 (2-4) 12/16/1999 2.00	RPSB-29 RPSB-29 (7-9) 02/02/2000 7.00	RPSB-30 RPSB-30 (9-11) 01/31/2000 9.00
Aroclor-1016	(mg/kg)	10	0.041 U	0.034 U	0.037 U	0.04 U	0.039 U
Aroclor-1221	(mg/kg)	10	0.041 U	0.034 U	0.037 U	0.04 U	0.039 U
Aroclor-1232	(mg/kg)	10	0.041 U	0.034 U	0.037 U	0.04 U	0.039 U
Aroclor-1242	(mg/kg)	10	0.041 U	0.034 U	0.037 U	0.04 U	0.039 U
Aroclor-1248	(mg/kg)	10	0.041 U	0.034 U	0.037 U	0.04 U	0.039 U
Aroclor-1254	(mg/kg)	10	0.041 U	0.034 U	0.037 U	0.04 U	0.039 U
Aroclor-1260	(mg/kg)	10	0.047	0.034 U	0.037 U	0.04 U	0.039 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 12
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS(PCBs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00
alpha-BHC	(mg/kg)	0.11	0.0019 U	0.02 U	0.0021 U	0.02 U	0.0018 U
beta-BHC	(mg/kg)	0.2	0.0019 U	0.02 U	0.0021 U	0.02 U	0.0018 U
delta-BHC	(mg/kg)	0.3	0.0019 U	0.02 U	0.0088	0.29	0.0018 U
gamma-BHC (Lindane)	(mg/kg)	0.06	0.0019 U	0.02 U	0.0021 U	0.02 U	0.0018 U
Heptachlor	(mg/kg)	0.1	0.0019 U	0.02 U	0.0039	0.023	0.0018 U
Aldrin	(mg/kg)	0.041	0.0019 U	0.02 U	0.0051	0.02 U	0.0018 U
Heptachlor epoxide	(mg/kg)	0.02	0.0032	0.02 U	0.0041	0.02 U	0.0018 U
Endosulfan I	(mg/kg)	0.9	0.0019 U	0.02 U	0.0021 U	0.02 U	0.0018 U
Dieldrin	(mg/kg)	0.044	0.0036 U	0.039 U	0.0041 U	0.04 U	0.0034 U
4,4-DDE	(mg/kg)	2.1	0.0036 U	0.039 U	0.0041 U	0.04 U	0.0034 U
Endrin	(mg/kg)	0.1	0.0036 U	0.039 U	0.0041 U	0.04 U	0.0034 U
Endosulfan II	(mg/kg)	0.9	0.0036 U	0.039 U	0.0041 U	0.062	0.0034 U
4,4-DDD	(mg/kg)	2.9	0.0036 U	0.039 U	0.0041 U	0.068	0.0034 U
Endosulfan sulfate	(mg/kg)	1	0.0036 U	0.039 U	0.0041 U	0.082	0.0034 U
4,4-DDT	(mg/kg)	2.1	0.0036 U	0.039 U	0.0041 U	0.11	0.0034 U
Methoxychlor	(mg/kg)		0.019 U	0.2 U	0.021 U	0.2 U	0.018 U
Endrin ketone	(mg/kg)		0.0036 U	0.039 U	0.0041 U	0.04 U	0.0034 U
Endrin aldehyde	(mg/kg)		0.0036 U	0.039 U	0.0041 U	0.04 U	0.0034 U
alpha-Chlordane	(mg/kg)	0.54	0.0019 U	0.02 U	0.0021 U	0.02 U	0.0018 U
gamma-Chlordane	(mg/kg)	0.54	0.0019 U	0.02 U	0.0021 U	0.02 U	0.0018 U
Toxaphene	(mg/kg)		0.19 U	2 U	0.21 U	2 U	0.18 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 12
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS(PCBs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-33 RPSB-33 (2-4) 12/22/1999 2.00	RPSB-35 RPSB-35 (0-2) 01/03/2000 0.00	RPSB-38 RPSB-38 (4-6) 01/13/2000 4.00	RPSB-41 RPSB-41 (7-9) 12/15/1999 7.00	RPSB-42 RPSB-42 (5-7) 01/19/2000 5.00
Aroclor-1016	(mg/kg)	10	0.037 U	0.039 U	0.04 U	0.04 U	0.034 U
Aroclor-1221	(mg/kg)	10	0.037 U	0.039 U	0.04 U	0.04 U	0.034 U
Aroclor-1232	(mg/kg)	10	0.037 U	0.039 U	0.04 U	0.04 U	0.034 U
Aroclor-1242	(mg/kg)	10	0.037 U	0.039 U	0.04 U	0.04 U	0.034 U
Aroclor-1248	(mg/kg)	10	0.037 U	0.039 U	0.04 U	0.04 U	0.034 U
Aroclor-1254	(mg/kg)	10	0.037 U	0.039 U	0.04 U	0.04 U	0.034 U
Aroclor-1260	(mg/kg)	10	0.037 U	0.039 U	0.04 U	0.04 U	0.034 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 12
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS(PCBs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00
alpha-BHC	(mg/kg)	0.11	0.0021 U	0.0019 U
beta-BHC	(mg/kg)	0.2	0.0021 U	0.0032
delta-BHC	(mg/kg)	0.3	0.0055	0.0038
gamma-BHC (Lindane)	(mg/kg)	0.06	0.0021 U	0.0019 U
Heptachlor	(mg/kg)	0.1	0.0021 U	0.0019 U
Aldrin	(mg/kg)	0.041	0.0021 U	0.0019 U
Heptachlor epoxide	(mg/kg)	0.02	0.0041	0.0019 U
Endosulfan I	(mg/kg)	0.9	0.0062	0.0019 U
Dieldrin	(mg/kg)	0.044	0.0040 U	0.0036 U
4,4-DDE	(mg/kg)	2.1	0.0040 U	0.0036 U
Endrin	(mg/kg)	0.1	0.0040 U	0.0036 U
Endosulfan II	(mg/kg)	0.9	0.0040 U	0.0061
4,4-DDD	(mg/kg)	2.9	0.0059	0.0054
Endosulfan sulfate	(mg/kg)	1	0.0099	0.0036 U
4,4-DDT	(mg/kg)	2.1	0.0088	0.0036 U
Methoxychlor	(mg/kg)		0.021 U	0.019 U
Endrin ketone	(mg/kg)		0.004 U	0.0036 U
Endrin aldehyde	(mg/kg)		0.004 U	0.0036 U
alpha-Chlordane	(mg/kg)	0.54	0.0021 U	0.0019 U
gamma-Chlordane	(mg/kg)	0.54	0.0032	0.0019 U
Toxaphene	(mg/kg)		0.21 U	0.19 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 12
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS(PCBs)

PERIOD: From 12/01/1999 thru 03/15/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-48 RPSB-48 (4-6) 01/19/2000 4.00	RPSB-51 RPSB-51 (5-7) 01/10/2000 5.00
Aroclor-1016	(mg/kg)	10	0.041 U	0.036 U
Aroclor-1221	(mg/kg)	10	0.041 U	0.036 U
Aroclor-1232	(mg/kg)	10	0.041 U	0.036 U
Aroclor-1242	(mg/kg)	10	0.041 U	0.036 U
Aroclor-1248	(mg/kg)	10	0.041 U	0.036 U
Aroclor-1254	(mg/kg)	10	0.041 U	0.036 U
Aroclor-1260	(mg/kg)	10	0.041 U	0.036 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 13
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-64 RPSB-64(4-6) 10/11/1999 4.00	RPSB-64 RPSB-64(10-12) 10/11/1999 10.00	RPSB-64 RPSB-64(14-16) 10/11/1999 14.00	RPSB-65 RPSB-65(6-8) 10/12/1999 6.00	RPSB-65 RPSB-65(10-12) 10/12/1999 10.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 13
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-65 RPSB-65(14-16) 10/12/1999 14.00	RPSB-66 RPSB-66(6-8) 10/12/1999 6.00	RPSB-66 RPSB-66(10-12) 10/12/1999 10.00	RPSB-66 RPSB-66(14-16) 10/12/1999 14.00	RPSB-67 RPSB-67(2-4) 10/11/1999 2.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.007	0.002	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.11 D	0.11	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.002	0.002	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.023	0.35	0.12	0.001 U
Total BTEX	(mg/kg)		0.00	0.23	0.469	0.234	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 13
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-67 RPSB-67(10-12) 10/11/1999 10.00	RPSB-67 RPSB-67(12-14) 10/11/1999 12.00	RPSB-68 RPSB-68(6-8) 10/11/1999 6.00	RPSB-68 RPSB-68(8-10) 10/11/1999 8.00	RPSB-68 RPSB-68(14-16) 10/11/1999 14.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001 U	0.001 U	0.002
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.00	0.002

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 13
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-69 RPSB-69(6-8) 10/12/1999 6.00	RPSB-69 RPSB-69(10-12) 10/12/1999 10.00	RPSB-69 RPSB-69(14-16) 10/12/1999 14.00	RPSM-03 RPSM(7-9) 10/12/1999 0.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.016	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.062	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.14	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.079	0.001 U
Total BTEX	(mg/kg)		0.00	0.00	0.297	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 14
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-64 RPSB-64(4-6) 10/11/1999 4.00	RPSB-64 RPSB-64(10-12) 10/11/1999 10.00	RPSB-64 RPSB-64(14-16) 10/11/1999 14.00	RPSB-65 RPSB-65(6-8) 10/12/1999 6.00	RPSB-65 RPSB-65(10-12) 10/12/1999 10.00
Benzo(a)pyrene	(mg/kg)	0.061	0.34 U	0.4 U	0.39 U	0.41 U	[0.098] J
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.34 U	0.4 U	0.39 U	0.41 U	0.38 U
Benzo(a)anthracene	(mg/kg)	0.224	0.34 U	0.4 U	0.39 U	0.41 U	0.092 J
Acenaphthene	(mg/kg)	50	0.34 U	0.4 U	0.39 U	0.41 U	0.052 J
Phenanthrene	(mg/kg)	50	0.34 U	0.4 U	0.39 U	0.41 U	0.38 U
Fluorene	(mg/kg)	50	0.34 U	0.4 U	0.39 U	0.41 U	0.38 U
Naphthalene	(mg/kg)	13	0.34 U	0.4 U	0.39 U	0.11 J	0.38 U
2-Methylnaphthalene	(mg/kg)	36.4	0.34 U	0.4 U	0.39 U	0.15 J	0.38 U
Anthracene	(mg/kg)	50	0.34 U	0.4 U	0.39 U	0.41 U	0.38 U
Pyrene	(mg/kg)	50	0.34 U	0.4 U	0.39 U	0.41 U	0.15 J
Dibenzofuran	(mg/kg)	6.2	0.34 U	0.4 U	0.39 U	0.41 U	0.38 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.34 U	0.4 U	0.39 U	0.41 U	0.38 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.34 U	0.4 U	0.39 U	0.41 U	0.38 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.34 U	0.4 U	0.39 U	0.41 U	0.078 J
Fluoranthene	(mg/kg)	50	0.34 U	0.4 U	0.39 U	0.41 U	0.055 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.34 U	0.4 U	0.39 U	0.41 U	0.04 J
Acenaphthylene	(mg/kg)	41	0.34 U	0.4 U	0.39 U	0.41 U	0.043 J
Chrysene	(mg/kg)	0.4	0.34 U	0.4 U	0.39 U	0.41 U	0.11 J
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	0.00	1.120
Total PAHs	(mg/kg)	500	0.00	0.00	0.00	0.26	1.420

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 14
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-65 RPSB-65(14-16) 10/12/1999 14.00	RPSB-66 RPSB-66(6-8) 10/12/1999 6.00	RPSB-66 RPSB-66(10-12) 10/12/1999 10.00	RPSB-66 RPSB-66(14-16) 10/12/1999 14.00	RPSB-67 RPSB-67(2-4) 10/11/1999 2.00
Benzo(a)pyrene	(mg/kg)	0.061	0.39 U	[4.2]	[0.25] J	0.39 U	[17] J
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.39 U	[0.37] J	0.41 U	0.39 U	[2.8] J
Benzo(a)anthracene	(mg/kg)	0.224	0.39 U	[8.1]	[0.42]	0.39 U	[42]
Acenaphthene	(mg/kg)	50	0.39 U	11 J	1.8 J	0.052 J	0.34 U
Phenanthrene	(mg/kg)	50	0.39 U	10 J	2 J	0.058 J	6
Fluorene	(mg/kg)	50	0.39 U	10	0.75	0.39 U	1.2 J
Naphthalene	(mg/kg)	13	0.39 U	2.8 J	3.1 J	0.18 J	0.12 J
2-Methylnaphthalene	(mg/kg)	36.4	0.39 U	1.3 J	0.31 J	0.39 U	0.22 J
Anthracene	(mg/kg)	50	0.39 U	5.5	0.48	0.39 U	4
Pyrene	(mg/kg)	50	0.39 U	12 J	1.2 J	0.39 U	[79]
Dibenzofuran	(mg/kg)	6.2	0.39 U	0.74	0.097 J	0.39 U	0.34 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.39 U	0.8	0.12 J	0.39 U	9.3
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.39 U	0.85	0.093 J	0.39 U	[7.4]
Benzo(b)fluoranthene	(mg/kg)	1.1	0.39 U	[4.2]	0.22 J	0.39 U	[23] J
Fluoranthene	(mg/kg)	50	0.39 U	8.6	0.96	0.39 U	12 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.39 U	[2.1] J	0.085 J	0.39 U	[9.4]
Acenaphthylene	(mg/kg)	41	0.39 U	3.6 J	0.14 J	0.39 U	6.4
Chrysene	(mg/kg)	0.4	0.39 U	[6.6]	0.38 J	0.39 U	[29] J
Total CAPAHs	(mg/kg)	10	0.00	[27.820]	1.448	0.00	[91.90]
Total PAHs	(mg/kg)	500	0.00	108.560	12.405	0.29	281.240

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 14
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-67 RPSB-67(10-12) 10/11/1999 10.00	RPSB-67 RPSB-67(12-14) 10/11/1999 12.00	RPSB-68 RPSB-68(6-8) 10/11/1999 6.00	RPSB-68 RPSB-68(8-10) 10/11/1999 8.00	RPSB-68 RPSB-68(14-16) 10/11/1999 14.00
Benzo(a)pyrene	(mg/kg)	0.061	0.051 J	0.41 U	0.39 U	[0.089] J	0.38 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.39 U	0.41 U	0.39 U	0.38 U	0.38 U
Benzo(a)anthracene	(mg/kg)	0.224	0.052 J	0.41 U	0.053 J	0.12 J	0.38 U
Acenaphthene	(mg/kg)	50	0.39 U	0.41 U	0.39 U	0.38 U	0.38 U
Phenanthrene	(mg/kg)	50	0.048 J	0.41 U	0.39 U	0.071 J	0.38 U
Fluorene	(mg/kg)	50	0.39 U	0.41 U	0.39 U	0.38 U	0.38 U
Naphthalene	(mg/kg)	13	0.39 U	0.41 U	0.39 U	0.38 U	0.041 J
2-Methylnaphthalene	(mg/kg)	36.4	0.39 U	0.41 U	0.39 U	0.38 U	0.38 U
Anthracene	(mg/kg)	50	0.39 U	0.41 U	0.39 U	0.043 J	0.38 U
Pyrene	(mg/kg)	50	0.087 J	0.41 U	0.098 J	0.22 J	0.38 U
Dibenzofuran	(mg/kg)	6.2	0.39 U	0.41 U	0.39 U	0.38 U	0.38 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.39 U	0.41 U	0.06 J	0.086 J	0.38 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.39 U	0.41 U	0.047 J	0.064 J	0.38 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.047 J	0.41 U	0.076 J	0.12 J	0.38 U
Fluoranthene	(mg/kg)	50	0.065 J	0.41 U	0.05 J	0.13 J	0.38 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.39 U	0.41 U	0.042 J	0.049 J	0.38 U
Acenaphthylene	(mg/kg)	41	0.39 U	0.41 U	0.1 J	0.38 U	0.38 U
Chrysene	(mg/kg)	0.4	0.064 J	0.41 U	0.087 J	0.15 J	0.38 U
Total CAPAHs	(mg/kg)	10	0.214	0.00	0.305	0.592	0.00
Total PAHs	(mg/kg)	500	0.414	0.00	0.613	1.142	0.04

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 14
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-69 RPSB-69(6-8) 10/12/1999 6.00	RPSB-69 RPSB-69(10-12) 10/12/1999 10.00	RPSB-69 RPSB-69(14-16) 10/12/1999 14.00	RPSM-03 RPSM(7-9) 10/12/1999 0.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.170] J	0.41 U	0.42 U	0.41 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.41 U	0.41 U	0.42 U	0.41 U
Benzo(a)anthracene	(mg/kg)	0.224	0.095 J	0.065 J	0.42 U	0.41 U
Acenaphthene	(mg/kg)	50	0.41 U	0.41 U	0.42 U	0.41 U
Phenanthrene	(mg/kg)	50	0.047 J	0.41 U	0.42 U	0.41 U
Fluorene	(mg/kg)	50	0.41 U	0.41 U	0.42 U	0.41 U
Naphthalene	(mg/kg)	13	0.41 U	0.41 U	0.054 J	0.41 U
2-Methylnaphthalene	(mg/kg)	36.4	0.41 U	0.41 U	0.42 U	0.41 U
Anthracene	(mg/kg)	50	0.41 U	0.41 U	0.42 U	0.41 U
Pyrene	(mg/kg)	50	0.180 J	0.12 J	0.42 U	0.41 U
Dibenzofuran	(mg/kg)	6.2	0.41 U	0.41 U	0.42 U	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.048 J	0.41 U	0.42 U	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.040 J	0.41 U	0.42 U	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.120 J	0.41 U	0.42 U	0.41 U
Fluoranthene	(mg/kg)	50	0.120 J	0.095 J	0.42 U	0.41 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.049 J	0.41 U	0.42 U	0.41 U
Acenaphthylene	(mg/kg)	41	0.41 U	0.049 J	0.42 U	0.41 U
Chrysene	(mg/kg)	0.4	0.110 J	0.089 J	0.42 U	0.41 U
Total CAPAHs	(mg/kg)	10	0.584	0.154	0.00	0.00
Total PAHs	(mg/kg)	500	0.979	0.418	0.054	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 15
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-64 RPSB-64(4-6) 10/11/1999 4.00	RPSB-64 RPSB-64(10-12) 10/11/1999 10.00	RPSB-64 RPSB-64(14-16) 10/11/1999 14.00	RPSB-65 RPSB-65(6-8) 10/12/1999 6.00	RPSB-65 RPSB-65(10-12) 10/12/1999 10.00
Arsenic	(mg/kg)	7.5	0.57 B	0.53 B	0.39 B	0.62 B	0.84 B
Barium	(mg/kg)	300	1.5 B	3.8 B	1.1 B	2.5 B	4.5 B
Cadmium	(mg/kg)	10	0.24 B	0.22 U	0.17 U	0.23 U	0.24 U
Chromium	(mg/kg)	50	4.7	3.2	1.4 B	1.8 B	4.3
Lead	(mg/kg)	500	0.84 B	1.1 B	0.48 B	0.67 B	1.3
Mercury	(mg/kg)	0.10	0.049 U	0.054 U	0.055 U	0.054 U	0.053 U
Selenium	(mg/kg)	2	0.69 B	0.45 U	0.35 U	0.47 U	0.47 U
Silver	(mg/kg)		0.7 B	0.33 U	0.26 U	0.35 U	0.35 U
Cyanide, total	(mg/kg)		0.46 B	0.43 B	0.056 U	1	2

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 15
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-65 RPSB-65(14-16) 10/12/1999 14.00	RPSB-66 RPSB-66(6-8) 10/12/1999 6.00	RPSB-66 RPSB-66(10-12) 10/12/1999 10.00	RPSB-66 RPSB-66(14-16) 10/12/1999 14.00	RPSB-67 RPSB-67(2-4) 10/11/1999 2.00
Arsenic	(mg/kg)	7.5	0.86 B	0.41 B	0.4 B	0.51 B	1.2
Barium	(mg/kg)	300	2.2 U	2.7 B	5.3 B	1.4 B	3.2 B
Cadmium	(mg/kg)	10	0.21 U	0.21 U	0.24 U	0.2 U	0.19 U
Chromium	(mg/kg)	50	2.1	2.7	3.3	1.2 B	1.4 B
Lead	(mg/kg)	500	0.77 B	2.6	13.3	0.59 B	2
Mercury	(mg/kg)	0.10	0.049 U	0.06 U	0.049 U	0.057 U	0.052 U
Selenium	(mg/kg)	2	0.42 U	0.43 U	0.48 U	0.4 U	0.38 U
Silver	(mg/kg)		0.32 U	0.32 U	0.36 U	0.3 U	0.28 U
Cyanide, total	(mg/kg)		0.68 B	0.94 B	0.059 U	0.06 U	0.8 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 15
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-67 RPSB-67(10-12) 10/11/1999 10.00	RPSB-67 RPSB-67(12-14) 10/11/1999 12.00	RPSB-68 RPSB-68(6-8) 10/11/1999 6.00	RPSB-68 RPSB-68(8-10) 10/11/1999 8.00	RPSB-68 RPSB-68(14-16) 10/11/1999 14.00
Arsenic	(mg/kg)	7.5	0.47 B	0.45 B	0.82 B	0.43 B	0.61 B
Barium	(mg/kg)	300	3.6 B	2.3 B	6.7 B	6.4 B	1.3 B
Cadmium	(mg/kg)	10	0.23 U	0.21 U	0.2 U	0.23 U	0.23 U
Chromium	(mg/kg)	50	2.7	2.3	2.5	3.3	1.9 B
Lead	(mg/kg)	500	1 B	1.5	4.7	3.1	0.4 B
Mercury	(mg/kg)	0.10	0.057 U	0.055 U	0.047 U	0.059 U	0.05 U
Selenium	(mg/kg)	2	0.45 U	0.41 U	0.4 U	0.45 U	0.46 U
Silver	(mg/kg)		0.34 U	0.31 U	0.3 U	0.34 U	0.34 U
Cyanide, total	(mg/kg)		0.87 B	0.35 B	0.11 B	2.8	0.056 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 15
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-69 RPSB-69(6-8) 10/12/1999 6.00	RPSB-69 RPSB-69(10-12) 10/12/1999 10.00	RPSB-69 RPSB-69(14-16) 10/12/1999 14.00	RPSM-03 RPSM(7-9) 10/12/1999 0.00
Arsenic	(mg/kg)	7.5	1.7	1.2	0.31 B	0.55 B
Barium	(mg/kg)	300	10.5	9.6 B	0.83 B	2.9 B
Cadmium	(mg/kg)	10	0.21 U	0.3 B	0.2 U	0.17 U
Chromium	(mg/kg)	50	4	8.2	1.3 B	5.5
Lead	(mg/kg)	500	26.2	8.5	0.3 U	1.7
Mercury	(mg/kg)	0.10	0.058 U	0.054 U	0.053 U	0.05 U
Selenium	(mg/kg)	2	0.43 U	0.42 U	0.4 U	0.34 U
Silver	(mg/kg)		0.32 U	0.32 U	0.3 U	0.25 U
Cyanide, total	(mg/kg)		0.94	0.97	0.8 B	12.2

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 16
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-64 RPSB-64 (4-6) 10/11/1999 4.00	RPSB-64 RPSB-64 (10-12) 10/11/1999 10.00	RPSB-64 RPSB-64 (14-16) 10/11/1999 14.00	RPSB-65 RPSB-65 (6-8) 10/12/1999 6.00	RPSB-65 RPSB-65 (10-12) 10/12/1999 10.00	RPSB-65 RPSB-65 (14-16) 10/12/1999 14.00
Total Phenols	(mg/kg)	12 U	12 U	12 U	12 U	12 U	12 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---:Not analyzed

TABLE 16
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-66 RPSB-66 (6-8) 10/12/1999 6.00	RPSB-66 RPSB-66 (10-12) 10/12/1999 10.00	RPSB-66 RPSB-66 (14-16) 10/12/1999 14.00	RPSB-67 RPSB-67 (2-4) 10/11/1999 2.00	RPSB-67 RPSB-67 (10-12) 10/11/1999 10.00	RPSB-67 RPSB-67 (12-14) 10/11/1999 12.00
Total Phenols	(mg/kg)	12 U	12 U	12 U	12 U	12 U	12 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---:Not analyzed

TABLE 16
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-68 RPSB-68 (6-8) 10/11/1999 6.00	RPSB-68 RPSB-68 (8-10) 10/11/1999 8.00	RPSB-68 RPSB-68 (14-16) 10/11/1999 14.00	RPSB-69 RPSB-69 (6-8) 10/12/1999 6.00	RPSB-69 RPSB-69 (10-12) 10/12/1999 10.00	RPSB-69 RPSB-69 (14-16) 10/12/1999 14.00
Total Phenols	(mg/kg)	12 U	12 U	12 U	12 U	12 U	12 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---:Not analyzed

TABLE 16
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSTATION INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 10/11/1999 thru 10/12/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	RPSM-03
	SAMPLE ID	RPSM (7-9)
	DATE	10/12/1999
	DEPTH (ft)	0.00
Total Phenols	(mg/kg)	12 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---:Not analyzed

TABLE 17
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
ON-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/08/2001 thru 11/27/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-89 RPSB-89(7-9) 11/13/2001 7.00	RPSB-89 RPSB-89(49-51) 11/14/2001 49.00	RPSB-89 RPSB-89(59-61) 11/14/2001 59.00	RPSB-92A PSB-92A(98-100) 11/08/2001 98.00	RPSB-97 RPSB-97(5-7) 11/26/2001 5.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	[0.43]	0.6 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.019	0.001	[8]	[59]
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.002	[1.6]	[110] D
Xylene (total)	(mg/kg)	1.2	0.001 U	0.006	0.001 U	[17]	[320] D
Total BTEX	(mg/kg)		0.00	0.025	0.003	27.03	489.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---:Not analyzed

TABLE 17
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
ON-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/08/2001 thru 11/27/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-97 RPSB-97(31-33) 11/26/2001 31.00	RPSB-97 RPSB-97(47-49) 11/27/2001 47.00	RPSB-97 RPSB-97(57-59) 11/27/2001 57.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.002	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.029	0.002
Xylene (total)	(mg/kg)	1.2	0.001 U	0.021	0.001 U
Total BTEX	(mg/kg)		0.00	0.052	0.002

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---:Not analyzed

TABLE 18
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
ON-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/08/2001 thru 11/27/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-89 RPSB-89(7-9) 11/13/2001 7.00	RPSB-89 RPSB-89(49-51) 11/14/2001 49.00	RPSB-89 RPSB-89(59-61) 11/14/2001 59.00	RPSB-92A RPSB-92A(98-100 11/08/2001 98.00	RPSB-97 RPSB-97(5-7) 11/26/2001 5.00
Benzo(a)pyrene	(mg/kg)	0.061	0.058 J	0.42 U	0.38 U	[19]	[0.49]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	0.42 U	0.38 U	[2] J	[0.23] J
Benzo(a)anthracene	(mg/kg)	0.224	0.048 J	0.42 U	0.38 U	[20]	[1.2]
Acenaphthene	(mg/kg)	50	0.4 U	0.083 J	0.38 U	8.4	0.53
Phenanthrene	(mg/kg)	50	0.26 J	0.24 J	0.38 U	[200] D	9.3 D
Fluorene	(mg/kg)	50	0.054 J	0.42 U	0.38 U	[56]	2.2
Naphthalene	(mg/kg)	13	0.4 U	0.049 J	0.38 U	[400] D	[37] D
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	0.42 U	0.38 U	[210] D	13 D
Anthracene	(mg/kg)	50	0.071 J	0.055 J	0.38 U	38	0.94
Pyrene	(mg/kg)	50	0.19 J	0.088 J	0.38 U	[51]	4.4
Dibenzofuran	(mg/kg)	6.2	0.4 U	0.42 U	0.38 U	5.5	0.45
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	0.42 U	0.38 U	5.3	0.67
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	0.42 U	0.38 U	[5.4]	0.67
Benzo(b)fluoranthene	(mg/kg)	1.1	0.05 J	0.42 U	0.38 U	[14]	[1.6]
Fluoranthene	(mg/kg)	50	0.087 J	0.064 J	0.38 U	35	2.7
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	0.42 U	0.38 U	[6.4]	0.62
Acenaphthylene	(mg/kg)	41	0.065 J	0.42 U	0.38 U	[130] D	1.6
Chrysene	(mg/kg)	0.4	0.065 J	0.42 U	0.38 U	[19]	[1.7]
Total CAPAHs	(mg/kg)	10	0.221	0.00	0.00	[85.80]	6.51
Total PAHs	(mg/kg)	500	0.948	0.579	0.00	[1225.00]	79.30

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 18
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
ON-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/08/2001 thru 11/27/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-97 RPSB-97(31-33) 11/26/2001 31.00	RPSB-97 RPSB-97(47-49) 11/27/2001 47.00	RPSB-97 RPSB-97(57-59) 11/27/2001 57.00
Benzo(a)pyrene	(mg/kg)	0.061	0.42 U	0.41 U	0.41 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.42 U	0.41 U	0.41 U
Benzo(a)anthracene	(mg/kg)	0.224	0.42 U	0.41 U	0.41 U
Acenaphthene	(mg/kg)	50	0.42 U	0.41 U	0.41 U
Phenanthrene	(mg/kg)	50	0.42 U	0.41 U	0.41 U
Fluorene	(mg/kg)	50	0.42 U	0.41 U	0.41 U
Naphthalene	(mg/kg)	13	0.42 U	0.41 U	0.41 U
2-Methylnaphthalene	(mg/kg)	36.4	0.42 U	0.41 U	0.41 U
Anthracene	(mg/kg)	50	0.42 U	0.41 U	0.41 U
Pyrene	(mg/kg)	50	0.42 U	0.41 U	0.41 U
Dibenzofuran	(mg/kg)	6.2	0.42 U	0.41 U	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.42 U	0.41 U	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.42 U	0.41 U	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.42 U	0.41 U	0.41 U
Fluoranthene	(mg/kg)	50	0.42 U	0.41 U	0.41 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.42 U	0.41 U	0.41 U
Acenaphthylene	(mg/kg)	41	0.42 U	0.41 U	0.41 U
Chrysene	(mg/kg)	0.4	0.42 U	0.41 U	0.41 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 19
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
ON-SITE SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE

PERIOD: From 11/08/2001 thru 11/27/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-89 RPSB-89(7-9) 11/13/2001 7.00	RPSB-89 RPSB-89(49-51) 11/14/2001 49.00	RPSB-89 RPSB-89(59-61) 11/14/2001 59.00	RPSB-92A RPSB-92A(98-100 11/08/2001 98.00	RPSB-97 RPSB-97(5-7) 11/26/2001 5.00	RPSB-97 RPSB-97(31-33) 11/26/2001 31.00
Cyanide	(mg/kg)	(0.51) B	7 U	7 U	7 U	1.2 B	0.27 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 19
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
ON-SITE SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE

PERIOD: From 11/08/2001 thru 11/27/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	RPSB-97	RPSB-97
	SAMPLE ID	RPSB-97(47-49)	RPSB-97(57-59)
	DATE	11/27/2001	11/27/2001
	DEPTH (ft)	47.00	57.00
Cyanide	(mg/kg)	0.30 U	0.29 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 20
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/07/2000	MW-03 MW-03 03/06/2000	MW-A MW-A 03/07/2000	PZ-01 PZ-01 03/10/2000	PZ-02 PZ-02 03/08/2000
Benzene	(ug/l)	1.0	[780]	[46000]	[5100]	[1400] D	[7000] D
Ethylbenzene	(ug/l)	5	50 U	[1300] J	[1500]	[190] D	[500] DJ
Toluene	(ug/l)	5	50 U	[23000]	500 U	[6]	[53]
Xylene (total)	(ug/l)	5	[150]	[8500]	[1300]	[150]	[1400] D
Total BTEX	(ug/l)		930.00	78800.00	7900.00	1746.00	8953.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 20
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-03 PZ-03 03/03/2000	PZ-04 PZ-04 03/09/2000	PZ-05 PZ-05 03/10/2000	PZ-06 PZ-06 03/08/2000	PZ-07 PZ-07 03/08/2000
Benzene	(ug/l)	1.0	[12]	[120]	[2500] D	[6]	5 U
Ethylbenzene	(ug/l)	5	[20]	[1500] D	[200] D	[88]	5 U
Toluene	(ug/l)	5	[780] D	[4900] D	[20]	[56]	5 U
Xylene (total)	(ug/l)	5	[300] D	[4500] D	[590] D	[970] D	5 U
Total BTEX	(ug/l)		1112.00	11020.00	3310.00	1120.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 20
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-08 PZ-08 11/16/2001	RPMW-04I RPMW-04I 03/08/2000	RPMW-04S RPMW-04S 03/08/2000	RPMW-05I RPMW-05I 03/10/2000	RPMW-05S RPMW-05S 03/10/2000
Benzene	(ug/l)	1.0	[6400]	5 U	5 U	5 U	[3200] D
Ethylbenzene	(ug/l)	5	[700]	[6]	5 U	[10]	[130] D
Toluene	(ug/l)	5	[170] J	5 U	5 U	4 J	[7]
Xylene (total)	(ug/l)	5	[3800]	[10]	5 U	[27]	[350]
Total BTEX	(ug/l)		11070.00	16.00	0.00	41.00	3687.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 20
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-06I RPMW-06I 03/07/2000	RPMW-07D RPMW-07D 03/20/2000	RPMW-07I RPMW-07I 03/13/2000	RPMW-07S RPMW-07S 03/13/2000	RPMW-08I RPMW-08I 03/09/2000
Benzene	(ug/l)	1.0	5 U	[54]	[280] D	[890]	[28]
Ethylbenzene	(ug/l)	5	5 U	[5]	[150] D	400 U	[11]
Toluene	(ug/l)	5	5 U	[21]	[7]	400 U	[53]
Xylene (total)	(ug/l)	5	5 U	[93]	[100]	[320] J	[170]
Total BTEX	(ug/l)		0.00	173.00	537.00	1210.00	262.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 20
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-08S RPMW-08S 03/08/2000	RPMW-09D RPMW-09D 03/21/2000	RPMW-09D2 RPMW-09D2 03/21/2000	RPMW-09I RPMW-09I 03/14/2000	RPMW-10I RPMW-10I 03/06/2000
Benzene	(ug/l)	1.0	[8000] D	[9300] D	[9800] D	[280] D	5 U
Ethylbenzene	(ug/l)	5	[830] D	[860] D	[180]	[650] D	2 J
Toluene	(ug/l)	5	[56]	[450] D	[250] DJ	[120]	5 U
Xylene (total)	(ug/l)	5	[1800] D	[1400] D	[470]	[690] D	3 J
Total BTEX	(ug/l)		10686.00	12010.00	10700.00	1740.00	5.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 20
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-10S RPMW-10S 03/06/2000	RPMW-12D RPMW-12D 03/20/2000	RPMW-12D2 RPMW-12D2 03/20/2000	RPMW-12I RPMW-12I 03/09/2000	RPMW-12S RPMW-12S 03/09/2000
Benzene	(ug/l)	1.0	[15000]	5 U	[1] J	5 U	[11]
Ethylbenzene	(ug/l)	5	[360] J	5 U	4 J	4 J	[160] DJ
Toluene	(ug/l)	5	[6200]	5 U	3 J	2 J	[610] D
Xylene (total)	(ug/l)	5	[830] J	2 J	[9]	[8]	[1300] D
Total BTEX	(ug/l)		22390.00	2.00	17.00	14.00	2081.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 20
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-13D RPMW-13D 03/18/2000	RPMW-13D2 RPMW-13D2 03/18/2000	RPMW-13I RPMW-13I 03/13/2000	RPMW-13S RPMW-13S 03/13/2000	RPMW-14D RPMW-14D 03/20/2000
Benzene	(ug/l)	1.0	[61]	[270] D	[1] J	[18] J	[3] J
Ethylbenzene	(ug/l)	5	[58]	[100]	[65]	[190]	[5]
Toluene	(ug/l)	5	[110]	[390] D	[7]	[160]	5 U
Xylene (total)	(ug/l)	5	[380]	[680] D	[43]	[1800] D	1 J
Total BTEX	(ug/l)		609.00	1440.00	116.00	2168.00	9.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 20
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-14I RPMW-14I 03/09/2000	RPMW-14S RPMW-14S 03/09/2000	RPMW-15I RPMW-15I 03/09/2000
Benzene	(ug/l)	1.0	[49]	[1600] D	[78]
Ethylbenzene	(ug/l)	5	[1100] D	[2300] D	[110]
Toluene	(ug/l)	5	[350] D	[490] D	[7400] D
Xylene (total)	(ug/l)	5	[2700] D	[2400] D	[14000] D
Total BTEX	(ug/l)		4199.00	6790.00	21588.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 21
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/07/2000	MW-03 MW-03 03/06/2000	MW-A MW-A 03/07/2000	PZ-01 PZ-01 03/10/2000	PZ-02 PZ-02 03/08/2000
Naphthalene	(ug/l)	10	[830] D	[6600]	[3700] D	[140] D	[9200] D
2-Methylnaphthalene	(ug/l)		24	270 J	700 D	10 U	1200
Acenaphthylene	(ug/l)		10 U	500 U	10 U	10 U	300 U
Acenaphthene	(ug/l)	20	[100]	500 U	[140]	[140]	[250] J
Dibenzofuran	(ug/l)		5 J	500 U	6 J	6 J	300 U
Fluorene	(ug/l)	50	[53]	500 U	[52]	48	[81] J
Phenanthrene	(ug/l)	50	[56]	500 U	[61]	[53]	[110] J
Anthracene	(ug/l)	50	7 J	500 U	14	5 J	32 J
Fluoranthene	(ug/l)	50	3 J	500 U	5 J	4 J	300 U
Pyrene	(ug/l)	50	4 J	500 U	6 J	6 J	34 J
Benz(a)anthracene	(ug/l)	0.002	10 U	500 U	10 U	10 U	300 U
Chrysene	(ug/l)	0.002	10 U	500 U	10 U	10 U	300 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	500 U	10 U	10 U	300 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	500 U	10 U	10 U	300 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[500] U	[10] U	[10] U	[300] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	500 U	10 U	10 U	300 U
Dibenz(a,h)anthracene	(ug/l)		10 U	500 U	10 U	10 U	300 U
Benzo(g,h,i)perylene	(ug/l)		10 U	500 U	10 U	10 U	300 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		1082.00	6870.00	4684.00	402.00	10907.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 21
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-03 PZ-03 03/03/2000	PZ-04 PZ-04 03/09/2000	PZ-05 PZ-05 03/10/2000	PZ-06 PZ-06 03/08/2000	PZ-07 PZ-07 03/08/2000
Naphthalene	(ug/l)	10	[89]	[2900]	[1400] D	[1300]	10 U
2-Methylnaphthalene	(ug/l)		6 J	270	200 DJ	300	10 U
Acenaphthylene	(ug/l)		1 J	65 J	10 U	33 J	10 U
Acenaphthene	(ug/l)	20	10 U	250 U	[55]	100 U	10 U
Dibenzofuran	(ug/l)		10 U	250 U	5 J	100 U	10 U
Fluorene	(ug/l)	50	2 J	38 J	26	15 J	10 U
Phenanthrene	(ug/l)	50	4 J	[63] J	35	12 J	10 U
Anthracene	(ug/l)	50	10 U	250 U	7 J	100 U	10 U
Fluoranthene	(ug/l)	50	1 J	250 U	4 J	100 U	10 U
Pyrene	(ug/l)	50	2 J	250 U	6 J	100 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	250 U	[1] J	100 U	10 U
Chrysene	(ug/l)	0.002	10 U	250 U	[1] J	100 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	250 U	10 U	100 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	250 U	10 U	100 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[250] U	[10] U	[100] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	250 U	10 U	100 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	250 U	10 U	100 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	250 U	10 U	100 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	2.00	0.00	0.00
Total PAHs	(ug/l)		105.00	3336.00	1740.00	1660.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 21
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-08 PZ-08 11/16/2001	RPMW-04I RPMW-04I 03/08/2000	RPMW-04S RPMW-04S 03/08/2000	RPMW-05I RPMW-05I 03/10/2000	RPMW-05S RPMW-05S 03/10/2000
Naphthalene	(ug/l)	10	[3600] D	[15]	10 U	10 U	[3100]
2-Methylnaphthalene	(ug/l)		470 D	10 U	10 U	10 U	160 J
Acenaphthylene	(ug/l)		5 J	5 J	3 J	10 U	250 U
Acenaphthene	(ug/l)	20	[40]	1 J	2 J	5 J	250 U
Dibenzofuran	(ug/l)		6 J	10 U	10 U	10 U	250 U
Fluorene	(ug/l)	50	36	10 U	10 U	10 U	[79] J
Phenanthrene	(ug/l)	50	45	10 U	10 U	10 U	[93] J
Anthracene	(ug/l)	50	10	10 U	10 U	10 U	250 U
Fluoranthene	(ug/l)	50	7 J	10 U	10 U	10 U	250 U
Pyrene	(ug/l)	50	11	10 U	10 U	10 U	250 U
Benz(a)anthracene	(ug/l)	0.002	[3] J	10 U	10 U	10 U	250 U
Chrysene	(ug/l)	0.002	[3] J	10 U	10 U	10 U	250 U
Benzo(b)fluoranthene	(ug/l)	0.002	[2] J	10 U	10 U	10 U	250 U
Benzo(k)fluoranthene	(ug/l)	0.002	[1] J	10 U	10 U	10 U	250 U
Benzo(a)pyrene	(ug/l)	0	[2] J	[10] U	[10] U	[10] U	[250] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	250 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	250 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	250 U
Total CAPAHs	(ug/l)		11.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		4241.00	21.00	5.00	5.00	3432.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 21
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-06I RPMW-06I 03/07/2000	RPMW-07D RPMW-07D 03/20/2000	RPMW-07I RPMW-07I 03/13/2000	RPMW-07S RPMW-07S 03/13/2000	RPMW-08I RPMW-08I 03/09/2000
Naphthalene	(ug/l)	10	10 U	10 U	6 J	[7600]	[550] D
2-Methylnaphthalene	(ug/l)		10 U	12	3 J	990 J	80
Acenaphthylene	(ug/l)		10 U	21	10 U	1000 U	50
Acenaphthene	(ug/l)	20	10 U	11	[110]	[300] J	[23]
Dibenzofuran	(ug/l)		10 U	2 J	10 U	1000 U	4 J
Fluorene	(ug/l)	50	10 U	25	30	[130] J	9 J
Phenanthrene	(ug/l)	50	10 U	31	[75]	[160] J	19
Anthracene	(ug/l)	50	10 U	5 J	26	1000 U	4 J
Fluoranthene	(ug/l)	50	10 U	5 J	40	1000 U	1 J
Pyrene	(ug/l)	50	1 J	7 J	[72]	1000 U	2 J
Benz(a)anthracene	(ug/l)	0.002	10 U	[1] J	[18]	1000 U	10 U
Chrysene	(ug/l)	0.002	10 U	[1] J	[18]	1000 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	[14]	1000 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	[4] J	1000 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[14]	[1000] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	[6] J	1000 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	1000 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	7 J	1000 U	10 U
Total CAPAHs	(ug/l)		0.00	2.00	74.00	0.00	0.00
Total PAHs	(ug/l)		1.00	121.00	443.00	9180.00	742.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 21
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-08S RPMW-08S 03/08/2000	RPMW-09D RPMW-09D 03/21/2000	RPMW-09D2 RPMW-09D2 03/21/2000	RPMW-09I RPMW-09I 03/14/2000	RPMW-10I RPMW-10I 03/06/2000
Naphthalene	(ug/l)	10	[11]	[6600]	[1400]	[2200]	[18]
2-Methylnaphthalene	(ug/l)		2 J	780	190	340	4 J
Acenaphthylene	(ug/l)		10 U	220 J	99 J	300 U	10 U
Acenaphthene	(ug/l)	20	10 U	500 U	19 J	[74] J	1 J
Dibenzofuran	(ug/l)		10 U	500 U	150 U	300 U	10 U
Fluorene	(ug/l)	50	10 U	[94] J	35 J	42 J	1 J
Phenanthrene	(ug/l)	50	10 U	[150] J	[62] J	[64] J	4 J
Anthracene	(ug/l)	50	10 U	500 U	150 U	300 U	10 U
Fluoranthene	(ug/l)	50	10 U	500 U	150 U	300 U	1 J
Pyrene	(ug/l)	50	10 U	500 U	16 J	300 U	1 J
Benz(a)anthracene	(ug/l)	0.002	10 U	500 U	150 U	300 U	10 U
Chrysene	(ug/l)	0.002	10 U	500 U	150 U	300 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	500 U	150 U	300 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	500 U	150 U	300 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[500] U	[150] U	[300] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	500 U	150 U	300 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	500 U	150 U	300 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	500 U	150 U	300 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		13.00	7844.00	1821.00	2720.00	30.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 21
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-10S RPMW-10S 03/06/2000	RPMW-12D RPMW-12D 03/20/2000	RPMW-12D2 RPMW-12D2 03/20/2000	RPMW-12I RPMW-12I 03/09/2000	RPMW-12S RPMW-12S 03/09/2000
Naphthalene	(ug/l)	10	[1000] D	10 U	1 J	1 J	[4000]
2-Methylnaphthalene	(ug/l)		40 J	10 U	2 J	10 U	720
Acenaphthylene	(ug/l)		50 U	9 J	9 J	8 J	290 J
Acenaphthene	(ug/l)	20	8 J	3 J	2 J	2 J	300 U
Dibenzofuran	(ug/l)		50 U	10 U	10 U	10 U	300 U
Fluorene	(ug/l)	50	50 U	11	5 J	3 J	[85] J
Phenanthrene	(ug/l)	50	18 J	2 J	9 J	2 J	[110] J
Anthracene	(ug/l)	50	50 U	6 J	2 J	1 J	33 J
Fluoranthene	(ug/l)	50	50 U	6 J	2 J	1 J	300 U
Pyrene	(ug/l)	50	50 U	9 J	3 J	7 J	30 J
Benz(a)anthracene	(ug/l)	0.002	50 U	[2] J	10 U	[2] J	300 U
Chrysene	(ug/l)	0.002	50 U	[2] J	10 U	[2] J	300 U
Benzo(b)fluoranthene	(ug/l)	0.002	50 U	[2] J	10 U	[1] J	300 U
Benzo(k)fluoranthene	(ug/l)	0.002	50 U	10 U	10 U	10 U	300 U
Benzo(a)pyrene	(ug/l)	0	[50] U	[2] J	[10] U	[1] J	[300] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	50 U	10 U	10 U	10 U	300 U
Dibenz(a,h)anthracene	(ug/l)		50 U	10 U	10 U	10 U	300 U
Benzo(g,h,i)perylene	(ug/l)		50 U	10 U	10 U	10 U	300 U
Total CAPAHs	(ug/l)		0.00	8.00	0.00	6.00	0.00
Total PAHs	(ug/l)		1066.00	54.00	35.00	31.00	5268.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 21
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-13D RPMW-13D 03/18/2000	RPMW-13D2 RPMW-13D2 03/18/2000	RPMW-13I RPMW-13I 03/13/2000	RPMW-13S RPMW-13S 03/13/2000	RPMW-14D RPMW-14D 03/20/2000
Naphthalene	(ug/l)	10	[520] D	[1900]	[14]	[4500]	10 U
2-Methylnaphthalene	(ug/l)		220 D	260	2 J	670	10 U
Acenaphthylene	(ug/l)		170 D	190 J	2 J	400 U	10 U
Acenaphthene	(ug/l)	20	13	200 U	[42]	[190] J	10 U
Dibenzofuran	(ug/l)		5 J	200 U	10 U	400 U	10 U
Fluorene	(ug/l)	50	31	200 U	13	[110] J	10 U
Phenanthrene	(ug/l)	50	42	[81] J	3 J	[180] J	1 J
Anthracene	(ug/l)	50	10	200 U	4 J	400 U	10 U
Fluoranthene	(ug/l)	50	9 J	200 U	8 J	400 U	10 U
Pyrene	(ug/l)	50	14	20 J	23	[62] J	1 J
Benz(a)anthracene	(ug/l)	0.002	[4] J	200 U	[4] J	400 U	10 U
Chrysene	(ug/l)	0.002	[4] J	200 U	[3] J	400 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	[2] J	200 U	10 U	400 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	[1] J	200 U	10 U	400 U	10 U
Benzo(a)pyrene	(ug/l)	0	[3] J	[200] U	[10] U	[400] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[1] J	200 U	10 U	400 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	200 U	10 U	400 U	10 U
Benzo(g,h,i)perylene	(ug/l)		1 J	200 U	10 U	400 U	10 U
Total CAPAHs	(ug/l)		15.00	0.00	7.00	0.00	0.00
Total PAHs	(ug/l)		1050.00	2451.00	118.00	5712.00	2.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 21
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-14I RPMW-14I 03/09/2000	RPMW-14S RPMW-14S 03/09/2000	RPMW-15I RPMW-15I 03/06/2000
Naphthalene	(ug/l)	10	[130]	[980] D	[35]
2-Methylnaphthalene	(ug/l)		8 J	71	30
Acenaphthylene	(ug/l)		10 U	2 J	2 J
Acenaphthene	(ug/l)	20	2 J	6 J	3 J
Dibenzofuran	(ug/l)		10 U	2 J	10 U
Fluorene	(ug/l)	50	3 J	8 J	4 J
Phenanthrene	(ug/l)	50	7 J	8 J	11
Anthracene	(ug/l)	50	10 U	2 J	1 J
Fluoranthene	(ug/l)	50	1 J	2 J	4 J
Pyrene	(ug/l)	50	1 J	4 J	4 J
Benz(a)anthracene	(ug/l)	0.002	10 U	[1] J	[1] J
Chrysene	(ug/l)	0.002	10 U	[1] J	[1] J
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[1] J	[2] J
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	3.00	4.00
Total PAHs	(ug/l)		152.00	1088.00	98.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---:Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/07/2000	MW-03 MW-03 03/06/2000	MW-A MW-A 03/07/2000	PZ-01 PZ-01 03/10/2000	PZ-02 PZ-02 03/08/2000
Xylene (total)	(ug/l)	5	[150]	[8500]	[1300]	[150]	[1400] D
Chloromethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Bromomethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Vinyl chloride	(ug/l)	2	50 U	2500 U	500 U	5 U	5 U
Chloroethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Methylene chloride	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Acetone	(ug/l)	50	50 U	2500 U	500 U	5 U	5 U
Carbon disulfide	(ug/l)	50	50 U	2500 U	500 U	5 U	5 U
1,1-Dichloroethene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Chloroform	(ug/l)	7	50 U	2500 U	500 U	5 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	50 U	2500 U	500 U	5 U	5 U
2-Butanone	(ug/l)	50	50 U	2500 U	500 U	5 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Carbon tetrachloride	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Bromodichloromethane	(ug/l)	50	50 U	2500 U	500 U	5 U	5 U
1,2-Dichloropropane	(ug/l)	1	50 U	2500 U	500 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	50 U	2500 U	500 U	5 U	5 U
Trichloroethene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Dibromochloromethane	(ug/l)	50	50 U	2500 U	500 U	5 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	50 U	2500 U	500 U	2 J	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/07/2000	MW-03 MW-03 03/06/2000	MW-A MW-A 03/07/2000	PZ-01 PZ-01 03/10/2000	PZ-02 PZ-02 03/08/2000
Benzene	(ug/l)	1.0	[780]	[46000]	[5100]	[1400] D	[7000] D
trans-1,3-Dichloropropene	(ug/l)	0.4	50 U	2500 U	500 U	5 U	5 U
Bromoform	(ug/l)	50	50 U	2500 U	500 U	5 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
2-Hexanone	(ug/l)	50	50 U	2500 U	500 U	5 U	5 U
Tetrachloroethene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Toluene	(ug/l)	5	50 U	[23000]	500 U	[6]	[53]
Chlorobenzene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Ethylbenzene	(ug/l)	5	50 U	[1300] J	[1500]	[190] D	[500] DJ
Styrene	(ug/l)	5	50 U	[5000]	500 U	3 J	5 U
Dichlorodifluoromethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Trichlorofluoromethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Iodomethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Methyltert-butylether	(ug/l)		50 U	2500 U	500 U	170	5 U
Vinyl Acetate	(ug/l)		50 U	2500 U	500 U	5 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	50 U	2500 U	500 U	2 J	5 U
2,2-Dichloropropane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Bromochloromethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Dibromomethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/07/2000	MW-03 MW-03 03/06/2000	MW-A MW-A 03/07/2000	PZ-01 PZ-01 03/10/2000	PZ-02 PZ-02 03/08/2000
2-Chloroethyl vinyl ether	(ug/l)		50 U	2500 U	500 U	5 U	5 U
1,3-Dichloropropane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
1,2-Dibromoethane	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
Isopropylbenzene	(ug/l)	5	50 U	2500 U	500 U	[36]	[37]
Bromobenzene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	50 U	2500 U	500 U	5 U	5 U
n-Propylbenzene	(ug/l)	5	50 U	2500 U	500 U	[10]	5 U
2-Chlorotoluene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
4-Chlorotoluene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
tert-Butylbenzene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	[140]	2500 U	[180] J	[44]	[260] DJ
sec-Butylbenzene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
4-Isopropyltoluene	(ug/l)	5	50 U	2500 U	500 U	3 J	[34]
n-Butylbenzene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	50 U	2500 U	500 U	5 U	5 U
1,2,3-Trichlorobenzene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	[71]	2500 U	[100] J	[9]	[500] D
1,1-Dichloropropene	(ug/l)	5	50 U	2500 U	500 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-03 PZ-03 03/03/2000	PZ-04 PZ-04 03/09/2000	PZ-05 PZ-05 03/10/2000	PZ-06 PZ-06 03/08/2000	PZ-07 PZ-07 03/08/2000
Xylene (total)	(ug/l)	5	[300] D	[4500] D	[590] D	[970] D	5 U
Chloromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	(ug/l)	2	5 U	5 U	5 U	5 U	5 U
Chloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Methylene chloride	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Acetone	(ug/l)	50	5 U	[50]	5 U	5 U	5 U
Carbon disulfide	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Chloroform	(ug/l)	7	5 U	5 U	2 J	5 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U	5 U	5 U	5 U	5 U
2-Butanone	(ug/l)	50	5 U	18	5 U	5 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	5 U	5 U
Trichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-03 PZ-03 03/03/2000	PZ-04 PZ-04 03/09/2000	PZ-05 PZ-05 03/10/2000	PZ-06 PZ-06 03/08/2000	PZ-07 PZ-07 03/08/2000
Benzene	(ug/l)	1.0	[12]	[120]	[2500] D	[6]	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	5 U	5 U
Bromoform	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
2-Hexanone	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Toluene	(ug/l)	5	[780] D	[4900] D	[20]	[56]	5 U
Chlorobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	(ug/l)	5	[20]	[1500] D	[200] D	[88]	5 U
Styrene	(ug/l)	5	[72] D	[580] D	[13]	[340] D	5 U
Dichlorodifluoromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Iodomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Methyltert-butylether	(ug/l)		5 U	5 U	5 U	5 U	5 U
Vinyl Acetate	(ug/l)		5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
2,2-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Dibromomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-03 PZ-03 03/03/2000	PZ-04 PZ-04 03/09/2000	PZ-05 PZ-05 03/10/2000	PZ-06 PZ-06 03/08/2000	PZ-07 PZ-07 03/08/2000
2-Chloroethyl vinyl ether	(ug/l)		5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	(ug/l)	5	5 U	[66]	[7]	2 J	5 U
Bromobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	5 U	5 U	5 U	5 U
n-Propylbenzene	(ug/l)	5	5 U	[14]	5 U	5 U	5 U
2-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
tert-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	[24]	[280] D	[180] D	[110]	5 U
sec-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
4-Isopropyltoluene	(ug/l)	5	1 J	5 U	4 J	5 U	5 U
n-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	[8]	[120]	[59]	[37]	5 U
1,1-Dichloropropene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-08 PZ-08 11/16/2001	RPMW-04I RPMW-04I 03/08/2000	RPMW-04S RPMW-04S 03/08/2000	RPMW-05I RPMW-05I 03/10/2000	RPMW-05S RPMW-05S 03/10/2000
Xylene (total)	(ug/l)	5	[3800]	[10]	5 U	[27]	[350]
Chloromethane	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
Bromomethane	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
Vinyl chloride	(ug/l)	2	200 U	5 U	5 U	5 U	5 U
Chloroethane	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
Methylene chloride	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
Acetone	(ug/l)	50	200 U	5 U	5 U	5 U	5 U
Carbon disulfide	(ug/l)	50	200 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
Chloroform	(ug/l)	7	200 U	[18]	5 U	[17]	5 U
1,2-Dichloroethane	(ug/l)	0.6	200 U	5 U	5 U	5 U	5 U
2-Butanone	(ug/l)	50	200 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
Bromodichloromethane	(ug/l)	50	200 U	2 J	5 U	2 J	5 U
1,2-Dichloropropane	(ug/l)	1	200 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	200 U	5 U	5 U	5 U	5 U
Trichloroethene	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
Dibromochloromethane	(ug/l)	50	200 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	200 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-08 PZ-08 11/16/2001	RPMW-04I RPMW-04I 03/08/2000	RPMW-04S RPMW-04S 03/08/2000	RPMW-05I RPMW-05I 03/10/2000	RPMW-05S RPMW-05S 03/10/2000
Benzene	(ug/l)	1.0	[6400]	5 U	5 U	5 U	[3200] D
trans-1,3-Dichloropropene	(ug/l)	0.4	200 U	5 U	5 U	5 U	5 U
Bromoform	(ug/l)	50	200 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
2-Hexanone	(ug/l)	50	200 U	5 U	5 U	5 U	5 U
Tetrachloroethene	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
Toluene	(ug/l)	5	[170] J	5 U	5 U	4 J	[7]
Chlorobenzene	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
Ethylbenzene	(ug/l)	5	[700]	[6]	5 U	[10]	[130] D
Styrene	(ug/l)	5	200 U	5 U	5 U	5 U	[8]
Dichlorodifluoromethane	(ug/l)	5	---	5 U	5 U	5 U	5 U
Trichlorofluoromethane	(ug/l)	5	---	5 U	5 U	5 U	5 U
Iodomethane	(ug/l)	5	---	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
Methyltert-butylether	(ug/l)		---	5 U	5 U	5 U	5 U
Vinyl Acetate	(ug/l)		---	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	200 U	5 U	5 U	5 U	5 U
2,2-Dichloropropane	(ug/l)	5	---	5 U	5 U	5 U	5 U
Bromochloromethane	(ug/l)	5	---	5 U	5 U	5 U	5 U
Dibromomethane	(ug/l)	5	---	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-08 PZ-08 11/16/2001	RPMW-04I RPMW-04I 03/08/2000	RPMW-04S RPMW-04S 03/08/2000	RPMW-05I RPMW-05I 03/10/2000	RPMW-05S RPMW-05S 03/10/2000
2-Chloroethyl vinyl ether	(ug/l)		---	5 U	5 U	5 U	5 U
1,3-Dichloropropane	(ug/l)	5	---	5 U	5 U	5 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	---	5 U	5 U	5 U	5 U
1,2-Dibromoethane	(ug/l)	5	---	5 U	5 U	5 U	5 U
Isopropylbenzene	(ug/l)	5	---	5 U	5 U	5 U	[18]
Bromobenzene	(ug/l)	5	---	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	---	5 U	5 U	5 U	5 U
n-Propylbenzene	(ug/l)	5	---	5 U	5 U	5 U	5 U
2-Chlorotoluene	(ug/l)	5	---	5 U	5 U	5 U	5 U
4-Chlorotoluene	(ug/l)	5	---	5 U	5 U	5 U	5 U
tert-Butylbenzene	(ug/l)	5	---	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	---	5 U	5 U	1 J	[96]
sec-Butylbenzene	(ug/l)	5	---	5 U	5 U	5 U	5 U
4-Isopropyltoluene	(ug/l)	5	---	5 U	5 U	5 U	4 J
n-Butylbenzene	(ug/l)	5	---	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	---	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	(ug/l)	5	---	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	---	3 J	5 U	4 J	[14]
1,1-Dichloropropene	(ug/l)	5	---	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-06I RPMW-06I 03/07/2000	RPMW-07D RPMW-07D 03/20/2000	RPMW-07I RPMW-07I 03/13/2000	RPMW-07S RPMW-07S 03/13/2000	RPMW-08I RPMW-08I 03/09/2000
Xylene (total)	(ug/l)	5	5 U	[93]	[100]	[320] J	[170]
Chloromethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Bromomethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Vinyl chloride	(ug/l)	2	5 U	5 U	5 U	400 U	5 U
Chloroethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Methylene chloride	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Acetone	(ug/l)	50	5 U	5 U	19	400 U	12
Carbon disulfide	(ug/l)	50	5 U	5 U	5 U	400 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Chloroform	(ug/l)	7	[22]	5 U	[16]	400 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U	5 U	5 U	400 U	5 U
2-Butanone	(ug/l)	50	5 U	5 U	5 U	400 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Bromodichloromethane	(ug/l)	50	2 J	5 U	1 J	400 U	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	5 U	5 U	400 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	400 U	5 U
Trichloroethene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	5 U	5 U	400 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-06I RPMW-06I 03/07/2000	RPMW-07D RPMW-07D 03/20/2000	RPMW-07I RPMW-07I 03/13/2000	RPMW-07S RPMW-07S 03/13/2000	RPMW-08I RPMW-08I 03/09/2000
Benzene	(ug/l)	1.0	5 U	[54]	[280] D	[890]	[28]
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	400 U	5 U
Bromoform	(ug/l)	50	5 U	5 U	5 U	400 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
2-Hexanone	(ug/l)	50	5 U	5 U	5 U	400 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Toluene	(ug/l)	5	5 U	[21]	[7]	400 U	[53]
Chlorobenzene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Ethylbenzene	(ug/l)	5	5 U	[5]	[150] D	400 U	[11]
Styrene	(ug/l)	5	5 U	5 U	5 U	400 U	[16]
Dichlorodifluoromethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Iodomethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Methyltert-butylether	(ug/l)		5 U	5 U	5 U	400 U	5 U
Vinyl Acetate	(ug/l)		5 U	5 U	5 U	400 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
2,2-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Bromochloromethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Dibromomethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-06I RPMW-06I 03/07/2000	RPMW-07D RPMW-07D 03/20/2000	RPMW-07I RPMW-07I 03/13/2000	RPMW-07S RPMW-07S 03/13/2000	RPMW-08I RPMW-08I 03/09/2000
2-Chloroethyl vinyl ether	(ug/l)		5 U	5 U	5 U	400 U	5 U
1,3-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
Isopropylbenzene	(ug/l)	5	5 U	5 U	[14]	400 U	[7]
Bromobenzene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	5 U	5 U	400 U	5 U
n-Propylbenzene	(ug/l)	5	5 U	5 U	4 J	400 U	[7]
2-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
4-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
tert-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	5 U	[19]	5 U	[90] J	[45]
sec-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
4-Isopropyltoluene	(ug/l)	5	5 U	5 U	2 J	400 U	5 U
n-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	5 U	5 U	400 U	5 U
1,2,3-Trichlorobenzene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	5 U	[12]	[21]	400 U	[12]
1,1-Dichloropropene	(ug/l)	5	5 U	5 U	5 U	400 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-08S RPMW-08S 03/08/2000	RPMW-09D RPMW-09D 03/21/2000	RPMW-09D2 RPMW-09D2 03/21/2000	RPMW-09I RPMW-09I 03/14/2000	RPMW-10I RPMW-10I 03/06/2000
Xylene (total)	(ug/l)	5	[1800] D	[1400] D	[470]	[690] D	3 J
Chloromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	(ug/l)	2	5 U	5 U	5 U	5 U	5 U
Chloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Methylene chloride	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Acetone	(ug/l)	50	5 U	5 U	5 U	5 U	32
Carbon disulfide	(ug/l)	50	5 U	4 J	5 U	5 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Chloroform	(ug/l)	7	5 U	5 U	5 U	[19]	[19]
1,2-Dichloroethane	(ug/l)	0.6	5 U	5 U	5 U	5 U	5 U
2-Butanone	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	(ug/l)	50	5 U	5 U	5 U	1 J	2 J
1,2-Dichloropropane	(ug/l)	1	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	5 U	5 U
Trichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-08S RPMW-08S 03/08/2000	RPMW-09D RPMW-09D 03/21/2000	RPMW-09D2 RPMW-09D2 03/21/2000	RPMW-09I RPMW-09I 03/14/2000	RPMW-10I RPMW-10I 03/06/2000
Benzene	(ug/l)	1.0	[8000] D	[9300] D	[9800] D	[280] D	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	5 U	5 U
Bromoform	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
2-Hexanone	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Toluene	(ug/l)	5	[56]	[450] D	[250] DJ	[120]	5 U
Chlorobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	(ug/l)	5	[830] D	[860] D	[180]	[650] D	2 J
Styrene	(ug/l)	5	5 U	[270] D	[200] DJ	5 U	5 U
Dichlorodifluoromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Iodomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Methyltert-butylether	(ug/l)		5 U	5 U	5 U	5 U	5 U
Vinyl Acetate	(ug/l)		5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
2,2-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Dibromomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-08S RPMW-08S 03/08/2000	RPMW-09D RPMW-09D 03/21/2000	RPMW-09D2 RPMW-09D2 03/21/2000	RPMW-09I RPMW-09I 03/14/2000	RPMW-10I RPMW-10I 03/06/2000
2-Chloroethyl vinyl ether	(ug/l)		5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	(ug/l)	5	[52]	5 U	3 J	[20]	5 U
Bromobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	5 U	5 U	5 U	5 U
n-Propylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
tert-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	[290] D	[180]	[12]	[83]	5 U
sec-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
4-Isopropyltoluene	(ug/l)	5	[38]	5 U	5 U	2 J	5 U
n-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	[230] E	[60]	[20]	[30]	5 U
1,1-Dichloropropene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-10S RPMW-10S 03/06/2000	RPMW-12D RPMW-12D 03/20/2000	RPMW-12D2 RPMW-12D2 03/20/2000	RPMW-12I RPMW-12I 03/09/2000	RPMW-12S RPMW-12S 03/09/2000
Xylene (total)	(ug/l)	5	[830] J	2 J	[9]	[8]	[1300] D
Chloromethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Bromomethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Vinyl chloride	(ug/l)	2	1000 U	5 U	5 U	5 U	5 U
Chloroethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Methylene chloride	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Acetone	(ug/l)	50	1000 U	5 U	5 U	10	15
Carbon disulfide	(ug/l)	50	1000 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Chloroform	(ug/l)	7	1000 U	5 U	5 U	[16]	5 U
1,2-Dichloroethane	(ug/l)	0.6	1000 U	5 U	5 U	5 U	5 U
2-Butanone	(ug/l)	50	1000 U	5 U	5 U	5 U	4 J
1,1,1-Trichloroethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Bromodichloromethane	(ug/l)	50	1000 U	5 U	5 U	2 J	5 U
1,2-Dichloropropane	(ug/l)	1	1000 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	1000 U	5 U	5 U	5 U	5 U
Trichloroethene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Dibromochloromethane	(ug/l)	50	1000 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-10S RPMW-10S 03/06/2000	RPMW-12D RPMW-12D 03/20/2000	RPMW-12D2 RPMW-12D2 03/20/2000	RPMW-12I RPMW-12I 03/09/2000	RPMW-12S RPMW-12S 03/09/2000
Benzene	(ug/l)	1.0	[15000]	5 U	[1] J	5 U	[11]
trans-1,3-Dichloropropene	(ug/l)	0.4	1000 U	5 U	5 U	5 U	5 U
Bromoform	(ug/l)	50	1000 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
2-Hexanone	(ug/l)	50	1000 U	5 U	5 U	5 U	5 U
Tetrachloroethene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Toluene	(ug/l)	5	[6200]	5 U	3 J	2 J	[610] D
Chlorobenzene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Ethylbenzene	(ug/l)	5	[360] J	5 U	4 J	4 J	[160] DJ
Styrene	(ug/l)	5	[240] J	5 U	5 U	3 J	[320] D
Dichlorodifluoromethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Iodomethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Methyltert-butylether	(ug/l)		1000 U	5 U	5 U	5 U	5 U
Vinyl Acetate	(ug/l)		1000 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
2,2-Dichloropropane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Bromochloromethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Dibromomethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-10S RPMW-10S 03/06/2000	RPMW-12D RPMW-12D 03/20/2000	RPMW-12D2 RPMW-12D2 03/20/2000	RPMW-12I RPMW-12I 03/09/2000	RPMW-12S RPMW-12S 03/09/2000
2-Chloroethyl vinyl ether	(ug/l)		1000 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
Isopropylbenzene	(ug/l)	5	1000 U	5 U	5 U	5 U	[14]
Bromobenzene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	1000 U	5 U	5 U	5 U	5 U
n-Propylbenzene	(ug/l)	5	1000 U	5 U	5 U	5 U	[9]
2-Chlorotoluene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
tert-Butylbenzene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	1000 U	5 U	2 J	5 U	[180] D
sec-Butylbenzene	(ug/l)	5	1000 U	5 U	5 U	3 J	5 U
4-Isopropyltoluene	(ug/l)	5	1000 U	5 U	5 U	5 U	3 J
n-Butylbenzene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	1000 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	1000 U	2 J	1 J	[6]	[77]
1,1-Dichloropropene	(ug/l)	5	1000 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-13D RPMW-13D 03/18/2000	RPMW-13D2 RPMW-13D2 03/18/2000	RPMW-13I RPMW-13I 03/13/2000	RPMW-13S RPMW-13S 03/13/2000	RPMW-14D RPMW-14D 03/20/2000
Xylene (total)	(ug/l)	5	[380]	[680] D	[43]	[1800] D	1 J
Chloromethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Bromomethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Vinyl chloride	(ug/l)	2	5 U	5 U	5 U	25 U	5 U
Chloroethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Methylene chloride	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Acetone	(ug/l)	50	5 U	5 U	5 U	25 U	5 U
Carbon disulfide	(ug/l)	50	1 J	5 U	5 U	25 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Chloroform	(ug/l)	7	5 U	5 U	[21]	25 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U	5 U	5 U	25 U	5 U
2-Butanone	(ug/l)	50	5 U	5 U	5 U	25 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Bromodichloromethane	(ug/l)	50	5 U	5 U	2 J	25 U	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	5 U	5 U	25 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	25 U	5 U
Trichloroethene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	5 U	5 U	25 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-13D RPMW-13D 03/18/2000	RPMW-13D2 RPMW-13D2 03/18/2000	RPMW-13I RPMW-13I 03/13/2000	RPMW-13S RPMW-13S 03/13/2000	RPMW-14D RPMW-14D 03/20/2000
Benzene	(ug/l)	1.0	[61]	[270] D	[1] J	[18] J	[3] J
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	25 U	5 U
Bromoform	(ug/l)	50	5 U	5 U	5 U	25 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
2-Hexanone	(ug/l)	50	5 U	5 U	5 U	25 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Toluene	(ug/l)	5	[110]	[390] D	[7]	[160]	5 U
Chlorobenzene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Ethylbenzene	(ug/l)	5	[58]	[100]	[65]	[190]	[5]
Styrene	(ug/l)	5	[470] D	[820] D	5 U	25 U	5 U
Dichlorodifluoromethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Iodomethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Methyltert-butylether	(ug/l)		5 U	5 U	5 U	25 U	5 U
Vinyl Acetate	(ug/l)		5 U	5 U	5 U	25 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
2,2-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Bromochloromethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Dibromomethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-13D RPMW-13D 03/18/2000	RPMW-13D2 RPMW-13D2 03/18/2000	RPMW-13I RPMW-13I 03/13/2000	RPMW-13S RPMW-13S 03/13/2000	RPMW-14D RPMW-14D 03/20/2000
2-Chloroethyl vinyl ether	(ug/l)		5 U	5 U	5 U	25 U	5 U
1,3-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
Isopropylbenzene	(ug/l)	5	2 J	2 J	4 J	25 U	5 U
Bromobenzene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	5 U	5 U	25 U	5 U
n-Propylbenzene	(ug/l)	5	[5]	5 U	5 U	25 U	5 U
2-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
4-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
tert-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	[64]	[75]	1 J	[550] U	5 U
sec-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
4-Isopropyltoluene	(ug/l)	5	5 U	5 U	1 J	[13] J	5 U
n-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	5 U	5 U	25 U	5 U
1,2,3-Trichlorobenzene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	[25]	[26]	[10]	[200]	5 U
1,1-Dichloropropene	(ug/l)	5	5 U	5 U	5 U	25 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-14I RPMW-14I 03/09/2000	RPMW-14S RPMW-14S 03/09/2000	RPMW-15I RPMW-15I 03/09/2000
Xylene (total)	(ug/l)	5	[2700] D	[2400] D	[14000] D
Chloromethane	(ug/l)	5	5 U	5 U	5 U
Bromomethane	(ug/l)	5	5 U	5 U	5 U
Vinyl chloride	(ug/l)	2	5 U	5 U	5 U
Chloroethane	(ug/l)	5	5 U	5 U	5 U
Methylene chloride	(ug/l)	5	5 U	5 U	5 U
Acetone	(ug/l)	50	5 U	5 U	5 U
Carbon disulfide	(ug/l)	50	5 U	5 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	5 U	5 U
Chloroform	(ug/l)	7	[18]	5 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U	5 U	5 U
2-Butanone	(ug/l)	50	5 U	5 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	5 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	5 U	5 U
Bromodichloromethane	(ug/l)	50	1 J	5 U	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U
Trichloroethene	(ug/l)	5	5 U	5 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	5 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-14I RPMW-14I 03/09/2000	RPMW-14S RPMW-14S 03/09/2000	RPMW-15I RPMW-15I 03/09/2000
Benzene	(ug/l)	1.0	[49]	[1600] D	[78]
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U
Bromoform	(ug/l)	50	5 U	5 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	5 U	5 U
2-Hexanone	(ug/l)	50	5 U	5 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U
Toluene	(ug/l)	5	[350] D	[490] D	[7400] D
Chlorobenzene	(ug/l)	5	5 U	5 U	5 U
Ethylbenzene	(ug/l)	5	[1100] D	[2300] D	[110]
Styrene	(ug/l)	5	[1000] D	[40]	[6500] D
Dichlorodifluoromethane	(ug/l)	5	5 U	5 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	5 U	5 U
Iodomethane	(ug/l)	5	5 U	5 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U
Methyltert-butylether	(ug/l)		5 U	5 U	5 U
Vinyl Acetate	(ug/l)		5 U	5 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U
2,2-Dichloropropane	(ug/l)	5	5 U	5 U	5 U
Bromochloromethane	(ug/l)	5	5 U	5 U	5 U
Dibromomethane	(ug/l)	5	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 22
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-14I RPMW-14I 03/09/2000	RPMW-14S RPMW-14S 03/09/2000	RPMW-15I RPMW-15I 03/09/2000
2-Chloroethyl vinyl ether	(ug/l)		5 U	5 U	5 U
1,3-Dichloropropane	(ug/l)	5	5 U	5 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	5 U	5 U
Isopropylbenzene	(ug/l)	5	[13]	[90]	5 U
Bromobenzene	(ug/l)	5	5 U	5 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	5 U	5 U
n-Propylbenzene	(ug/l)	5	[9]	[14]	5 U
2-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U
4-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U
tert-Butylbenzene	(ug/l)	5	5 U	5 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	[82]	[300] D	[540] D
sec-Butylbenzene	(ug/l)	5	5 U	5 U	5 U
4-Isopropyltoluene	(ug/l)	5	5 U	[6]	3 J
n-Butylbenzene	(ug/l)	5	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	5 U	5 U
1,2,3-Trichlorobenzene	(ug/l)	5	5 U	5 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	[34]	[170]	[230] DJ
1,1-Dichloropropene	(ug/l)	5	5 U	5 U	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/07/2000	MW-03 MW-03 03/06/2000	MW-A MW-A 03/07/2000	PZ-01 PZ-01 03/10/2000	PZ-02 PZ-02 03/08/2000
Phenol	(ug/l)	1	[4] J	500 U	[21]	[14]	300 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U	500 U	10 U	10 U	300 U
2-Chlorophenol	(ug/l)	1	10 U	500 U	10 U	10 U	300 U
1,3-Dichlorobenzene	(ug/l)	3	10 U	500 U	10 U	10 U	300 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	500 U	10 U	10 U	300 U
1,2-Dichlorobenzene	(ug/l)	3	10 U	500 U	10 U	10 U	300 U
2-Methylphenol	(ug/l)	1	10 U	[89] J	[3] J	10 U	300 U
4-Methylphenol	(ug/l)	1	10 U	500 U	10 U	10 U	300 U
N-Nitrosodipropylamine	(ug/l)		10 U	500 U	10 U	10 U	300 U
Hexachloroethane	(ug/l)	5	10 U	500 U	10 U	10 U	300 U
Nitrobenzene	(ug/l)	0.4	10 U	500 U	10 U	10 U	300 U
Isophorone	(ug/l)	50	10 U	500 U	10 U	10 U	300 U
2-Nitrophenol	(ug/l)	1	10 U	500 U	10 U	10 U	300 U
2,4-Dimethylphenol	(ug/l)	50	10 U	[120] J	10 U	1 J	300 U
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U	500 U	10 U	10 U	300 U
2,4-Dichlorophenol	(ug/l)	5	10 U	500 U	10 U	10 U	300 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	500 U	10 U	10 U	300 U
Naphthalene	(ug/l)	10	[830] D	[6600]	[3700] D	[140] D	[9200] D
4-Chloroaniline	(ug/l)	5	10 U	500 U	10 U	10 U	300 U
Hexachlorobutadiene	(ug/l)	0.5	10 U	500 U	10 U	10 U	300 U
4-Chloro-3-methylphenol	(ug/l)	1	10 U	500 U	10 U	10 U	300 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/07/2000	MW-03 MW-03 03/06/2000	MW-A MW-A 03/07/2000	PZ-01 PZ-01 03/10/2000	PZ-02 PZ-02 03/08/2000
2-Methylnaphthalene	(ug/l)		24	270 J	700 D	10 U	1200
Hexachlorocyclopentadiene	(ug/l)	5	10 U	500 U	10 U	10 U	300 U
2,4,6-Trichlorophenol	(ug/l)	1	10 U	500 U	10 U	10 U	300 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U	1000 U	20 U	20 U	600 U
2-Chloronaphthalene	(ug/l)	10	10 U	500 U	10 U	10 U	300 U
2-Nitroaniline	(ug/l)	5	20 U	1000 U	20 U	20 U	600 U
Dimethyl phthalate	(ug/l)	50	10 U	500 U	10 U	10 U	300 U
Acenaphthylene	(ug/l)		10 U	500 U	10 U	10 U	300 U
2,6-Dinitrotoluene	(ug/l)	5	10 U	500 U	10 U	10 U	300 U
3-Nitroaniline	(ug/l)	5	20 U	1000 U	20 U	20 U	600 U
Acenaphthene	(ug/l)	20	[100]	500 U	[140]	[140]	[250] J
2,4-Dinitrophenol	(ug/l)	10	20 U	1000 U	20 U	20 U	600 U
4-Nitrophenol	(ug/l)	1	20 U	1000 U	20 U	20 U	600 U
Dibenzofuran	(ug/l)		5 J	500 U	6 J	6 J	300 U
2,4-Dinitrotoluene	(ug/l)	5	10 U	500 U	10 U	10 U	300 U
Diethyl phthalate	(ug/l)	50	10 U	500 U	10 U	10 U	300 U
4-Chlorophenyl phenyl ether	(ug/l)		10 U	500 U	10 U	10 U	300 U
Fluorene	(ug/l)	50	[53]	500 U	[52]	48	[81] J
4-Nitroaniline	(ug/l)	5	20 U	1000 U	20 U	20 U	600 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U	1000 U	20 U	20 U	600 U
N-Nitrosodiphenylamine	(ug/l)	50	10 U	500 U	10 U	10 U	300 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/07/2000	MW-03 MW-03 03/06/2000	MW-A MW-A 03/07/2000	PZ-01 PZ-01 03/10/2000	PZ-02 PZ-02 03/08/2000
Hexachlorobenzene	(ug/l)	0.04	10 U	500 U	10 U	10 U	300 U
Pentachlorophenol	(ug/l)	1	20 U	1000 U	20 U	20 U	600 U
Phenanthrene	(ug/l)	50	[56]	500 U	[61]	[53]	[110] J
Anthracene	(ug/l)	50	7 J	500 U	14	5 J	32 J
Carbazole	(ug/l)		5 J	500 U	20	10	300 U
Di-n-butyl phthalate	(ug/l)	50	10 U	500 U	10 U	10 U	300 U
Fluoranthene	(ug/l)	50	3 J	500 U	5 J	4 J	300 U
Pyrene	(ug/l)	50	4 J	500 U	6 J	6 J	34 J
Butyl benzyl phthalate	(ug/l)	50	10 U	500 U	10 U	10 U	300 U
3,3-Dichlorobenzidine	(ug/l)	5	10 U	500 U	10 U	10 U	300 U
Benzo(a)anthracene	(ug/l)	0.002	10 U	500 U	10 U	10 U	300 U
Chrysene	(ug/l)	0.002	10 U	500 U	10 U	10 U	300 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	10 U	500 U	10 U	10 U	300 U
Di-n-octyl phthalate	(ug/l)	50	10 U	500 U	10 U	10 U	300 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	500 U	10 U	10 U	300 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	500 U	10 U	10 U	300 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[500] U	[10] U	[10] U	[300] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	500 U	10 U	10 U	300 U
Dibenzo(a,h)anthracene	(ug/l)		10 U	500 U	10 U	10 U	300 U
Benzo(ghi)perylene	(ug/l)		10 U	500 U	10 U	10 U	300 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-03 PZ-03 03/03/2000	PZ-04 PZ-04 03/09/2000	PZ-05 PZ-05 03/10/2000	PZ-06 PZ-06 03/08/2000	PZ-07 PZ-07 03/08/2000
Phenol	(ug/l)	1	10 U	250 U	[15]	100 U	10 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U	250 U	10 U	100 U	10 U
2-Chlorophenol	(ug/l)	1	10 U	250 U	10 U	100 U	10 U
1,3-Dichlorobenzene	(ug/l)	3	10 U	250 U	10 U	100 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	250 U	10 U	100 U	10 U
1,2-Dichlorobenzene	(ug/l)	3	10 U	250 U	10 U	100 U	10 U
2-Methylphenol	(ug/l)	1	[19]	250 U	10 U	100 U	10 U
4-Methylphenol	(ug/l)	1	[23]	[47] J	10 U	100 U	10 U
N-Nitrosodipropylamine	(ug/l)		10 U	250 U	10 U	100 U	10 U
Hexachloroethane	(ug/l)	5	10 U	250 U	10 U	100 U	10 U
Nitrobenzene	(ug/l)	0.4	10 U	250 U	10 U	100 U	10 U
Isophorone	(ug/l)	50	10 U	250 U	10 U	100 U	10 U
2-Nitrophenol	(ug/l)	1	10 U	250 U	10 U	100 U	10 U
2,4-Dimethylphenol	(ug/l)	50	9 J	250 U	2 J	100 U	10 U
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U	250 U	10 U	100 U	10 U
2,4-Dichlorophenol	(ug/l)	5	10 U	250 U	10 U	100 U	10 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	250 U	10 U	100 U	10 U
Naphthalene	(ug/l)	10	[89]	[2900]	[1400] D	[1300]	10 U
4-Chloroaniline	(ug/l)	5	10 U	250 U	10 U	100 U	10 U
Hexachlorobutadiene	(ug/l)	0.5	10 U	250 U	10 U	100 U	10 U
4-Chloro-3-methylphenol	(ug/l)	1	10 U	250 U	10 U	100 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-03 PZ-03 03/03/2000	PZ-04 PZ-04 03/09/2000	PZ-05 PZ-05 03/10/2000	PZ-06 PZ-06 03/08/2000	PZ-07 PZ-07 03/08/2000
2-Methylnaphthalene	(ug/l)		6 J	270	200 DJ	300	10 U
Hexachlorocyclopentadiene	(ug/l)	5	10 U	250 U	10 U	100 U	10 U
2,4,6-Trichlorophenol	(ug/l)	1	10 U	250 U	10 U	100 U	10 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U	500 U	20 U	200 U	20 U
2-Chloronaphthalene	(ug/l)	10	10 U	250 U	10 U	100 U	10 U
2-Nitroaniline	(ug/l)	5	20 U	500 U	20 U	200 U	20 U
Dimethyl phthalate	(ug/l)	50	10 U	250 U	10 U	100 U	10 U
Acenaphthylene	(ug/l)		1 J	65 J	10 U	33 J	10 U
2,6-Dinitrotoluene	(ug/l)	5	10 U	250 U	10 U	100 U	10 U
3-Nitroaniline	(ug/l)	5	20 U	500 U	20 U	200 U	20 U
Acenaphthene	(ug/l)	20	10 U	250 U	[55]	100 U	10 U
2,4-Dinitrophenol	(ug/l)	10	20 U	500 U	20 U	200 U	20 U
4-Nitrophenol	(ug/l)	1	20 U	500 U	20 U	200 U	20 U
Dibenzofuran	(ug/l)		10 U	250 U	5 J	100 U	10 U
2,4-Dinitrotoluene	(ug/l)	5	10 U	250 U	10 U	100 U	10 U
Diethyl phthalate	(ug/l)	50	10 U	250 U	10 U	100 U	10 U
4-Chlorophenyl phenyl ether	(ug/l)		10 U	250 U	10 U	100 U	10 U
Fluorene	(ug/l)	50	2 J	38 J	26	15 J	10 U
4-Nitroaniline	(ug/l)	5	20 U	500 U	20 U	200 U	20 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U	500 U	20 U	200 U	20 U
N-Nitrosodiphenylamine	(ug/l)	50	10 U	250 U	10 U	100 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-03 PZ-03 03/03/2000	PZ-04 PZ-04 03/09/2000	PZ-05 PZ-05 03/10/2000	PZ-06 PZ-06 03/08/2000	PZ-07 PZ-07 03/08/2000
Hexachlorobenzene	(ug/l)	0.04	10 U	250 U	10 U	100 U	10 U
Pentachlorophenol	(ug/l)	1	20 U	500 U	20 U	200 U	20 U
Phenanthrene	(ug/l)	50	4 J	[63] J	35	12 J	10 U
Anthracene	(ug/l)	50	10 U	250 U	7 J	100 U	10 U
Carbazole	(ug/l)		10 U	250 U	3 J	100 U	10 U
Di-n-butyl phthalate	(ug/l)	50	10 U	250 U	10 U	100 U	10 U
Fluoranthene	(ug/l)	50	1 J	250 U	4 J	100 U	10 U
Pyrene	(ug/l)	50	2 J	250 U	6 J	100 U	10 U
Butyl benzyl phthalate	(ug/l)	50	10 U	250 U	10 U	100 U	10 U
3,3-Dichlorobenzidine	(ug/l)	5	10 U	250 U	10 U	100 U	10 U
Benzo(a)anthracene	(ug/l)	0.002	10 U	250 U	[1] J	100 U	10 U
Chrysene	(ug/l)	0.002	10 U	250 U	[1] J	100 U	10 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	1 J	250 U	10 U	100 U	10 U
Di-n-octyl phthalate	(ug/l)	50	10 U	250 U	10 U	100 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	250 U	10 U	100 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	250 U	10 U	100 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[250] U	[10] U	[100] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	250 U	10 U	100 U	10 U
Dibenzo(a,h)anthracene	(ug/l)		10 U	250 U	10 U	100 U	10 U
Benzo(ghi)perylene	(ug/l)		10 U	250 U	10 U	100 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-08 PZ-08 11/16/2001	RPMW-04I RPMW-04I 03/08/2000	RPMW-04S RPMW-04S 03/08/2000	RPMW-05I RPMW-05I 03/10/2000	RPMW-05S RPMW-05S 03/10/2000
Phenol	(ug/l)	1	[15]	10 U	10 U	10 U	250 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U	10 U	10 U	10 U	250 U
2-Chlorophenol	(ug/l)	1	10 U	10 U	10 U	10 U	250 U
1,3-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	250 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	250 U
1,2-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	250 U
2-Methylphenol	(ug/l)	1	[16]	10 U	10 U	10 U	250 U
4-Methylphenol	(ug/l)	1	10 U	10 U	10 U	10 U	250 U
N-Nitrosodipropylamine	(ug/l)		10 U	10 U	10 U	10 U	250 U
Hexachloroethane	(ug/l)	5	10 U	10 U	10 U	10 U	250 U
Nitrobenzene	(ug/l)	0.4	10 U	10 U	10 U	10 U	250 U
Isophorone	(ug/l)	50	10 U	10 U	10 U	10 U	250 U
2-Nitrophenol	(ug/l)	1	10 U	10 U	10 U	10 U	250 U
2,4-Dimethylphenol	(ug/l)	50	10 U	10 U	10 U	10 U	250 U
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U	10 U	10 U	10 U	250 U
2,4-Dichlorophenol	(ug/l)	5	10 U	10 U	10 U	10 U	250 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	10 U	10 U	10 U	250 U
Naphthalene	(ug/l)	10	[3600] D	[15]	10 U	10 U	[3100]
4-Chloroaniline	(ug/l)	5	10 U	10 U	10 U	10 U	250 U
Hexachlorobutadiene	(ug/l)	0.5	10 U	10 U	10 U	10 U	250 U
4-Chloro-3-methylphenol	(ug/l)	1	10 U	10 U	10 U	10 U	250 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-08 PZ-08 11/16/2001	RPMW-04I RPMW-04I 03/08/2000	RPMW-04S RPMW-04S 03/08/2000	RPMW-05I RPMW-05I 03/10/2000	RPMW-05S RPMW-05S 03/10/2000
2-Methylnaphthalene	(ug/l)		470 D	10 U	10 U	10 U	160 J
Hexachlorocyclopentadiene	(ug/l)	5	10 U	10 U	10 U	10 U	250 U
2,4,6-Trichlorophenol	(ug/l)	1	10 U	10 U	10 U	10 U	250 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U	20 U	20 U	20 U	500 U
2-Chloronaphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	250 U
2-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	500 U
Dimethyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	250 U
Acenaphthylene	(ug/l)		5 J	5 J	3 J	10 U	250 U
2,6-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U	10 U	250 U
3-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	500 U
Acenaphthene	(ug/l)	20	[40]	1 J	2 J	5 J	250 U
2,4-Dinitrophenol	(ug/l)	10	20 U	20 U	20 U	20 U	500 U
4-Nitrophenol	(ug/l)	1	20 U	20 U	20 U	20 U	500 U
Dibenzofuran	(ug/l)		6 J	10 U	10 U	10 U	250 U
2,4-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U	10 U	250 U
Diethyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	250 U
4-Chlorophenyl phenyl ether	(ug/l)		10 U	10 U	10 U	10 U	250 U
Fluorene	(ug/l)	50	36	10 U	10 U	10 U	[79] J
4-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	500 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U	20 U	20 U	20 U	500 U
N-Nitrosodiphenylamine	(ug/l)	50	10 U	10 U	10 U	10 U	250 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-08 PZ-08 11/16/2001	RPMW-04I RPMW-04I 03/08/2000	RPMW-04S RPMW-04S 03/08/2000	RPMW-05I RPMW-05I 03/10/2000	RPMW-05S RPMW-05S 03/10/2000
Hexachlorobenzene	(ug/l)	0.04	10 U	10 U	10 U	10 U	250 U
Pentachlorophenol	(ug/l)	1	20 U	20 U	20 U	20 U	500 U
Phenanthrene	(ug/l)	50	45	10 U	10 U	10 U	[93] J
Anthracene	(ug/l)	50	10	10 U	10 U	10 U	250 U
Carbazole	(ug/l)		5 J	10 U	10 U	10 U	250 U
Di-n-butyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	250 U
Fluoranthene	(ug/l)	50	7 J	10 U	10 U	10 U	250 U
Pyrene	(ug/l)	50	11	10 U	10 U	10 U	250 U
Butyl benzyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	250 U
3,3-Dichlorobenzidine	(ug/l)	5	10 U	10 U	10 U	10 U	250 U
Benzo(a)anthracene	(ug/l)	0.002	[3] J	10 U	10 U	10 U	250 U
Chrysene	(ug/l)	0.002	[3] J	10 U	10 U	10 U	250 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	10 U	1 J	10 U	2 J	250 U
Di-n-octyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	250 U
Benzo(b)fluoranthene	(ug/l)	0.002	[2] J	10 U	10 U	10 U	250 U
Benzo(k)fluoranthene	(ug/l)	0.002	[1] J	10 U	10 U	10 U	250 U
Benzo(a)pyrene	(ug/l)	0	[2] J	[10] U	[10] U	[10] U	[250] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	250 U
Dibenzo(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	250 U
Benzo(ghi)perylene	(ug/l)		10 U	10 U	10 U	10 U	250 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-06I RPMW-06I 03/07/2000	RPMW-07D RPMW-07D 03/20/2000	RPMW-07I RPMW-07I 03/13/2000	RPMW-07S RPMW-07S 03/13/2000	RPMW-08I RPMW-08I 03/09/2000
Phenol	(ug/l)	1	10 U	10 U	[4] J	1000 U	10 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U	10 U	10 U	1000 U	10 U
2-Chlorophenol	(ug/l)	1	10 U	10 U	10 U	1000 U	10 U
1,3-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	1000 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	1000 U	10 U
1,2-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	1000 U	10 U
2-Methylphenol	(ug/l)	1	10 U	10 U	10 U	1000 U	[2] J
4-Methylphenol	(ug/l)	1	10 U	10 U	10 U	1000 U	[2] J
N-Nitrosodipropylamine	(ug/l)		10 U	10 U	10 U	1000 U	10 U
Hexachloroethane	(ug/l)	5	10 U	10 U	10 U	1000 U	10 U
Nitrobenzene	(ug/l)	0.4	10 U	10 U	10 U	1000 U	10 U
Isophorone	(ug/l)	50	10 U	2 J	10 U	1000 U	10 U
2-Nitrophenol	(ug/l)	1	10 U	10 U	10 U	1000 U	10 U
2,4-Dimethylphenol	(ug/l)	50	10 U	10 U	10 U	1000 U	4 J
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U	10 U	10 U	1000 U	10 U
2,4-Dichlorophenol	(ug/l)	5	10 U	10 U	10 U	1000 U	10 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	10 U	10 U	1000 U	10 U
Naphthalene	(ug/l)	10	10 U	10 U	6 J	[7600]	[550] D
4-Chloroaniline	(ug/l)	5	10 U	10 U	10 U	1000 U	10 U
Hexachlorobutadiene	(ug/l)	0.5	10 U	10 U	10 U	1000 U	10 U
4-Chloro-3-methylphenol	(ug/l)	1	10 U	10 U	10 U	1000 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-06I RPMW-06I 03/07/2000	RPMW-07D RPMW-07D 03/20/2000	RPMW-07I RPMW-07I 03/13/2000	RPMW-07S RPMW-07S 03/13/2000	RPMW-08I RPMW-08I 03/09/2000
2-Methylnaphthalene	(ug/l)		10 U	12	3 J	990 J	80
Hexachlorocyclopentadiene	(ug/l)	5	10 U	10 U	10 U	1000 U	10 U
2,4,6-Trichlorophenol	(ug/l)	1	10 U	10 U	10 U	1000 U	10 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U	20 U	20 U	2000 U	20 U
2-Chloronaphthalene	(ug/l)	10	10 U	10 U	10 U	1000 U	10 U
2-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	2000 U	20 U
Dimethyl phthalate	(ug/l)	50	10 U	10 U	10 U	1000 U	10 U
Acenaphthylene	(ug/l)		10 U	21	10 U	1000 U	50
2,6-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U	1000 U	10 U
3-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	2000 U	20 U
Acenaphthene	(ug/l)	20	10 U	11	[110]	[300] J	[23]
2,4-Dinitrophenol	(ug/l)	10	20 U	20 U	20 U	2000 U	20 U
4-Nitrophenol	(ug/l)	1	20 U	20 U	20 U	2000 U	20 U
Dibenzofuran	(ug/l)		10 U	2 J	10 U	1000 U	4 J
2,4-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U	1000 U	10 U
Diethyl phthalate	(ug/l)	50	10 U	10 U	10 U	1000 U	10 U
4-Chlorophenyl phenyl ether	(ug/l)		10 U	10 U	10 U	1000 U	10 U
Fluorene	(ug/l)	50	10 U	25	30	[130] J	9 J
4-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	2000 U	20 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U	20 U	20 U	2000 U	20 U
N-Nitrosodiphenylamine	(ug/l)	50	10 U	10 U	10 U	1000 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-06I RPMW-06I 03/07/2000	RPMW-07D RPMW-07D 03/20/2000	RPMW-07I RPMW-07I 03/13/2000	RPMW-07S RPMW-07S 03/13/2000	RPMW-08I RPMW-08I 03/09/2000
Hexachlorobenzene	(ug/l)	0.04	10 U	10 U	10 U	1000 U	10 U
Pentachlorophenol	(ug/l)	1	20 U	20 U	20 U	2000 U	20 U
Phenanthrene	(ug/l)	50	10 U	31	[75]	[160] J	19
Anthracene	(ug/l)	50	10 U	5 J	26	1000 U	4 J
Carbazole	(ug/l)		10 U	10 U	8 J	1000 U	1 J
Di-n-butyl phthalate	(ug/l)	50	10 U	10 U	10 U	1000 U	10 U
Fluoranthene	(ug/l)	50	10 U	5 J	40	1000 U	1 J
Pyrene	(ug/l)	50	1 J	7 J	[72]	1000 U	2 J
Butyl benzyl phthalate	(ug/l)	50	10 U	10 U	10 U	1000 U	10 U
3,3-Dichlorobenzidine	(ug/l)	5	10 U	10 U	10 U	1000 U	10 U
Benzo(a)anthracene	(ug/l)	0.002	10 U	[1] J	[18]	1000 U	10 U
Chrysene	(ug/l)	0.002	10 U	[1] J	[18]	1000 U	10 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	2 J	2 JB	2 J	1000 U	2 J
Di-n-octyl phthalate	(ug/l)	50	10 U	10 U	10 U	1000 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	[14]	1000 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	[4] J	1000 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[14]	[1000] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	[6] J	1000 U	10 U
Dibenzo(a,h)anthracene	(ug/l)		10 U	10 U	10 U	1000 U	10 U
Benzo(ghi)perylene	(ug/l)		10 U	10 U	7 J	1000 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-08S RPMW-08S 03/08/2000	RPMW-09D RPMW-09D 03/21/2000	RPMW-09D2 RPMW-09D2 03/21/2000	RPMW-09I RPMW-09I 03/14/2000	RPMW-10I RPMW-10I 03/06/2000
Phenol	(ug/l)	1	10 U	500 U	[23] J	300 U	10 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U	500 U	150 U	300 U	10 U
2-Chlorophenol	(ug/l)	1	10 U	500 U	150 U	300 U	10 U
1,3-Dichlorobenzene	(ug/l)	3	10 U	500 U	150 U	300 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	500 U	150 U	300 U	10 U
1,2-Dichlorobenzene	(ug/l)	3	10 U	500 U	150 U	300 U	10 U
2-Methylphenol	(ug/l)	1	10 U	500 U	150 U	300 U	10 U
4-Methylphenol	(ug/l)	1	10 U	500 U	150 U	300 U	10 U
N-Nitrosodipropylamine	(ug/l)		10 U	500 U	150 U	300 U	10 U
Hexachloroethane	(ug/l)	5	10 U	500 U	150 U	300 U	10 U
Nitrobenzene	(ug/l)	0.4	10 U	500 U	150 U	300 U	10 U
Isophorone	(ug/l)	50	10 U	500 U	150 U	300 U	10 U
2-Nitrophenol	(ug/l)	1	10 U	500 U	150 U	300 U	10 U
2,4-Dimethylphenol	(ug/l)	50	10 U	500 U	[65] J	300 U	10 U
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U	500 U	150 U	300 U	10 U
2,4-Dichlorophenol	(ug/l)	5	10 U	500 U	150 U	300 U	10 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	500 U	150 U	300 U	10 U
Naphthalene	(ug/l)	10	[11]	[6600]	[1400]	[2200]	[18]
4-Chloroaniline	(ug/l)	5	10 U	500 U	150 U	300 U	10 U
Hexachlorobutadiene	(ug/l)	0.5	10 U	500 U	150 U	300 U	10 U
4-Chloro-3-methylphenol	(ug/l)	1	10 U	500 U	150 U	300 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-08S RPMW-08S 03/08/2000	RPMW-09D RPMW-09D 03/21/2000	RPMW-09D2 RPMW-09D2 03/21/2000	RPMW-09I RPMW-09I 03/14/2000	RPMW-10I RPMW-10I 03/06/2000
2-Methylnaphthalene	(ug/l)		2 J	780	190	340	4 J
Hexachlorocyclopentadiene	(ug/l)	5	10 U	500 U	150 U	300 U	10 U
2,4,6-Trichlorophenol	(ug/l)	1	10 U	500 U	150 U	300 U	10 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U	1000 U	300 U	600 U	20 U
2-Chloronaphthalene	(ug/l)	10	10 U	500 U	150 U	300 U	10 U
2-Nitroaniline	(ug/l)	5	20 U	1000 U	300 U	600 U	20 U
Dimethyl phthalate	(ug/l)	50	10 U	500 U	150 U	300 U	10 U
Acenaphthylene	(ug/l)		10 U	220 J	99 J	300 U	10 U
2,6-Dinitrotoluene	(ug/l)	5	10 U	500 U	150 U	300 U	10 U
3-Nitroaniline	(ug/l)	5	20 U	1000 U	300 U	600 U	20 U
Acenaphthene	(ug/l)	20	10 U	500 U	19 J	[74] J	1 J
2,4-Dinitrophenol	(ug/l)	10	20 U	1000 U	300 U	600 U	20 U
4-Nitrophenol	(ug/l)	1	20 U	1000 U	300 U	600 U	20 U
Dibenzofuran	(ug/l)		10 U	500 U	150 U	300 U	10 U
2,4-Dinitrotoluene	(ug/l)	5	10 U	500 U	150 U	300 U	10 U
Diethyl phthalate	(ug/l)	50	10 U	500 U	150 U	300 U	10 U
4-Chlorophenyl phenyl ether	(ug/l)		10 U	500 U	150 U	300 U	10 U
Fluorene	(ug/l)	50	10 U	[94] J	35 J	42 J	1 J
4-Nitroaniline	(ug/l)	5	20 U	1000 U	300 U	600 U	20 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U	1000 U	300 U	600 U	20 U
N-Nitrosodiphenylamine	(ug/l)	50	10 U	500 U	150 U	300 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-08S RPMW-08S 03/08/2000	RPMW-09D RPMW-09D 03/21/2000	RPMW-09D2 RPMW-09D2 03/21/2000	RPMW-09I RPMW-09I 03/14/2000	RPMW-10I RPMW-10I 03/06/2000
Hexachlorobenzene	(ug/l)	0.04	10 U	500 U	150 U	300 U	10 U
Pentachlorophenol	(ug/l)	1	20 U	1000 U	300 U	600 U	20 U
Phenanthrene	(ug/l)	50	10 U	[150] J	[62] J	[64] J	4 J
Anthracene	(ug/l)	50	10 U	500 U	150 U	300 U	10 U
Carbazole	(ug/l)		10 U	500 U	150 U	300 U	10 U
Di-n-butyl phthalate	(ug/l)	50	10 U	500 U	150 U	300 U	10 U
Fluoranthene	(ug/l)	50	10 U	500 U	150 U	300 U	1 J
Pyrene	(ug/l)	50	10 U	500 U	16 J	300 U	1 J
Butyl benzyl phthalate	(ug/l)	50	10 U	500 U	150 U	300 U	10 U
3,3-Dichlorobenzidine	(ug/l)	5	10 U	500 U	150 U	300 U	10 U
Benzo(a)anthracene	(ug/l)	0.002	10 U	500 U	150 U	300 U	10 U
Chrysene	(ug/l)	0.002	10 U	500 U	150 U	300 U	10 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	10 U	500 U	150 U	300 U	2 J
Di-n-octyl phthalate	(ug/l)	50	10 U	500 U	150 U	300 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	500 U	150 U	300 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	500 U	150 U	300 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[500] U	[150] U	[300] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	500 U	150 U	300 U	10 U
Dibenzo(a,h)anthracene	(ug/l)		10 U	500 U	150 U	300 U	10 U
Benzo(ghi)perylene	(ug/l)		10 U	500 U	150 U	300 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-10S RPMW-10S 03/06/2000	RPMW-12D RPMW-12D 03/20/2000	RPMW-12D2 RPMW-12D2 03/20/2000	RPMW-12I RPMW-12I 03/09/2000	RPMW-12S RPMW-12S 03/09/2000
Phenol	(ug/l)	1	[34] J	[1] J	10 U	10 U	300 U
Bis(2-chloroethyl)ether	(ug/l)	1	50 U	10 U	10 U	10 U	300 U
2-Chlorophenol	(ug/l)	1	50 U	10 U	10 U	10 U	300 U
1,3-Dichlorobenzene	(ug/l)	3	50 U	10 U	10 U	10 U	300 U
1,4-Dichlorobenzene	(ug/l)	3	50 U	10 U	10 U	10 U	300 U
1,2-Dichlorobenzene	(ug/l)	3	50 U	10 U	10 U	10 U	300 U
2-Methylphenol	(ug/l)	1	[46] J	10 U	10 U	10 U	300 U
4-Methylphenol	(ug/l)	1	[29] J	10 U	10 U	10 U	300 U
N-Nitrosodipropylamine	(ug/l)		50 U	10 U	10 U	10 U	300 U
Hexachloroethane	(ug/l)	5	50 U	10 U	10 U	10 U	300 U
Nitrobenzene	(ug/l)	0.4	50 U	10 U	10 U	10 U	300 U
Isophorone	(ug/l)	50	50 U	10 U	4 J	10 U	300 U
2-Nitrophenol	(ug/l)	1	50 U	10 U	10 U	10 U	300 U
2,4-Dimethylphenol	(ug/l)	50	27 J	10 U	10 U	5 J	300 U
Bis(2-chloroethoxy)methane	(ug/l)	5	50 U	10 U	10 U	10 U	300 U
2,4-Dichlorophenol	(ug/l)	5	50 U	10 U	10 U	10 U	300 U
1,2,4-Trichlorobenzene	(ug/l)	5	50 U	10 U	10 U	10 U	300 U
Naphthalene	(ug/l)	10	[1000] D	10 U	1 J	1 J	[4000]
4-Chloroaniline	(ug/l)	5	50 U	10 U	10 U	10 U	300 U
Hexachlorobutadiene	(ug/l)	0.5	50 U	10 U	10 U	10 U	300 U
4-Chloro-3-methylphenol	(ug/l)	1	50 U	10 U	10 U	10 U	300 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-10S RPMW-10S 03/06/2000	RPMW-12D RPMW-12D 03/20/2000	RPMW-12D2 RPMW-12D2 03/20/2000	RPMW-12I RPMW-12I 03/09/2000	RPMW-12S RPMW-12S 03/09/2000
2-Methylnaphthalene	(ug/l)		40 J	10 U	2 J	10 U	720
Hexachlorocyclopentadiene	(ug/l)	5	50 U	10 U	10 U	10 U	300 U
2,4,6-Trichlorophenol	(ug/l)	1	50 U	10 U	10 U	10 U	300 U
2,4,5-Trichlorophenol	(ug/l)	1	100 U	20 U	20 U	20 U	600 U
2-Chloronaphthalene	(ug/l)	10	50 U	10 U	10 U	10 U	300 U
2-Nitroaniline	(ug/l)	5	100 U	20 U	20 U	20 U	600 U
Dimethyl phthalate	(ug/l)	50	50 U	10 U	10 U	10 U	300 U
Acenaphthylene	(ug/l)		50 U	9 J	9 J	8 J	290 J
2,6-Dinitrotoluene	(ug/l)	5	50 U	10 U	10 U	10 U	300 U
3-Nitroaniline	(ug/l)	5	100 U	20 U	20 U	20 U	600 U
Acenaphthene	(ug/l)	20	8 J	3 J	2 J	2 J	300 U
2,4-Dinitrophenol	(ug/l)	10	100 U	20 U	20 U	20 U	600 U
4-Nitrophenol	(ug/l)	1	100 U	20 U	20 U	20 U	600 U
Dibenzofuran	(ug/l)		50 U	10 U	10 U	10 U	300 U
2,4-Dinitrotoluene	(ug/l)	5	50 U	10 U	10 U	10 U	300 U
Diethyl phthalate	(ug/l)	50	50 U	10 U	10 U	10 U	300 U
4-Chlorophenyl phenyl ether	(ug/l)		50 U	10 U	10 U	10 U	300 U
Fluorene	(ug/l)	50	50 U	11	5 J	3 J	[85] J
4-Nitroaniline	(ug/l)	5	100 U	20 U	20 U	20 U	600 U
4,6-Dinitro-2-methylphenol	(ug/l)		100 U	20 U	20 U	20 U	600 U
N-Nitrosodiphenylamine	(ug/l)	50	50 U	10 U	10 U	10 U	300 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-10S RPMW-10S 03/06/2000	RPMW-12D RPMW-12D 03/20/2000	RPMW-12D2 RPMW-12D2 03/20/2000	RPMW-12I RPMW-12I 03/09/2000	RPMW-12S RPMW-12S 03/09/2000
Hexachlorobenzene	(ug/l)	0.04	50 U	10 U	10 U	10 U	300 U
Pentachlorophenol	(ug/l)	1	100 U	20 U	20 U	20 U	600 U
Phenanthrene	(ug/l)	50	18 J	2 J	9 J	2 J	[110] J
Anthracene	(ug/l)	50	50 U	6 J	2 J	1 J	33 J
Carbazole	(ug/l)		50 U	10 U	10 U	10 U	300 U
Di-n-butyl phthalate	(ug/l)	50	50 U	10 U	10 U	10 U	300 U
Fluoranthene	(ug/l)	50	50 U	6 J	2 J	1 J	300 U
Pyrene	(ug/l)	50	50 U	9 J	3 J	7 J	30 J
Butyl benzyl phthalate	(ug/l)	50	50 U	10 U	10 U	10 U	300 U
3,3-Dichlorobenzidine	(ug/l)	5	50 U	10 U	10 U	10 U	300 U
Benzo(a)anthracene	(ug/l)	0.002	50 U	[2] J	10 U	[2] J	300 U
Chrysene	(ug/l)	0.002	50 U	[2] J	10 U	[2] J	300 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	50 U	2 JB	3 JB	3 J	300 U
Di-n-octyl phthalate	(ug/l)	50	50 U	10 U	10 U	10 U	300 U
Benzo(b)fluoranthene	(ug/l)	0.002	50 U	[2] J	10 U	[1] J	300 U
Benzo(k)fluoranthene	(ug/l)	0.002	50 U	10 U	10 U	10 U	300 U
Benzo(a)pyrene	(ug/l)	0	[50] U	[2] J	[10] U	[1] J	[300] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	50 U	10 U	10 U	10 U	300 U
Dibenzo(a,h)anthracene	(ug/l)		50 U	10 U	10 U	10 U	300 U
Benzo(ghi)perylene	(ug/l)		50 U	10 U	10 U	10 U	300 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-13D RPMW-13D 03/18/2000	RPMW-13D2 RPMW-13D2 03/18/2000	RPMW-13I RPMW-13I 03/13/2000	RPMW-13S RPMW-13S 03/13/2000	RPMW-14D RPMW-14D 03/20/2000
Phenol	(ug/l)	1	10 U	200 U	10 U	400 U	10 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U	200 U	10 U	400 U	10 U
2-Chlorophenol	(ug/l)	1	10 U	200 U	10 U	400 U	10 U
1,3-Dichlorobenzene	(ug/l)	3	10 U	200 U	10 U	400 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	200 U	10 U	400 U	10 U
1,2-Dichlorobenzene	(ug/l)	3	10 U	200 U	10 U	400 U	10 U
2-Methylphenol	(ug/l)	1	10 U	200 U	10 U	400 U	10 U
4-Methylphenol	(ug/l)	1	10 U	200 U	10 U	400 U	10 U
N-Nitrosodipropylamine	(ug/l)		10 U	200 U	10 U	400 U	10 U
Hexachloroethane	(ug/l)	5	10 U	200 U	10 U	400 U	10 U
Nitrobenzene	(ug/l)	0.4	10 U	200 U	10 U	400 U	10 U
Isophorone	(ug/l)	50	10 U	200 U	10 U	400 U	10 U
2-Nitrophenol	(ug/l)	1	10 U	200 U	10 U	400 U	10 U
2,4-Dimethylphenol	(ug/l)	50	10 U	200 U	10 U	400 U	10 U
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U	200 U	10 U	400 U	10 U
2,4-Dichlorophenol	(ug/l)	5	10 U	200 U	10 U	400 U	10 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	200 U	10 U	400 U	10 U
Naphthalene	(ug/l)	10	[520] D	[1900]	[14]	[4500]	10 U
4-Chloroaniline	(ug/l)	5	10 U	200 U	10 U	400 U	10 U
Hexachlorobutadiene	(ug/l)	0.5	10 U	200 U	10 U	400 U	10 U
4-Chloro-3-methylphenol	(ug/l)	1	10 U	200 U	10 U	400 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-13D RPMW-13D 03/18/2000	RPMW-13D2 RPMW-13D2 03/18/2000	RPMW-13I RPMW-13I 03/13/2000	RPMW-13S RPMW-13S 03/13/2000	RPMW-14D RPMW-14D 03/20/2000
2-Methylnaphthalene	(ug/l)		220 D	260	2 J	670	10 U
Hexachlorocyclopentadiene	(ug/l)	5	10 U	200 U	10 U	400 U	10 U
2,4,6-Trichlorophenol	(ug/l)	1	10 U	200 U	10 U	400 U	10 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U	400 U	20 U	800 U	20 U
2-Chloronaphthalene	(ug/l)	10	10 U	200 U	10 U	400 U	10 U
2-Nitroaniline	(ug/l)	5	20 U	400 U	20 U	800 U	20 U
Dimethyl phthalate	(ug/l)	50	10 U	200 U	10 U	400 U	10 U
Acenaphthylene	(ug/l)		170 D	190 J	2 J	400 U	10 U
2,6-Dinitrotoluene	(ug/l)	5	10 U	200 U	10 U	400 U	10 U
3-Nitroaniline	(ug/l)	5	20 U	400 U	20 U	800 U	20 U
Acenaphthene	(ug/l)	20	13	200 U	[42]	[190] J	10 U
2,4-Dinitrophenol	(ug/l)	10	20 U	400 U	20 U	800 U	20 U
4-Nitrophenol	(ug/l)	1	20 U	400 U	20 U	800 U	20 U
Dibenzofuran	(ug/l)		5 J	200 U	10 U	400 U	10 U
2,4-Dinitrotoluene	(ug/l)	5	10 U	200 U	10 U	400 U	10 U
Diethyl phthalate	(ug/l)	50	10 U	200 U	10 U	400 U	10 U
4-Chlorophenyl phenyl ether	(ug/l)		10 U	200 U	10 U	400 U	10 U
Fluorene	(ug/l)	50	31	200 U	13	[110] J	10 U
4-Nitroaniline	(ug/l)	5	20 U	400 U	20 U	800 U	20 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U	400 U	20 U	800 U	20 U
N-Nitrosodiphenylamine	(ug/l)	50	10 U	200 U	10 U	400 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-13D RPMW-13D 03/18/2000	RPMW-13D2 RPMW-13D2 03/18/2000	RPMW-13I RPMW-13I 03/13/2000	RPMW-13S RPMW-13S 03/13/2000	RPMW-14D RPMW-14D 03/20/2000
Hexachlorobenzene	(ug/l)	0.04	10 U	200 U	10 U	400 U	10 U
Pentachlorophenol	(ug/l)	1	20 U	400 U	20 U	800 U	20 U
Phenanthrene	(ug/l)	50	42	[81] J	3 J	[180] J	1 J
Anthracene	(ug/l)	50	10	200 U	4 J	400 U	10 U
Carbazole	(ug/l)		1 J	200 U	10 U	400 U	10 U
Di-n-butyl phthalate	(ug/l)	50	10 U	200 U	10 U	400 U	10 U
Fluoranthene	(ug/l)	50	9 J	200 U	8 J	400 U	10 U
Pyrene	(ug/l)	50	14	20 J	23	[62] J	1 J
Butyl benzyl phthalate	(ug/l)	50	10 U	200 U	10 U	400 U	10 U
3,3-Dichlorobenzidine	(ug/l)	5	10 U	200 U	10 U	400 U	10 U
Benzo(a)anthracene	(ug/l)	0.002	[4] J	200 U	[4] J	400 U	10 U
Chrysene	(ug/l)	0.002	[4] J	200 U	[3] J	400 U	10 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	3 J	200 U	4 J	400 U	2 JB
Di-n-octyl phthalate	(ug/l)	50	10 U	200 U	10 U	400 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	[2] J	200 U	10 U	400 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	[1] J	200 U	10 U	400 U	10 U
Benzo(a)pyrene	(ug/l)	0	[3] J	[200] U	[10] U	[400] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[1] J	200 U	10 U	400 U	10 U
Dibenzo(a,h)anthracene	(ug/l)		10 U	200 U	10 U	400 U	10 U
Benzo(ghi)perylene	(ug/l)		1 J	200 U	10 U	400 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-14I RPMW-14I 03/09/2000	RPMW-14S RPMW-14S 03/09/2000	RPMW-15I RPMW-15I 03/06/2000
Phenol	(ug/l)	1	10 U	[7] J	10 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U	10 U	10 U
2-Chlorophenol	(ug/l)	1	10 U	10 U	10 U
1,3-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U
1,2-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U
2-Methylphenol	(ug/l)	1	10 U	[4] J	[55]
4-Methylphenol	(ug/l)	1	10 U	[4] J	[5] J
N-Nitrosodipropylamine	(ug/l)		10 U	10 U	10 U
Hexachloroethane	(ug/l)	5	10 U	10 U	10 U
Nitrobenzene	(ug/l)	0.4	10 U	10 U	10 U
Isophorone	(ug/l)	50	10 U	10 U	10 U
2-Nitrophenol	(ug/l)	1	10 U	10 U	10 U
2,4-Dimethylphenol	(ug/l)	50	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U	10 U	10 U
2,4-Dichlorophenol	(ug/l)	5	10 U	10 U	10 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	10 U	10 U
Naphthalene	(ug/l)	10	[130]	[980] D	[35]
4-Chloroaniline	(ug/l)	5	10 U	10 U	10 U
Hexachlorobutadiene	(ug/l)	0.5	10 U	10 U	10 U
4-Chloro-3-methylphenol	(ug/l)	1	10 U	10 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-14I RPMW-14I 03/09/2000	RPMW-14S RPMW-14S 03/09/2000	RPMW-15I RPMW-15I 03/06/2000
2-Methylnaphthalene	(ug/l)		8 J	71	30
Hexachlorocyclopentadiene	(ug/l)	5	10 U	10 U	10 U
2,4,6-Trichlorophenol	(ug/l)	1	10 U	10 U	10 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U	20 U	20 U
2-Chloronaphthalene	(ug/l)	10	10 U	10 U	10 U
2-Nitroaniline	(ug/l)	5	20 U	20 U	20 U
Dimethyl phthalate	(ug/l)	50	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	2 J	2 J
2,6-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U
3-Nitroaniline	(ug/l)	5	20 U	20 U	20 U
Acenaphthene	(ug/l)	20	2 J	6 J	3 J
2,4-Dinitrophenol	(ug/l)	10	20 U	20 U	20 U
4-Nitrophenol	(ug/l)	1	20 U	20 U	20 U
Dibenzofuran	(ug/l)		10 U	2 J	10 U
2,4-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U
Diethyl phthalate	(ug/l)	50	10 U	10 U	1 J
4-Chlorophenyl phenyl ether	(ug/l)		10 U	10 U	10 U
Fluorene	(ug/l)	50	3 J	8 J	4 J
4-Nitroaniline	(ug/l)	5	20 U	20 U	20 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U	20 U	20 U
N-Nitrosodiphenylamine	(ug/l)	50	10 U	10 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 23
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-14I RPMW-14I 03/09/2000	RPMW-14S RPMW-14S 03/09/2000	RPMW-15I RPMW-15I 03/06/2000
Hexachlorobenzene	(ug/l)	0.04	10 U	10 U	10 U
Pentachlorophenol	(ug/l)	1	20 U	20 U	20 U
Phenanthrene	(ug/l)	50	7 J	8 J	11
Anthracene	(ug/l)	50	10 U	2 J	1 J
Carbazole	(ug/l)		10 U	10 U	10 U
Di-n-butyl phthalate	(ug/l)	50	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	1 J	2 J	4 J
Pyrene	(ug/l)	50	1 J	4 J	4 J
Butyl benzyl phthalate	(ug/l)	50	10 U	10 U	10 U
3,3-Dichlorobenzidine	(ug/l)	5	10 U	10 U	10 U
Benzo(a)anthracene	(ug/l)	0.002	10 U	[1] J	[1] J
Chrysene	(ug/l)	0.002	10 U	[1] J	[1] J
Bis(2-ethylhexyl)phthalate	(ug/l)	5	2 J	10 U	[15]
Di-n-octyl phthalate	(ug/l)	50	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[1] J	[2] J
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U
Dibenzo(a,h)anthracene	(ug/l)		10 U	10 U	10 U
Benzo(ghi)perylene	(ug/l)		10 U	10 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/07/2000	MW-03 MW-03 03/06/2000	MW-A MW-A 03/07/2000	PZ-01 PZ-01 03/10/2000	PZ-02 PZ-02 03/08/2000
Aluminum	(ug/l)		444	88.2 B	10 U	10 U*	1760
Antimony	(ug/l)	3	3 U	3 U	3 U	3 U	3 U
Arsenic	(ug/l)	25	4.4 B	10.8 B	5.8 B	4 U	6.2 B
Barium	(ug/l)	1000	94.1 B	33.3 B	34.6 B	33.3 B	142 B
Beryllium	(ug/l)	3	2 U	2 U	2 U	2 U	2 U
Cadmium	(ug/l)	5	0.64 B	0.4 U	0.82 B	0.4 U	0.4 U
Calcium	(ug/l)		131000	43400	95400	105000	100000
Chromium	(ug/l)	50	3.1 B	19.1 B	2 U	2 U	6.3 B
Cobalt	(ug/l)		2 B	3.6 B	0.73 B	2.7 B	8.4 B
Copper	(ug/l)	200	7.7 B	8.6 B	5.8 B	5 U	18.7 B
Iron	(ug/l)	300	[3410]	[23200]	[10800]	[506] E	[15800]
Lead	(ug/l)	25	6.4 B	9.7 B	2.3 U	2.3 U	[29.7]
Magnesium	(ug/l)	35000	9750	3340	7430	9970	9940
Manganese	(ug/l)	300	[435]	204	[435]	142	[466]
Mercury	(ug/l)	0.7	0.13 U	0.14 U	0.13 U	0.15 U	0.13 U
Nickel	(ug/l)	100	0.77 B	8.1 B	0.5 U	2 B	20.9 B
Potassium	(ug/l)		3660	4880	3680	4520	3610
Selenium	(ug/l)	10	4.2 B	4 U	5.7 B	4 U	4 U
Silver	(ug/l)	50	2 U	2 U	2 U	2 U	2 U
Sodium	(ug/l)	20000	13800	9550	15100	[21500]	14100
Thallium	(ug/l)	0.5	3 U	3 U	[3.1] B	3 U	3 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/07/2000	MW-03 MW-03 03/06/2000	MW-A MW-A 03/07/2000	PZ-01 PZ-01 03/10/2000	PZ-02 PZ-02 03/08/2000
Vanadium	(ug/l)		17.2 B	7.9 B	4.4 B	2 B	9.5 B
Zinc	(ug/l)	2000	26.2 B	25.7 B	12.6 B	18 B	128
Cyanide, total	(ug/l)	200	[201]	148	110	[441]	156
Cyanide, Free	(ug/l)		5.4 B	11.5 B	4 U	15.3	5 B

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-03 PZ-03 03/03/2000	PZ-04 PZ-04 03/09/2000	PZ-05 PZ-05 03/10/2000	PZ-06 PZ-06 03/08/2000	PZ-07 PZ-07 03/08/2000
Aluminum	(ug/l)		722	40 B	10 U*	1290	182 B
Antimony	(ug/l)	3	3 U	3 U	3 U	3 U	3 U
Arsenic	(ug/l)	25	4 U	12.6	4.1 B	6.3 B	9.1 B
Barium	(ug/l)	1000	60.8 B	65.8 B	157 B	7.2 B	19.2 B
Beryllium	(ug/l)	3	2 U	2 U	2 U	2 U	2 U
Cadmium	(ug/l)	5	2 B	0.4 U	0.4 U	0.4 U	0.4 U
Calcium	(ug/l)		178000	78100	95100	37800	87500
Chromium	(ug/l)	50	4.2 B	2.2 B	2 U	2 U	2 U
Cobalt	(ug/l)		3.4 B	0.37 B	2.8 B	5.4 B	1.7 B
Copper	(ug/l)	200	33.6	5 U	5 U	5 U	5 U
Iron	(ug/l)	300	[14300]	[5960]	[35100] E	[487]	[9630]
Lead	(ug/l)	25	[117]	11.2	4.2 B	2.3 U	4.7 B
Magnesium	(ug/l)	35000	10900	9910	10600	6920	5970
Manganese	(ug/l)	300	69.1	108	282	153	35.8 B
Mercury	(ug/l)	0.7	0.14 U	0.14 U	0.15 U	0.14 U	0.13 U
Nickel	(ug/l)	100	6.6 B	4.4 B	8.7 B	15.3 B	3.3 B
Potassium	(ug/l)		2950	3380	4190	1930 B	1960 B
Selenium	(ug/l)	10	4 U	4 U	4 U	4 U	4 U
Silver	(ug/l)	50	6.8 B	2 U	2.5 B	2 U	2 U
Sodium	(ug/l)	20000	12800	[21000]	9990	[56100]	13900
Thallium	(ug/l)	0.5	3 U	3 U	3 U	3 U	3 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-03 PZ-03 03/03/2000	PZ-04 PZ-04 03/09/2000	PZ-05 PZ-05 03/10/2000	PZ-06 PZ-06 03/08/2000	PZ-07 PZ-07 03/08/2000
Vanadium	(ug/l)		6.1 B	1.9 B	4.4 B	0.5 U	5.2 B
Zinc	(ug/l)	2000	142	4 U	242	200	17.2 B
Cyanide, total	(ug/l)	200	[342] N	46.3	91.6	[374]	[370]
Cyanide, Free	(ug/l)		12.8 B	4 U	6 B	8 B	8 B

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-08 PZ-08 11/16/2001	RPMW-04I RPMW-04I 03/08/2000	RPMW-04S RPMW-04S 03/08/2000	RPMW-05I RPMW-05I 03/10/2000	RPMW-05S RPMW-05S 03/10/2000
Aluminum	(ug/l)		8 U	169 B	10 U	669 E*	412 E*
Antimony	(ug/l)	3	1 U	3 U	3 U	3 U	3 U
Arsenic	(ug/l)	25	4 B	4 U	4 U	4 U	4 U
Barium	(ug/l)	1000	45.6 B	11.4 B	6.3 B	13.1 B	27.4 B
Beryllium	(ug/l)	3	0.1 U	2 U	2 U	2 U	2 U
Cadmium	(ug/l)	5	0.58 B	0.4 U	0.4 U	0.4 U	0.4 U
Calcium	(ug/l)		124000	17100	93900	20600	98300
Chromium	(ug/l)	50	6.6 B	8.5 B	2 U	3.7 B	3.2 B
Cobalt	(ug/l)		3.9 B	0.3 U	0.77 B	1.3 B	2 B
Copper	(ug/l)	200	4.4 B	21.6 B	5 U	22.7 B	10.2 B
Iron	(ug/l)	300	[10500]	[967]	[1040]	[1580] E	[2020] E
Lead	(ug/l)	25	2 U	8.1 B	2.8 B	14.8	8.4 B
Magnesium	(ug/l)	35000	16200	3950	4900	3120	8120
Manganese	(ug/l)	300	[1050]	20.8 B	109	20.1 B	276
Mercury	(ug/l)	0.7	0.1 U	0.14 U	0.14 U	0.14 U	0.14 U
Nickel	(ug/l)	100	2.2 B	1.9 B	1.2 B	4.8 B	4.4 B
Potassium	(ug/l)		6700	2730	2740	1860	4550
Selenium	(ug/l)	10	6.8 B	4 U	4 U	4 U	4 U
Silver	(ug/l)	50	1 U	2 U	2 U	2 U	2 U
Sodium	(ug/l)	20000	14600	[22600]	[40800]	15800	18100
Thallium	(ug/l)	0.5	2 U	3 U	3 U	3 U	3 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-08 PZ-08 11/16/2001	RPMW-04I RPMW-04I 03/08/2000	RPMW-04S RPMW-04S 03/08/2000	RPMW-05I RPMW-05I 03/10/2000	RPMW-05S RPMW-05S 03/10/2000
Vanadium	(ug/l)		5.6 B	1.2 B	0.5 U	4.7 B	3.2 B
Zinc	(ug/l)	2000	6.7 B	36.9 B	4 U	48.5 B	30.2 B
Cyanide, total	(ug/l)	200	[748]	4 U	[425]	4 U	153
Cyanide, Free	(ug/l)		19 B	4 U	13.6 B	4 U	16.0

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-06I RPMW-06I 03/07/2000	RPMW-07D RPMW-07D 03/20/2000	RPMW-07I RPMW-07I 03/13/2000	RPMW-07S RPMW-07S 03/13/2000	RPMW-08I RPMW-08I 03/09/2000
Aluminum	(ug/l)		197 B	565	222 B	215 B	174 B
Antimony	(ug/l)	3	3 U	3 U	3 U	3 U	3 U
Arsenic	(ug/l)	25	4 U	5.4 B	4 U	4 U	13.1
Barium	(ug/l)	1000	20.2 B	80.6 B	12.1 B	46.4 B	24.1 B
Beryllium	(ug/l)	3	2 U	2 U	2 U	2 U	2 U
Cadmium	(ug/l)	5	0.51 B	1.3 B	0.4 U	0.4 U	0.4 U
Calcium	(ug/l)		23000	277000	22700	96400	56700
Chromium	(ug/l)	50	[51.3]	2 U	[53.1]	2 U	4.3 B
Cobalt	(ug/l)		0.38 B	0.3 U	1.3 B	2.4 B	0.56 B
Copper	(ug/l)	200	28.1 B	9.8 B	24.9 B	5 U	34.4 B
Iron	(ug/l)	300	[445]	[738]	[1220]	[3430]	[565]
Lead	(ug/l)	25	13	10.4	10.5	6.9 B	17.6
Magnesium	(ug/l)	35000	9920	[626000]	3460	10400	1760
Manganese	(ug/l)	300	17.6 B	[739]	17.7 B	[590]	9 B
Mercury	(ug/l)	0.7	0.14 U	0.15 U	0.14 U	0.14 U	0.14 U
Nickel	(ug/l)	100	0.5 U	0.5 U	4.6 B	4.2 B	5.2 B
Potassium	(ug/l)		10500	396000	21400	6120	29800
Selenium	(ug/l)	10	4 U	7.5 B	4 U	5.3 B	4 U
Silver	(ug/l)	50	2 U	5.7 B	2 U	2 U	2 U
Sodium	(ug/l)	20000	[76600]	[7750000]	[51100]	[21000]	[66300]
Thallium	(ug/l)	0.5	3 U	3 U	3 U	3 U	3 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-06I RPMW-06I 03/07/2000	RPMW-07D RPMW-07D 03/20/2000	RPMW-07I RPMW-07I 03/13/2000	RPMW-07S RPMW-07S 03/13/2000	RPMW-08I RPMW-08I 03/09/2000
Vanadium	(ug/l)		17.9 B	0.5 U	8.5 B	17.4 B	5.7 B
Zinc	(ug/l)	2000	48.4 B	4 U	32.3 B	28.8 B	12.7 B
Cyanide, total	(ug/l)	200	5.7 B	4 U	12.2 BN	[355] N	180
Cyanide, Free	(ug/l)		4 U	4 U	4.5 BN	13.8 BN	15.1

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-08S RPMW-08S 03/08/2000	RPMW-09D RPMW-09D 03/21/2000	RPMW-09D2 RPMW-09D2 03/21/2000	RPMW-09I RPMW-09I 03/14/2000	RPMW-10I RPMW-10I 03/06/2000
Aluminum	(ug/l)		44.9 B	591	723	300 B	281 B
Antimony	(ug/l)	3	3 U	3 U	3 U	3 U	3 U
Arsenic	(ug/l)	25	4 U	6.3 B	7.3 B	4 U	4 U
Barium	(ug/l)	1000	16.1 B	80.7 B	70.7 B	11.3 B	25.3 B
Beryllium	(ug/l)	3	2 U	2 U	2 U	2 U	2 U
Cadmium	(ug/l)	5	0.4 U	0.4 U	0.66 B	0.4 U	0.4 U
Calcium	(ug/l)		110000	272000	289000	25600	40400
Chromium	(ug/l)	50	2 U	2 U	2 U	25.9	48.9
Cobalt	(ug/l)		0.44 B	0.3 U	0.3 U	0.7 B	0.44 B
Copper	(ug/l)	200	5 U	5 U	5 U	15.2 B	24.7 B
Iron	(ug/l)	300	[630]	[500]	[792]	[348]	[856]
Lead	(ug/l)	25	8.7 B	3.9 B	2.7 B	5.7 B	19.5
Magnesium	(ug/l)	35000	7100	[590000]	[629000]	1080	25900
Manganese	(ug/l)	300	71.5	244	[773]	6.2 B	17.3 B
Mercury	(ug/l)	0.7	0.14 U	0.15 U	0.14 U	0.14 U	0.14 U
Nickel	(ug/l)	100	6.2 B	0.5 U	0.5 U	1.7 B	2 B
Potassium	(ug/l)		1960 B	460000	407000	8180	18100
Selenium	(ug/l)	10	4 U	6.7 B	8.3 B	5.5 B	4 U
Silver	(ug/l)	50	2 U	5.3 B	5.9 B	2 U	2 U
Sodium	(ug/l)	20000	[30600]	[7170000]	[7990000]	16600	[223000]
Thallium	(ug/l)	0.5	3 U	3 U	3 U	3 U	3 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-08S RPMW-08S 03/08/2000	RPMW-09D RPMW-09D 03/21/2000	RPMW-09D2 RPMW-09D2 03/21/2000	RPMW-09I RPMW-09I 03/14/2000	RPMW-10I RPMW-10I 03/06/2000
Vanadium	(ug/l)		0.5 U	0.5 U	0.5 U	13.7 B	2.9 B
Zinc	(ug/l)	2000	5.9 B	4 U	4 U	14.6 B	91
Cyanide, total	(ug/l)	200	[397]	4 U	4 U	4 U	8.2 B
Cyanide, Free	(ug/l)		4 U	4 U	4 U	4 U	4 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-10S RPMW-10S 03/06/2000	RPMW-12D RPMW-12D 03/20/2000	RPMW-12D2 RPMW-12D2 03/20/2000	RPMW-12I RPMW-12I 03/09/2000	RPMW-12S RPMW-12S 03/09/2000
Aluminum	(ug/l)		38.1 B	997	393	585	171 B
Antimony	(ug/l)	3	3 U	3 U	3 U	3 U	3 U
Arsenic	(ug/l)	25	4 U	4.1 B	5.9 B	6.2 B	13.9
Barium	(ug/l)	1000	19 B	52.3 B	54.3 B	26.1 B	103 B
Beryllium	(ug/l)	3	2 U	2 U	2 U	2 U	2 U
Cadmium	(ug/l)	5	0.4 U	0.4 U	0.4 U	0.4 U	0.73 B
Calcium	(ug/l)		101000	231000	296000	32600	91200
Chromium	(ug/l)	50	3 B	2 U	2 U	13.3 B	3.2 B
Cobalt	(ug/l)		3.2 B	0.3 U	0.3 U	0.3 U	0.91 B
Copper	(ug/l)	200	5 U	5 U	10.1 B	31.8 B	5 U
Iron	(ug/l)	300	[3220]	[1400]	[576]	[2050]	[34900]
Lead	(ug/l)	25	8 B	16.3	2.3 U	[65.6]	7.5 B
Magnesium	(ug/l)	35000	5450	[478000]	[621000]	5680	8190
Manganese	(ug/l)	300	155	66.5	148	47.1 B	266
Mercury	(ug/l)	0.7	0.15 U	0.14 U	0.15 U	0.14 U	0.14 U
Nickel	(ug/l)	100	7.7 B	0.5 U	0.5 U	3.3 B	4.5 B
Potassium	(ug/l)		5500	334000	395000	5090	8660
Selenium	(ug/l)	10	4 U	6.4 B	7.1 B	4 U	4 U
Silver	(ug/l)	50	2.1 B	4.6 B	5.8 B	2 U	2 U
Sodium	(ug/l)	20000	11300	[5410000]	[7880000]	[27500]	[104000]
Thallium	(ug/l)	0.5	3 U	3 U	3 U	3 U	3 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-10S RPMW-10S 03/06/2000	RPMW-12D RPMW-12D 03/20/2000	RPMW-12D2 RPMW-12D2 03/20/2000	RPMW-12I RPMW-12I 03/09/2000	RPMW-12S RPMW-12S 03/09/2000
Vanadium	(ug/l)		4.6 B	0.5 U	0.5 U	3.1 B	8.2 B
Zinc	(ug/l)	2000	51	4 U	4 U	66	8.9 B
Cyanide, total	(ug/l)	200	[233]	4 U	29.3	9.6 B	[562]
Cyanide, Free	(ug/l)		9.3 B	4 U	4 U	4 U	41.4

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-13D RPMW-13D 03/18/2000	RPMW-13D2 RPMW-13D2 03/18/2000	RPMW-13I RPMW-13I 03/13/2000	RPMW-13S RPMW-13S 03/13/2000	RPMW-14D RPMW-14D 03/20/2000
Aluminum	(ug/l)		190 B	87.5 B	313	48.3 B	213 B
Antimony	(ug/l)	3	3 U	[4.1] B	3 U	3 U	3 U
Arsenic	(ug/l)	25	4 U	4 U	4 U	4 U	9.6 B
Barium	(ug/l)	1000	43.8 B	44.1 B	18.3 B	73.5 B	43.6 B
Beryllium	(ug/l)	3	2 U	2 U	2 U	2 U	2 U
Cadmium	(ug/l)	5	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Calcium	(ug/l)		209000	243000	20700	68700	261000
Chromium	(ug/l)	50	4.3 B	2 U	[70.3]	2 U	2 U
Cobalt	(ug/l)		2.6 B	1.4 B	0.49 B	0.67 B	0.3 U
Copper	(ug/l)	200	90.8	74.9	21.1 B	5 U	68.5
Iron	(ug/l)	300	[923] E	[610] E	[1070]	[5020]	[441]
Lead	(ug/l)	25	3.6 B	2.3 U	20.8	2.3 U	4.6 B
Magnesium	(ug/l)	35000	[523000] E	[622000] E	1490	11300	[567000]
Manganese	(ug/l)	300	54.6 E	154 E	17 B	288	68.4
Mercury	(ug/l)	0.7	0.15 U	0.14 U	0.15 U	0.14 U	0.22 B
Nickel	(ug/l)	100	5.8 B	0.5 U	1.8 B	2.1 B	0.5 U
Potassium	(ug/l)		544000 E	746000 E	9490	10200	443000
Selenium	(ug/l)	10	4 U	4 U	5.3 B	8.2 B	6.5 B
Silver	(ug/l)	50	5.1 B	5.8 B	2 U	2 U	5.1 B
Sodium	(ug/l)	20000	[2470000] E	[3250000] E	11000	[49100]	[6930000]
Thallium	(ug/l)	0.5	3 U	3 U	3 U	3 U	3 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-13D RPMW-13D 03/18/2000	RPMW-13D2 RPMW-13D2 03/18/2000	RPMW-13I RPMW-13I 03/13/2000	RPMW-13S RPMW-13S 03/13/2000	RPMW-14D RPMW-14D 03/20/2000
Vanadium	(ug/l)		0.5 U	0.5 U	2.9 B	17.6 B	0.5 U
Zinc	(ug/l)	2000	11 B	16.4 B	46.1 B	10.9 B	4 U
Cyanide, total	(ug/l)	200	4 U	4 U	4.4 NB	156 N	4 U
Cyanide, Free	(ug/l)		4 U	4 U	4.0 UN	20.1 N	4 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-14I RPMW-14I 03/09/2000	RPMW-14S RPMW-14S 03/09/2000	RPMW-15I RPMW-15I 03/06/2000
Aluminum	(ug/l)		217 B	29.9 B	548
Antimony	(ug/l)	3	3 U	3 U	[4.2] B
Arsenic	(ug/l)	25	4.1 B	4 U	4 U
Barium	(ug/l)	1000	12.4 B	85.1 B	44.4 B
Beryllium	(ug/l)	3	2 U	2 U	2 U
Cadmium	(ug/l)	5	0.4 U	0.4 U	1.1 B
Calcium	(ug/l)		32100	77300	78500
Chromium	(ug/l)	50	28.1	2 U	30.2
Cobalt	(ug/l)		0.3 U	0.3 U	1.2 B
Copper	(ug/l)	200	11.8 B	5 U	51.7
Iron	(ug/l)	300	282 B	[14700]	[3260]
Lead	(ug/l)	25	19.4	6.3 B	[56.1]
Magnesium	(ug/l)	35000	3560	9610	[43900]
Manganese	(ug/l)	300	12.3 B	[306]	38.2 B
Mercury	(ug/l)	0.7	0.14 U	0.14 U	0.14 U
Nickel	(ug/l)	100	2.1 B	2.2 B	5.3 B
Potassium	(ug/l)		8320	3840	27300
Selenium	(ug/l)	10	4 U	4 U	4 U
Silver	(ug/l)	50	2 U	2 U	3.8 B
Sodium	(ug/l)	20000	19200	[71600]	[361000]
Thallium	(ug/l)	0.5	3 U	3 U	3 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 24
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-14I RPMW-14I 03/09/2000	RPMW-14S RPMW-14S 03/09/2000	RPMW-15I RPMW-15I 03/06/2000
Vanadium	(ug/l)		4.3 B	3.3 B	3.5 B
Zinc	(ug/l)	2000	7 B	4 U	155
Cyanide, total	(ug/l)	200	4 U	112	20.9
Cyanide, Free	(ug/l)		4 U	4 U	4 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]:Exceeds SCG
---=Not analyzed

TABLE 25
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/07/2000	MW-03 MW-03 03/06/2000	MW-A MW-A 03/07/2000	PZ-01 PZ-01 03/10/2000	PZ-02 PZ-02 03/09/2000
Chloride	(ug/l)	250000	25000	10000	27000	13000	20000
Total Dissolved Solids	(ug/l)		480000	300000	380000	460000	410000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 25
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-03 PZ-03 03/03/2000	PZ-04 PZ-04 03/09/2000	PZ-05 PZ-05 03/10/2000	PZ-06 PZ-06 03/08/2000	PZ-07 PZ-07 03/08/2000
Chloride	(ug/l)	250000	28000	34000	23000	90000	24000
Total Dissolved Solids	(ug/l)		820000	400000	430000	420000	420000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 25
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	PZ-08 PZ-08 11/16/2001	RPMW-04I RPMW-04I 03/08/2000	RPMW-04S RPMW-04S 03/08/2000	RPMW-05I RPMW-05I 03/10/2000	RPMW-05S RPMW-05S 03/10/2000
Chloride	(ug/l)	250000	13000	48000	65000	38000	35000
Total Dissolved Solids	(ug/l)		480000	160000	490000	130000	430000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 25
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-06I RPMW-06I 03/07/2000	RPMW-07D RPMW-07D 03/20/2000	RPMW-07I RPMW-07I 03/13/2000	RPMW-07S RPMW-07S 03/13/2000	RPMW-08I RPMW-08I 03/09/2000
Chloride	(ug/l)	250000	90000	[17000000]	96000	36000	88000
Total Dissolved Solids	(ug/l)		260000	28000000	310000	530000	430000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 25
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-08S RPMW-08S 03/08/2000	RPMW-09D RPMW-09D 03/21/2000	RPMW-09D2 RPMW-09D2 03/21/2000	RPMW-09I RPMW-09I 03/14/2000	RPMW-10I RPMW-10I 03/06/2000
Chloride	(ug/l)	250000	47000	[14000000]	[19000000]	34000	[440000]
Total Dissolved Solids	(ug/l)		550000	25000000	28000000	180000	910000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 25
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-10S RPMW-10S 03/06/2000	RPMW-12D RPMW-12D 03/20/2000	RPMW-12D2 RPMW-12D2 03/20/2000	RPMW-12I RPMW-12I 03/09/2000	RPMW-12S RPMW-12S 03/09/2000
Chloride	(ug/l)	250000	15000	[11000000]	[14000000]	54000	170000
Total Dissolved Solids	(ug/l)		410000	19000000	27000000	230000	730000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 25
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-13D RPMW-13D 03/18/2000	RPMW-13D2 RPMW-13D2 03/18/2000	RPMW-13I RPMW-13I 03/13/2000	RPMW-13S RPMW-13S 03/13/2000	RPMW-14D RPMW-14D 03/20/2000
Chloride	(ug/l)	250000	[12000000]	[17000000]	16000	110000	[14000000]
Total Dissolved Solids	(ug/l)		21000000	27000000	130000	480000	24000000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 25
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
MONITORING WELL AND PIEZOMETER SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/03/2000 thru 11/16/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-14I RPMW-14I 03/09/2000	RPMW-14S RPMW-14S 03/09/2000	RPMW-15I RPMW-15I 03/06/2000
Chloride	(ug/l)	250000	32000	140000	[750000]
Total Dissolved Solids	(ug/l)		200000	590000	1600000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

Date: 09/14/2000

TABLE 26
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
ON-SITE INVESTIGATION PROGRAM
AMBIENT AIR SAMPLE RESULTS
BTEX COMPOUNDS AND NAPHTHALENE

PERIOD: From 01/04/2000 thru 01/04/2000 - Inclusive
SAMPLE TYPE: Ambient Air

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPAA-01 RPAA-01 01/04/2000 0.00	RPAA-02 RPAA-02 01/04/2000 0.00	RPAA-03 RPAA-03 01/04/2000 0.00	RPAA-04 RPAA-04 01/04/2000 0.00
Benzene	(ppbv)	0.94U	1.1U	1.1U	0.82U
Ethylbenzene	(ppbv)	0.94U	1.1U	1.1U	0.82U
Toluene	(ppbv)	2.8	1.1U	1.1U	0.82U
m/p-xylene	(ppbv)	3.8	1.1U	1.1U	0.82U
o-Xylene	(ppbv)	1.3	1.1U	1.1U	0.82U
Naphthalene	(ppbv)	19U	21U	22U	16U

ppbv: parts per billion by volume
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 27
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
ON-SITE SOIL VAPOR SAMPLE RESULTS
BTEX COMPOUNDS AND NAPHTHALENE

PERIOD: From 11/21/2001 thru 11/21/2001 - Inclusive
SAMPLE TYPE: Soil Vapor

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSV-25 RPSV-25 11/21/2001 0.00
Benzene	(ppbv)	13
Ethylbenzene	(ppbv)	3.3
Toluene	(ppbv)	27
m/p-xylene	(ppbv)	14
o-Xylene	(ppbv)	9.2
Naphthalene	(ppbv)	12 U

ppbv: parts per billion by volume
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 28
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 02/08/2000 thru 02/16/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-01 RPSS-01 (0-6") 02/08/2000 0.00	RPSS-02 RPSS-02 (0-6") 02/10/2000 0.00	RPSS-03 RPSS-03 (0-6") 02/16/2000 0.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001
Xylene (total)	(mg/kg)	1.2	0.001 U	0.002	0.003
Total BTEX	(mg/kg)		0.00	0.002	0.004

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 29
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 02/08/2000 thru 02/16/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-01 RPSS-01 (0-6") 02/08/2000 0.00	RPSS-02 RPSS-02 (0-6") 02/10/2000 0.00	RPSS-03 RPSS-03 (0-6") 02/16/2000 0.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.28] J	[0.25] J	1.6 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	1.7 U	0.34 U	1.6 U
Benzo(a)anthracene	(mg/kg)	0.224	[0.29] J	[0.26] J	1.6 U
Acenaphthene	(mg/kg)	50	1.7 U	0.34 U	1.6 U
Phenanthrene	(mg/kg)	50	0.7 J	0.15 J	0.22 J
Fluorene	(mg/kg)	50	1.7 U	0.34 U	1.6 U
Naphthalene	(mg/kg)	13	1.7 U	0.34 U	1.6 U
2-Methylnaphthalene	(mg/kg)	36.4	1.7 U	0.34 U	1.6 U
Anthracene	(mg/kg)	50	0.19 J	0.039 J	1.6 U
Pyrene	(mg/kg)	50	0.52 J	0.56	0.31 J
Dibenzofuran	(mg/kg)	6.2	1.7 U	0.34 U	1.6 U
Benzo(g,h,i)perylene	(mg/kg)	50	1.7 U	0.24 J	1.6 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	1.7 U	0.23 J	1.6 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.4 J	0.33 J	1.6 U
Fluoranthene	(mg/kg)	50	0.45 J	0.38	0.25 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.13 J	0.15 J	1.6 U
Acenaphthylene	(mg/kg)	41	1.7 U	0.34 U	1.6 U
Chrysene	(mg/kg)	0.4	0.25 J	0.29 J	1.6 U
Total CAPAHs	(mg/kg)	10	1.35	1.51	0.00
Total PAHs	(mg/kg)	500	3.21	2.879	0.78

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 30
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 02/08/2000 thru 02/16/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-01 RPSS-01 (0-6") 02/08/2000 0.00	RPSS-02 RPSS-02 (0-6") 02/10/2000 0.00	RPSS-03 RPSS-03 (0-6") 02/16/2000 0.00
Arsenic	(mg/kg)	7.5	3.6	0.61 B	1.1 B
Barium	(mg/kg)	300	52.9	5 B	12.8 B
Cadmium	(mg/kg)	10	0.98	0.29 B	0.17 B
Chromium	(mg/kg)	50	4.8	2.4	5.7
Lead	(mg/kg)	500	206	16.5	69.6
Mercury	(mg/kg)	0.10	[0.48]	0.017 B	0.051
Selenium	(mg/kg)	2	0.41 U	0.39 U	0.27 U
Silver	(mg/kg)		1.5 B	0.19 U	0.29 B
Cyanide	(mg/kg)		0.15 B	0.16 B	0.45 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 31
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 02/08/2000 thru 02/16/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	RPSS-01	RPSS-02	RPSS-03
	SAMPLE ID	RPSS-01 (0-6")	RPSS-02 (0-6")	RPSS-03 (0-6")
	DATE	02/08/2000	02/10/2000	02/16/2000
	DEPTH (ft)	0.00	0.00	0.00
Total Phenols	(mg/kg)	12U	13U	11U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 32
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/05/2002 thru 03/08/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-17 RPSS-17(0-2") 03/08/2002 0.00	RPSS-18 RPSS-18(0-2") 03/05/2002 0.00	RPSS-19 RPSS-19(0-2") 03/05/2002 0.00	RPSS-20 RPSS-20(0-2") 03/05/2002 0.00	RPSS-21 RPSS-21(0-2") 03/08/2002 0.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 J	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.006	0.001 U	0.016	0.001 U
Xylene (total)	(mg/kg)	1.2	0.008	0.002	0.001 J	0.002	0.006
Total BTEX	(mg/kg)		0.008	0.008	0.001	0.019	0.006

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 32
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/05/2002 thru 03/08/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-22 RPSS-22(0-2") 03/05/2002 0.00	RPSS-23 RPSS-23(0-2") 03/05/2002 0.00	RPSS-24 RPSS-24(0-2") 03/08/2002 0.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.014
Total BTEX	(mg/kg)		0.00	0.00	0.014

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 33
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/05/2002 thru 03/08/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-17 RPSS-17(0-2") 03/08/2002 0.00	RPSS-18 RPSS-18(0-2") 03/05/2002 0.00	RPSS-19 RPSS-19(0-2") 03/05/2002 0.00	RPSS-20 RPSS-20(0-2") 03/05/2002 0.00	RPSS-21 RPSS-21(0-2") 03/08/2002 0.00
Benzo(a)pyrene	(mg/kg)	0.061	[1.7] J	[1.1]	[0.92]	[2.4]	[3]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[0.59] J	[0.2] J	[0.23] J	[0.35]	[0.38]
Benzo(a)anthracene	(mg/kg)	0.224	[3.2] J	[1.9]	[1.8]	[4.4]	[8.6] D
Acenaphthene	(mg/kg)	50	3.6 U	0.078 J	0.054 J	0.16 J	0.38
Phenanthrene	(mg/kg)	50	3.8	1.3	0.7	3.1	17 D
Fluorene	(mg/kg)	50	3.6 U	0.15 J	0.36 U	0.39	1.8
Naphthalene	(mg/kg)	13	1.4 J	0.15 J	0.26 J	0.34 J	0.17 J
2-Methylnaphthalene	(mg/kg)	36.4	0.93 J	0.12 J	0.17 J	0.3 J	0.15 J
Anthracene	(mg/kg)	50	1.5 J	0.76	0.56	1.3	2.5
Pyrene	(mg/kg)	50	5.8	3.4	3	7.2 D	23 D
Dibenzofuran	(mg/kg)	6.2	3.6 U	0.055 J	0.065 J	0.09 J	0.22 J
Benzo(g,h,i)perylene	(mg/kg)	50	1.5 J	0.61	0.52	0.82	0.94
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	1.7 J	0.72	0.65	0.98	1.3
Benzo(b)fluoranthene	(mg/kg)	1.1	[3.4] J	[2.3]	[2.2]	[3.7]	[4.8]
Fluoranthene	(mg/kg)	50	3.8	2.2	1.8	4.3	15 D
Benzo(k)fluoranthene	(mg/kg)	1.1	[1.2] J	0.87	0.76	[1.2]	[1.7]
Acenaphthylene	(mg/kg)	41	3.4 J	0.91	1.2	1.8	2.7
Chrysene	(mg/kg)	0.4	[4.4]	[2.3]	[2.2]	[4.9]	[7.6] D
Total CAPAHs	(mg/kg)	10	[14.66]	9.390	8.760	[17.930]	[27.380]
Total PAHs	(mg/kg)	500	36.790	19.123	17.089	37.730	91.240

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 33
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/05/2002 thru 03/08/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-22 RPSS-22(0-2") 03/05/2002 0.00	RPSS-23 RPSS-23(0-2") 03/05/2002 0.00	RPSS-24 RPSS-24(0-2") 03/08/2002 0.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.48]	[1.7]	[3.7]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[0.13] J	[0.29] J	[1.7] J
Benzo(a)anthracene	(mg/kg)	0.224	[0.72]	[3.2]	[5.6]
Acenaphthene	(mg/kg)	50	0.034 J	0.055 J	3.4 U
Phenanthrene	(mg/kg)	50	0.33 J	1.6	1.8 J
Fluorene	(mg/kg)	50	0.33 U	0.36 U	3.4 U
Naphthalene	(mg/kg)	13	0.14 J	0.22 J	0.73 J
2-Methylnaphthalene	(mg/kg)	36.4	0.094 J	0.16 J	0.64 J
Anthracene	(mg/kg)	50	0.32 J	0.86	2.8 J
Pyrene	(mg/kg)	50	1.3	5.5	9.2
Dibenzofuran	(mg/kg)	6.2	0.33 U	0.056 J	3.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.35	0.73	6.6
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.39	0.84	[6.1]
Benzo(b)fluoranthene	(mg/kg)	1.1	[1.2]	[3]	[8.2]
Fluoranthene	(mg/kg)	50	0.9	3.3	4.7
Benzo(k)fluoranthene	(mg/kg)	1.1	0.38	[1.1]	[2.8] J
Acenaphthylene	(mg/kg)	41	0.85	1.3	7.2
Chrysene	(mg/kg)	0.4	[1.1]	[3.6]	[6.8]
Total CAPAHs	(mg/kg)	10	4.40	[13.730]	[34.90]
Total PAHs	(mg/kg)	500	8.718	27.511	68.57

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 34
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/05/2002 thru 03/08/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-17 RPSS-17(0-2") 03/08/2002 0.00	RPSS-18 RPSS-18(0-2") 03/05/2002 0.00	RPSS-19 RPSS-19(0-2") 03/05/2002 0.00	RPSS-20 RPSS-20(0-2") 03/05/2002 0.00	RPSS-21 RPSS-21(0-2") 03/08/2002 0.00
Lead	(mg/kg)	500	289	96.0	108	45.6	88.7
Mercury	(mg/kg)	0.10	[0.15]	0.063	[0.30]	[0.21]	[0.14]
Silver	(mg/kg)		0.10 U	0.11 U	0.11 U	0.10 U	0.092 U
Arsenic	(mg/kg)	7.5	[8.3]	3.6	6.5	6.0	[12.2]
Barium	(mg/kg)	300	37.7	19.5	20.9	16.0	20.4
Cadmium	(mg/kg)	10	0.51	0.37	0.26 B	0.20 B	0.37
Chromium	(mg/kg)	50	6.9	5.6	5.3	3.9	6.3
Selenium	(mg/kg)	2	0.52 B	0.44 U	0.44 U	0.40 U	0.37 U
Cyanide	(mg/kg)		21.3	2.8	1.2	1.0	1.4

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 34
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/05/2002 thru 03/08/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSS-22 RPSS-22(0-2") 03/05/2002 0.00	RPSS-23 RPSS-23(0-2") 03/05/2002 0.00	RPSS-24 RPSS-24(0-2") 03/08/2002 0.00
Lead	(mg/kg)	500	61.0	82.3	140
Mercury	(mg/kg)	0.10	0.053	0.095	[0.17]
Silver	(mg/kg)		0.088 U	0.092 U	0.089 U
Arsenic	(mg/kg)	7.5	3.7	4.5	[7.9]
Barium	(mg/kg)	300	14.2	27.7	52.9
Cadmium	(mg/kg)	10	0.50	0.35	0.46
Chromium	(mg/kg)	50	4.4	9.5	11.2
Selenium	(mg/kg)	2	0.35 U	0.37 U	0.36 U
Cyanide	(mg/kg)		6.9	3.4	7.5

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 35
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/05/2002 thru 03/08/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSS-17 RPSS-17(0-2") 03/08/2002 0.00	RPSS-18 RPSS-18(0-2") 03/05/2002 0.00	RPSS-19 RPSS-19(0-2") 03/05/2002 0.00	RPSS-20 RPSS-20(0-2") 03/05/2002 0.00	RPSS-21 RPSS-21(0-2") 03/08/2002 0.00	RPSS-22 RPSS-22(0-2") 03/05/2002 0.00
Total Phenols	(mg/kg)	29 U	22 U	21 U	20 U	29 U	18 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 35
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/05/2002 thru 03/08/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	RPSS-23	RPSS-24
	SAMPLE ID	RPSS-23(0-2")	RPSS-24(0-2")
	DATE	03/05/2002	03/08/2002
	DEPTH (ft)	0.00	0.00
Total Phenols	(mg/kg)	21 U	29 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 36
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-01 RPSB-01 (38-40) 02/07/2000 38.00	RPSB-02 RPSB-02 (20-22) 02/09/2000 20.00	RPSB-02 RPSB-02 (40-42) 02/09/2000 40.00	RPSB-02A RPSB-02A(30-32) 02/18/2000 30.00
Benzene	(mg/kg)	0.06	0.005 U	0.001 U	0.001 U	0.001 U	0.002
Ethylbenzene	(mg/kg)	5.5	0.005 U	0.001 U	0.001 U	0.002	0.035
Toluene	(mg/kg)	1.5	0.005 U	0.002	0.001 U	0.001	0.001 U
Xylene (total)	(mg/kg)	1.2	0.005 U	0.003	0.002	0.003	0.021
Total BTEX	(mg/kg)		0.00	0.005	0.002	0.006	0.058

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 36
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-02A RPSB-02A(55-57) 02/18/2000 55.00	RPSB-03 RPSB-03 (5-7) 02/10/2000 5.00	RPSB-03 RPSB-03 (30-32) 02/10/2000 30.00	RPSB-04 RPSB-04 (25-27) 02/14/2000 25.00	RPSB-04 RPSB-04 (45-47) 02/15/2000 45.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	[0.15]	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001	0.63	0.001	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.002	0.012 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.002	0.007	0.21	0.001	0.001
Total BTEX	(mg/kg)		0.002	0.01	0.99	0.002	0.001

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 36
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-05 RPSB-05 (4-6) 02/16/2000 4.00	RPSB-05 RPSB-05 (24-26) 02/16/2000 24.00	RPSB-05 RPSB-05 (65-67) 02/17/2000 65.00	RPSB-55 RPSB-55 (10-12) 03/06/2000 10.00	RPSB-55 RPSB-55 (40-42) 03/06/2000 40.00
Benzene	(mg/kg)	0.06	0.001 U	0.002	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.005	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.006	0.003	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.00	0.013	0.003	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 36
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-56 RPSB-56 (5-7) 03/06/2000 5.00	RPSB-56 RPSB-56 (40-42) 03/06/2000 40.00	RPSB-57 RPSB-57 (15-17) 02/24/2000 15.00	RPSB-57 RPSB-57 (40-42) 02/24/2000 40.00	RPSB-58 RPSB-58 (4-6) 01/26/2000 4.00
Benzene	(mg/kg)	0.06	0.013 U	0.001 U	0.001 U	0.001 U	0.013
Ethylbenzene	(mg/kg)	5.5	0.013 U	0.001 U	0.001 U	0.001 U	0.004
Toluene	(mg/kg)	1.5	0.013 U	0.001 U	0.001 U	0.001 U	0.04
Xylene (total)	(mg/kg)	1.2	0.013 U	0.001 U	0.001 U	0.001 U	0.02
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.00	0.077

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 36
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-58 RPSB-58 (40-42) 01/31/2000 40.00	RPSB-59 RPSB-59 (5-7) 02/15/2000 5.00	RPSB-59 RPSB-59 (40-42) 02/15/2000 40.00	RPSB-60 RPSB-60 (15-17) 02/07/2000 15.00	RPSB-60 RPSB-60 (40-42) 02/07/2000 40.00
Benzene	(mg/kg)	0.06	0.003	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.008 J	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.012	0.001 U	0.001 U	0.001 U	0.003
Xylene (total)	(mg/kg)	1.2	0.009	0.001 U	0.001 U	0.004	0.012
Total BTEX	(mg/kg)		0.032	0.00	0.00	0.004	0.015

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 36
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-61 RPSB-61 (10-12) 02/10/2000 10.00	RPSB-61 RPSB-61 (55-57) 02/10/2000 55.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00	RPSB-62 RPSB-62 (40-42) 02/11/2000 40.00	RPSB-63 RPSB-63 (15-17) 02/23/2000 15.00
Benzene	(mg/kg)	0.06	[20]	0.001 U	0.005 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	[190]	0.001 U	0.005 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	[180]	0.002	0.005 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	[2400]	0.006	0.005 U	0.003	0.001 U
Total BTEX	(mg/kg)		2790.00	0.008	0.00	0.003	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 36
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-63 RPSB-63 (45-47) 02/23/2000 45.00
Benzene	(mg/kg)	0.06	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U
Toluene	(mg/kg)	1.5	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U
Total BTEX	(mg/kg)		0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 37
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-01 RPSB-01 (38-40) 02/07/2000 38.00	RPSB-02 RPSB-02 (20-22) 02/09/2000 20.00	RPSB-02 RPSB-02 (40-42) 02/09/2000 40.00	RPSB-02A RPSB-02A(30-32) 02/18/2000 30.00
Benzo(a)pyrene	(mg/kg)	0.061	0.34 U	0.42 U	0.4 U	0.4 U	[7]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.34 U	0.42 U	0.4 U	0.4 U	[0.97] J
Benzo(a)anthracene	(mg/kg)	0.224	0.34 U	0.42 U	0.4 U	0.4 U	[8.5]
Acenaphthene	(mg/kg)	50	0.34 U	0.074 J	0.4 U	0.4 U	23
Phenanthrene	(mg/kg)	50	0.042 J	0.047 J	0.4 U	0.4 U	2.2
Fluorene	(mg/kg)	50	0.34 U	0.42 U	0.4 U	0.4 U	1.5 U
Naphthalene	(mg/kg)	13	0.34 U	0.42 U	0.4 U	0.4 U	12
2-Methylnaphthalene	(mg/kg)	36.4	0.34 U	0.092 J	0.4 U	0.4 U	1.7
Anthracene	(mg/kg)	50	0.34 U	0.42 U	0.4 U	0.4 U	3.7
Pyrene	(mg/kg)	50	0.34 U	0.42 U	0.4 U	0.4 U	26 D
Dibenzofuran	(mg/kg)	6.2	0.34 U	0.42 U	0.4 U	0.4 U	0.56 J
Benzo(g,h,i)perylene	(mg/kg)	50	0.34 U	0.42 U	0.4 U	0.4 U	3.4
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.34 U	0.42 U	0.4 U	0.4 U	[3.2]
Benzo(b)fluoranthene	(mg/kg)	1.1	0.34 U	0.42 U	0.4 U	0.4 U	[6]
Fluoranthene	(mg/kg)	50	0.34 U	0.42 U	0.4 U	0.4 U	16
Benzo(k)fluoranthene	(mg/kg)	1.1	0.34 U	0.42 U	0.4 U	0.4 U	[2.2]
Acenaphthylene	(mg/kg)	41	0.34 U	0.058 J	0.4 U	0.4 U	19
Chrysene	(mg/kg)	0.4	0.34 U	0.42 U	0.4 U	0.4 U	[8]
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	0.00	[35.87]
Total PAHs	(mg/kg)	500	0.042	0.271	0.00	0.00	143.43

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 37
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-02A RPSB-02A(55-57) 02/18/2000 55.00	RPSB-03 RPSB-03 (5-7) 02/10/2000 5.00	RPSB-03 RPSB-03 (30-32) 02/10/2000 30.00	RPSB-04 RPSB-04 (25-27) 02/14/2000 25.00	RPSB-04 RPSB-04 (45-47) 02/15/2000 45.00
Benzo(a)pyrene	(mg/kg)	0.061	0.4 U	[0.38] J	[21]	0.4 U	0.39 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	3.5 U	8.4 U	0.4 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	0.4 U	[0.54] J	[28]	0.4 U	0.39 U
Acenaphthene	(mg/kg)	50	0.4 U	3.5 U	[65]	0.4 U	0.39 U
Phenanthrene	(mg/kg)	50	0.4 U	0.66 J	[110]	0.073 J	0.39 U
Fluorene	(mg/kg)	50	0.4 U	3.5 U	37	0.4 U	0.39 U
Naphthalene	(mg/kg)	13	0.057 J	3.5 U	[91]	0.4 U	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	3.5 U	[58]	0.4 U	0.39 U
Anthracene	(mg/kg)	50	0.4 U	3.5 U	35	0.4 U	0.39 U
Pyrene	(mg/kg)	50	0.048 J	0.96 J	[72]	0.4 U	0.39 U
Dibenzofuran	(mg/kg)	6.2	0.4 U	3.5 U	3.5 J	0.4 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	3.5 U	8.2 J	0.4 U	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	3.5 U	[7.7] J	0.4 U	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.4 U	0.49 J	[16]	0.4 U	0.39 U
Fluoranthene	(mg/kg)	50	0.4 U	0.45 J	47	0.4 U	0.39 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	3.5 U	[8.2] J	0.4 U	0.39 U
Acenaphthylene	(mg/kg)	41	0.4 U	3.5 U	4 J	0.4 U	0.39 U
Chrysene	(mg/kg)	0.4	0.4 U	[0.61] J	[23]	0.4 U	0.39 U
Total CAPAHs	(mg/kg)	10	0.00	2.02	[103.90]	0.00	0.00
Total PAHs	(mg/kg)	500	0.105	4.09	[634.60]	0.073	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 37
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-05 RPSB-05 (4-6) 02/16/2000 4.00	RPSB-05 RPSB-05 (24-26) 02/16/2000 24.00	RPSB-05 RPSB-05 (65-67) 02/17/2000 65.00	RPSB-55 RPSB-55 (10-12) 03/06/2000 10.00	RPSB-55 RPSB-55 (40-42) 03/06/2000 40.00
Benzo(a)pyrene	(mg/kg)	0.061	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Benzo(a)anthracene	(mg/kg)	0.224	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Acenaphthene	(mg/kg)	50	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Phenanthrene	(mg/kg)	50	0.35 U	0.059 J	0.38 U	0.4 U	0.41 U
Fluorene	(mg/kg)	50	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Naphthalene	(mg/kg)	13	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
2-Methylnaphthalene	(mg/kg)	36.4	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Anthracene	(mg/kg)	50	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Pyrene	(mg/kg)	50	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Dibenzofuran	(mg/kg)	6.2	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Fluoranthene	(mg/kg)	50	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Acenaphthylene	(mg/kg)	41	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Chrysene	(mg/kg)	0.4	0.35 U	0.39 U	0.38 U	0.4 U	0.41 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.059	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 37
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-56 RPSB-56 (5-7) 03/06/2000 5.00	RPSB-56 RPSB-56 (40-42) 03/06/2000 40.00	RPSB-57 RPSB-57 (15-17) 02/24/2000 15.00	RPSB-57 RPSB-57 (40-42) 02/24/2000 40.00	RPSB-58 RPSB-58 (4-6) 01/26/2000 4.00
Benzo(a)pyrene	(mg/kg)	0.061	[25]	0.41 U	0.42 U	0.4 U	0.39 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[3.8] J	0.41 U	0.42 U	0.4 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	[26]	0.41 U	0.42 U	0.4 U	0.39 U
Acenaphthene	(mg/kg)	50	14	0.41 U	0.42 U	0.4 U	0.39 U
Phenanthrene	(mg/kg)	50	[77]	0.41 U	0.42 U	0.4 U	0.39 U
Fluorene	(mg/kg)	50	13	0.41 U	0.42 U	0.4 U	0.39 U
Naphthalene	(mg/kg)	13	8.2	0.41 U	0.42 U	0.4 U	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	5.5 J	0.41 U	0.42 U	0.4 U	0.39 U
Anthracene	(mg/kg)	50	19	0.41 U	0.42 U	0.4 U	0.39 U
Pyrene	(mg/kg)	50	[51]	0.41 U	0.42 U	0.4 U	0.39 U
Dibenzofuran	(mg/kg)	6.2	[12]	0.41 U	0.42 U	0.4 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	17	0.41 U	0.42 U	0.4 U	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[17]	0.41 U	0.42 U	0.4 U	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[32]	0.41 U	0.42 U	0.4 U	0.39 U
Fluoranthene	(mg/kg)	50	[63]	0.41 U	0.42 U	0.4 U	0.39 U
Benzo(k)fluoranthene	(mg/kg)	1.1	[8.4]	0.41 U	0.42 U	0.4 U	0.39 U
Acenaphthylene	(mg/kg)	41	3.5 J	0.41 U	0.42 U	0.4 U	0.39 U
Chrysene	(mg/kg)	0.4	[25]	0.41 U	0.42 U	0.4 U	0.39 U
Total CAPAHs	(mg/kg)	10	[137.20]	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	420.40	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 37
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-58 RPSB-58 (40-42) 01/31/2000 40.00	RPSB-59 RPSB-59 (5-7) 02/15/2000 5.00	RPSB-59 RPSB-59 (40-42) 02/15/2000 40.00	RPSB-60 RPSB-60 (15-17) 02/07/2000 15.00	RPSB-60 RPSB-60 (40-42) 02/07/2000 40.00
Benzo(a)pyrene	(mg/kg)	0.061	0.4 U	0.43 U	0.45 U	0.38 U	0.41 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	0.43 U	0.45 U	0.38 U	0.41 U
Benzo(a)anthracene	(mg/kg)	0.224	0.053 J	0.43 U	0.45 U	0.38 U	0.41 U
Acenaphthene	(mg/kg)	50	0.047 J	0.43 U	0.45 U	0.074 J	0.054 J
Phenanthrene	(mg/kg)	50	0.44	0.14 J	0.07 J	0.1 J	0.13 J
Fluorene	(mg/kg)	50	0.081 J	0.43 U	0.45 U	0.38 U	0.41 U
Naphthalene	(mg/kg)	13	0.4 U	0.43 U	0.45 U	0.38 U	0.41 U
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	0.43 U	0.45 U	0.11 J	0.067 J
Anthracene	(mg/kg)	50	0.064 J	0.43 U	0.45 U	0.38 U	0.41 U
Pyrene	(mg/kg)	50	0.2 J	0.088 J	0.45 U	0.04 J	0.056 J
Dibenzofuran	(mg/kg)	6.2	0.4 U	0.43 U	0.45 U	0.38 U	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	0.43 U	0.45 U	0.38 U	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	0.43 U	0.45 U	0.38 U	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.4 U	0.43 U	0.45 U	0.38 U	0.41 U
Fluoranthene	(mg/kg)	50	0.14 J	0.43 U	0.45 U	0.38 U	0.04 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	0.43 U	0.45 U	0.38 U	0.41 U
Acenaphthylene	(mg/kg)	41	0.06 J	0.43 U	0.45 U	0.051 J	0.048 J
Chrysene	(mg/kg)	0.4	0.07 J	0.43 U	0.45 U	0.38 U	0.41 U
Total CAPAHs	(mg/kg)	10	0.123	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	1.155	0.228	0.07	0.375	0.395

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 37
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-61 RPSB-61 (10-12) 02/10/2000 10.00	RPSB-61 RPSB-61 (55-57) 02/10/2000 55.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00	RPSB-62 RPSB-62 (40-42) 02/11/2000 40.00	RPSB-63 RPSB-63 (15-17) 02/23/2000 15.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.51] J	0.4 U	0.057 J	0.41 U	0.39 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	1.6 U	0.4 U	0.34 U	0.41 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	[1.2] J	0.4 U	0.13 J	0.41 U	0.39 U
Acenaphthene	(mg/kg)	50	0.94 J	0.4 U	0.34 U	0.41 U	0.39 U
Phenanthrene	(mg/kg)	50	10	0.066 J	0.36	0.41 U	0.39 U
Fluorene	(mg/kg)	50	3.6	0.4 U	0.34 U	0.41 U	0.39 U
Naphthalene	(mg/kg)	13	[46] D	0.4 U	0.34 U	0.41 U	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	14	0.4 U	0.34 U	0.41 U	0.39 U
Anthracene	(mg/kg)	50	1.3 J	0.4 U	0.068 J	0.41 U	0.39 U
Pyrene	(mg/kg)	50	4	0.4 U	0.29 J	0.41 U	0.39 U
Dibenzofuran	(mg/kg)	6.2	0.77 J	0.4 U	0.34 U	0.41 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.31 J	0.4 U	0.075 J	0.41 U	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.31 J	0.4 U	0.052 J	0.41 U	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.77 J	0.4 U	0.12 J	0.41 U	0.39 U
Fluoranthene	(mg/kg)	50	3.1	0.4 U	0.19 J	0.41 U	0.39 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.36 J	0.4 U	0.039 J	0.41 U	0.39 U
Acenaphthylene	(mg/kg)	41	1 J	0.4 U	0.054 J	0.41 U	0.39 U
Chrysene	(mg/kg)	0.4	[1.3] J	0.4 U	0.16 J	0.41 U	0.39 U
Total CAPAHs	(mg/kg)	10	4.45	0.00	0.558	0.00	0.00
Total PAHs	(mg/kg)	500	89.47	0.066	1.595	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 37
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-63 RPSB-63 (45-47) 02/23/2000 45.00
Benzo(a)pyrene	(mg/kg)	0.061	0.38 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.38 U
Benzo(a)anthracene	(mg/kg)	0.224	0.38 U
Acenaphthene	(mg/kg)	50	0.38 U
Phenanthrene	(mg/kg)	50	0.38 U
Fluorene	(mg/kg)	50	0.38 U
Naphthalene	(mg/kg)	13	0.38 U
2-Methylnaphthalene	(mg/kg)	36.4	0.38 U
Anthracene	(mg/kg)	50	0.38 U
Pyrene	(mg/kg)	50	0.38 U
Dibenzofuran	(mg/kg)	6.2	0.38 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.38 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.38 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.38 U
Fluoranthene	(mg/kg)	50	0.38 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.38 U
Acenaphthylene	(mg/kg)	41	0.38 U
Chrysene	(mg/kg)	0.4	0.38 U
Total CAPAHs	(mg/kg)	10	0.00
Total PAHs	(mg/kg)	500	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 38
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-01 RPSB-01 (38-40) 02/07/2000 38.00	RPSB-02 RPSB-02 (20-22) 02/09/2000 20.00	RPSB-02 RPSB-02 (40-42) 02/09/2000 40.00	RPSB-02A RPSB-02A(30-32) 02/18/2000 30.00
Lead	(mg/kg)	500	0.37 B	0.31 U	0.37 B	0.58 B	90.5
Mercury	(mg/kg)	0.10	0.013 U	0.018 U	0.018 U	0.019 U	[0.26]
Silver	(mg/kg)		0.23 U	0.31 U	0.2 U	0.17 U	2.2 B
Arsenic	(mg/kg)	7.5	0.5 B	1.4 B	0.4 B	0.79 B	[12.9]
Barium	(mg/kg)	300	2.5 B	2.1 B	0.72 B	1.8 B	9.7 B
Cadmium	(mg/kg)	10	0.15 U	0.21 U	0.04 U	0.078 B	1
Chromium	(mg/kg)	50	0.37 B	1.9 B	0.92 B	1.9	5.1
Selenium	(mg/kg)	2	0.3 U	0.42 U	0.4 U	0.33 U	[3.4]
Cyanide	(mg/kg)		0.085 B	0.057 B	0.1 U	0.12 B	4.6

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 38
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-02A RPSB-02A(55-57) 02/18/2000 55.00	RPSB-03 RPSB-03 (5-7) 02/10/2000 5.00	RPSB-03 RPSB-03 (30-32) 02/10/2000 30.00	RPSB-04 RPSB-04 (25-27) 02/14/2000 25.00	RPSB-04 RPSB-04 (45-47) 02/15/2000 45.00
Lead	(mg/kg)	500	0.85 B	162	40.2	1.2	0.68 B
Mercury	(mg/kg)	0.10	0.017 U	0.068	[0.44]	0.02 U	0.019 U
Silver	(mg/kg)		0.22 U	1.3 B	0.6 B	0.17 U	0.2 U
Arsenic	(mg/kg)	7.5	0.47 B	2.7	2.2	0.65 B	0.59 B
Barium	(mg/kg)	300	2.1 B	72.4	11.3 B	2.7 B	2.2 B
Cadmium	(mg/kg)	10	0.053 B	0.99	1.2	0.034 U	0.039 U
Chromium	(mg/kg)	50	2.7	11.2	8.5	2.5	2.9
Selenium	(mg/kg)	2	0.45 U	0.39 U	[7.1]	0.34 U	0.59 B
Cyanide	(mg/kg)		0.11 U	2.6	0.21 B	0.11 U	0.095 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 38
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-05 RPSB-05 (4-6) 02/16/2000 4.00	RPSB-05 RPSB-05 (24-26) 02/16/2000 24.00	RPSB-05 RPSB-05 (65-67) 02/17/2000 65.00	RPSB-55 RPSB-55 (10-12) 03/06/2000 10.00	RPSB-55 RPSB-55 (40-42) 03/06/2000 40.00
Lead	(mg/kg)	500	24.3	2.6	1.8	1.3	0.85 B
Mercury	(mg/kg)	0.10	0.017 U	0.019 U	0.019 U	0.018 U	0.019 U
Silver	(mg/kg)		0.28 B	0.16 U	0.23 U	0.22 U	0.22 U
Arsenic	(mg/kg)	7.5	1 B	0.61 B	0.53 B	1.1 B	1 B
Barium	(mg/kg)	300	3 B	2.7 B	8.5 B	4.9 B	1.8 B
Cadmium	(mg/kg)	10	0.16 B	0.033 U	0.045 U	0.044 U	0.044 U
Chromium	(mg/kg)	50	1.7	3.2	5.2	2.4	1.8 B
Selenium	(mg/kg)	2	0.24 U	0.4 B	0.62 B	0.66 B	0.44 U
Cyanide	(mg/kg)		0.092 B	0.1 U	0.12 U	0.3 B	0.2 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 38
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-56 RPSB-56 (5-7) 03/06/2000 5.00	RPSB-56 RPSB-56 (40-42) 03/06/2000 40.00	RPSB-57 RPSB-57 (15-17) 02/24/2000 15.00	RPSB-57 RPSB-57 (40-42) 02/24/2000 40.00	RPSB-58 RPSB-58 (4-6) 01/26/2000 4.00
Lead	(mg/kg)	500	13.5	0.9 B	2	1	21
Mercury	(mg/kg)	0.10	0.017 U	0.021 U	0.019 U	0.02 U	0.20 U
Silver	(mg/kg)		0.21 U	0.22 U	0.24 U	0.23 U	0.27 U
Arsenic	(mg/kg)	7.5	0.94 B	1.1 B	0.65 B	0.88 B	0.41 B
Barium	(mg/kg)	300	2 B	1.7 B	2.8 B	2 B	7.4 B
Cadmium	(mg/kg)	10	0.041 U	0.044 U	0.13 B	0.097 B	0.18 U
Chromium	(mg/kg)	50	1.5 B	2.4	2.2 B	2.1 B	2.7
Selenium	(mg/kg)	2	0.41 U	0.44 U	0.49 U	0.47 U	0.36 U
Cyanide	(mg/kg)		0.32 B	0.27 B	0.18 B	0.093 U	0.27 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 38
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-58 RPSB-58 (40-42) 01/31/2000 40.00	RPSB-59 RPSB-59 (5-7) 02/15/2000 5.00	RPSB-59 RPSB-59 (40-42) 02/15/2000 40.00	RPSB-60 RPSB-60 (15-17) 02/07/2000 15.00	RPSB-60 RPSB-60 (40-42) 02/07/2000 40.00
Lead	(mg/kg)	500	0.56 B	1.4	0.55 B	0.38 B	0.6 B
Mercury	(mg/kg)	0.10	0.019 U	0.019 U	0.02 U	0.015 U	0.021 U
Silver	(mg/kg)		0.33 U	0.57 B	0.33 B	0.32 U	0.35 U
Arsenic	(mg/kg)	7.5	0.54 B	0.36 B	1.3 B	0.55 B	0.72 B
Barium	(mg/kg)	300	1.7 B	2.9 B	2.3 B	0.95 B	1.6 B
Cadmium	(mg/kg)	10	0.22 U	0.032 U	0.043 U	0.22 U	0.23 U
Chromium	(mg/kg)	50	2.7	2	1.8 B	1.2 B	2.5
Selenium	(mg/kg)	2	0.44 U	0.32 U	0.64 B	0.43 U	0.46 U
Cyanide	(mg/kg)		0.13 B	0.095 U	0.22 B	0.073 B	0.056 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 38
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-61 RPSB-61 (10-12) 02/10/2000 10.00	RPSB-61 RPSB-61 (55-57) 02/10/2000 55.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00	RPSB-62 RPSB-62 (40-42) 02/11/2000 40.00	RPSB-63 RPSB-63 (15-17) 02/23/2000 15.00
Lead	(mg/kg)	500	6.1	0.41 B	15	0.69 B	0.89 B
Mercury	(mg/kg)	0.10	0.019 U	0.02 U	0.016 B	0.018 U	0.02 U
Silver	(mg/kg)		0.22 U	0.25 B	0.18 U	0.19 U	0.2 U
Arsenic	(mg/kg)	7.5	0.43 U	0.5 B	0.35 U	0.39 U	0.39 U
Barium	(mg/kg)	300	1.9 B	1 B	2.2 B	1.7 B	1.7 B
Cadmium	(mg/kg)	10	0.043 U	0.043 B	0.035 U	0.039 U	0.072 B
Chromium	(mg/kg)	50	2.6	1.4 B	1.4 B	1.8 B	1.1 B
Selenium	(mg/kg)	2	0.95 B	0.68 B	0.61 B	0.39 U	0.39 U
Cyanide	(mg/kg)		0.29 B	0.069 U	0.94	0.13 U	0.12 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 38
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-63 RPSB-63 (45-47) 02/23/2000 45.00
Lead	(mg/kg)	500	0.96
Mercury	(mg/kg)	0.10	0.019 U
Silver	(mg/kg)		0.23 U
Arsenic	(mg/kg)	7.5	0.47 U
Barium	(mg/kg)	300	2 B
Cadmium	(mg/kg)	10	0.1 B
Chromium	(mg/kg)	50	2.3 B
Selenium	(mg/kg)	2	0.47 U
Cyanide	(mg/kg)		0.096 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 39
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-01 RPSB-01 (38-40) 02/07/2000 38.00	RPSB-02 RPSB-02 (20-22) 02/09/2000 20.00	RPSB-02 RPSB-02 (40-42) 02/09/2000 40.00	RPSB-02A RPSB-02A(30-32) 02/18/2000 30.00	RPSB-02A RPSB-02A(55-57) 02/18/2000 55.00
Total Phenols	(mg/kg)	12U	12U	13U	13U	17U	17U

mg/kg: milligram/kilogram

---=Not analyzed

Data qualifiers defined in Glossary

TABLE 39
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-03 RPSB-03 (5-7) 02/10/2000 5.00	RPSB-03 RPSB-03 (30-32) 02/10/2000 30.00	RPSB-04 RPSB-04 (25-27) 02/14/2000 25.00	RPSB-04 RPSB-04 (45-47) 02/15/2000 45.00	RPSB-05 RPSB-05 (4-6) 02/16/2000 4.00	RPSB-05 RPSB-05 (24-26) 02/16/2000 24.00
Total Phenols	(mg/kg)	13U	13U	12U	12U	11U	12U

mg/kg: milligram/kilogram

---=Not analyzed

Data qualifiers defined in Glossary

TABLE 39
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	RPSB-05	RPSB-55	RPSB-55	RPSB-56	RPSB-56	RPSB-57
	SAMPLE ID	RPSB-05 (65-67)	RPSB-55 (10-12)	RPSB-55 (40-42)	RPSB-56 (5-7)	RPSB-56 (40-42)	RPSB-57 (15-17)
	DATE	02/17/2000	03/06/2000	03/06/2000	03/06/2000	03/06/2000	02/24/2000
	DEPTH (ft)	65.00	10.00	40.00	5.00	40.00	15.00
Total Phenols	(mg/kg)	12U	12U	12U	12U	12U	12U

mg/kg: milligram/kilogram

---=Not analyzed

Data qualifiers defined in Glossary

TABLE 39
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	RPSB-57	RPSB-58	RPSB-58	RPSB-59	RPSB-59	RPSB-60
	SAMPLE ID	RPSB-57 (40-42)	RPSB-58 (4-6)	RPSB-58 (40-42)	RPSB-59 (5-7)	RPSB-59 (40-42)	RPSB-60 (15-17)
	DATE	02/24/2000	01/26/2000	01/31/2000	02/15/2000	02/15/2000	02/07/2000
	DEPTH (ft)	40.00	4.00	40.00	5.00	40.00	15.00
Total Phenols	(mg/kg)	12U	13U	12U	12U	12U	12U

mg/kg: milligram/kilogram

---=Not analyzed

Data qualifiers defined in Glossary

TABLE 39
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-60 RPSB-60 (40-42) 02/07/2000 40.00	RPSB-61 RPSB-61 (10-12) 02/10/2000 10.00	RPSB-61 RPSB-61 (55-57) 02/10/2000 55.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00	RPSB-62 RPSB-62 (40-42) 02/11/2000 40.00	RPSB-63 RPSB-63 (15-17) 02/23/2000 15.00
Total Phenols	(mg/kg)	12U	12U	12U	12U	12U	12U

mg/kg: milligram/kilogram

---=Not analyzed

Data qualifiers defined in Glossary

TABLE 39
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	RPSB-63
	SAMPLE ID	RPSB-63 (45-47)
	DATE	02/23/2000
	DEPTH (ft)	45.00
Total Phenols	(mg/kg)	12U

mg/kg: milligram/kilogram

---=Not analyzed

Data qualifiers defined in Glossary

TABLE 40
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-56 RPSB-56 (5-7) 03/06/2000 5.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00
Chloromethane	(mg/kg)		0.005 U	0.013 U	0.005 U
Bromomethane	(mg/kg)		0.005 U	0.013 U	0.005 U
Vinyl chloride	(mg/kg)	0.2	0.005 U	0.013 U	0.005 U
Chloroethane	(mg/kg)	1.9	0.005 U	0.013 U	0.005 U
Methylene chloride	(mg/kg)	0.1	0.005 U	0.015	0.003 J
Acetone	(mg/kg)	0.2	0.004 JB	0.016 B	0.004 JB
Carbon disulfide	(mg/kg)	2.7	0.005 U	0.013 U	0.005 U
1,1-Dichloroethene	(mg/kg)	0.4	0.005 U	0.013 U	0.005 U
1,1-Dichloroethane	(mg/kg)	0.2	0.005 U	0.013 U	0.005 U
Chloroform	(mg/kg)	0.3	0.005 U	0.013 U	0.005 U
1,2-Dichloroethane	(mg/kg)	0.1	0.005 U	0.013 U	0.005 U
2-Butanone	(mg/kg)	0.3	0.005 U	0.013 U	0.005 U
1,1,1-Trichloroethane	(mg/kg)	0.8	0.005 U	0.013 U	0.005 U
Carbon tetrachloride	(mg/kg)	0.6	0.005 U	0.013 U	0.005 U
Vinyl Acetate	(mg/kg)		0.005 U	0.013 U	0.005 U
Bromodichloromethane	(mg/kg)		0.005 U	0.013 U	0.005 U
1,2-Dichloropropane	(mg/kg)		0.005 U	0.013 U	0.005 U
cis-1,3-Dichloropropene	(mg/kg)		0.005 U	0.013 U	0.005 U
Trichloroethene	(mg/kg)	0.7	0.005 U	0.013 U	0.005 U
Dibromochloromethane	(mg/kg)		0.005 U	0.013 U	0.005 U
1,1,2-Trichloroethane	(mg/kg)		0.005 U	0.013 U	0.005 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 40
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-56 RPSB-56 (5-7) 03/06/2000 5.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00
trans-1,3-Dichloropropene	(mg/kg)		0.005 U	0.013 U	0.005 U
Bromoform	(mg/kg)		0.005 U	0.013 U	0.005 U
4-Methyl-2-pentanone	(mg/kg)	1	0.005 U	0.013 U	0.005 U
2-Hexanone	(mg/kg)		0.005 U	0.013 U	0.005 U
Tetrachloroethene	(mg/kg)	1.4	0.005 U	0.013 U	0.005 U
1,1,2,2-Tetrachloroethane	(mg/kg)	0.6	0.005 U	0.013 U	0.005 U
Chlorobenzene	(mg/kg)	1.7	0.005 U	0.013 U	0.005 U
Styrene	(mg/kg)		0.005 U	0.013 U	0.005 U
1,1,1,2-Tetrachloroethane	(mg/kg)		0.005 U	0.013 U	0.005 U
1,1-Dichloropropene	(mg/kg)		0.005 U	0.013 U	0.005 U
1,2,3-Trichlorobenzene	(mg/kg)		0.005 U	0.013 U	0.005 U
1,2,3-Trichloropropane	(mg/kg)	0.4	0.005 U	0.013 U	0.005 U
1,3-Dichloropropane	(mg/kg)	0.3	0.005 U	0.013 U	0.005 U
2,2-Dichloropropane	(mg/kg)		0.005 U	0.013 U	0.005 U
Benzene, 1,2,4-trimethyl	(mg/kg)		0.005 U	0.013 U	0.005 U
Benzene, 1,3,5-trimethyl-	(mg/kg)		0.005 U	0.013 U	0.005 U
Benzene, 1-methylethyl-	(mg/kg)		0.005 U	0.013 U	0.005 U
Bromobenzene	(mg/kg)		0.005 U	0.013 U	0.005 U
cis-1,2-Dichloroethylene	(mg/kg)		0.005 U	0.013 U	0.005 U
1,2-Dibromo-3-chloropropane	(mg/kg)		0.005 U	0.013 U	0.005 U
Dichlorodifluoromethane	(mg/kg)		0.005 U	0.013 U	0.005 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 40
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-56 RPSB-56 (5-7) 03/06/2000 5.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00
1,2-Dibromoethane	(mg/kg)		0.005 U	0.013 U	0.005 U
trans-1,2-Dichloroethylene	(mg/kg)		0.005 U	0.013 U	0.005 U
Methyl iodide	(mg/kg)		0.005 U	0.013 U	0.005 U
Methylene bromide	(mg/kg)		0.005 U	0.013 U	0.005 U
Methyltert-butylether	(mg/kg)		0.005 U	0.013 U	0.005 U
n-Butylbenzene	(mg/kg)		0.005 U	0.013 U	0.005 U
n-Propylbenzene	(mg/kg)		0.005 U	0.013 U	0.005 U
o-Chlorotoluene	(mg/kg)		0.005 U	0.013 U	0.005 U
p-Chlorotoluene	(mg/kg)		0.005 U	0.013 U	0.005 U
sec-Butylbenzene	(mg/kg)		0.005 U	0.013 U	0.005 U
tert-Butylbenzene	(mg/kg)		0.005 U	0.013 U	0.005 U
Trichlorofluoromethane	(mg/kg)	6	0.005 U	0.013 U	0.005 U

mg/kg: milligram/kilogram
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 41
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-56 RPSB-56 (5-7) 03/06/2000 5.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00
Phenol	(mg/kg)	0.03	0.34 U	6.8 U	0.34 U
Bis(2-chloroethyl)ether	(mg/kg)		0.34 U	6.8 U	0.34 U
2-Chlorophenol	(mg/kg)	0.8	0.34 U	6.8 U	0.34 U
1,3-Dichlorobenzene	(mg/kg)	1.6	0.34 U	6.8 U	0.34 U
1,4-Dichlorobenzene	(mg/kg)	8.5	0.34 U	6.8 U	0.34 U
1,2-Dichlorobenzene	(mg/kg)	7.9	0.34 U	6.8 U	0.34 U
2-Methylphenol	(mg/kg)	0.1	0.34 U	6.8 U	0.34 U
4-Methylphenol	(mg/kg)	0.9	0.34 U	6.8 U	0.34 U
N-Nitroso-di-n-propylamine	(mg/kg)		0.34 U	6.8 U	0.34 U
Hexachloroethane	(mg/kg)		0.34 U	6.8 U	0.34 U
Nitrobenzene	(mg/kg)	0.2	0.34 U	6.8 U	0.34 U
Isophorone	(mg/kg)	4.4	0.34 U	6.8 U	0.34 U
2-Nitrophenol	(mg/kg)	0.33	0.34 U	6.8 U	0.34 U
2,4-Dimethylphenol	(mg/kg)		0.34 U	6.8 U	0.34 U
Bis(2-chloroethoxy)methane	(mg/kg)		0.34 U	6.8 U	0.34 U
2,4-Dichlorophenol	(mg/kg)	0.4	0.34 U	6.8 U	0.34 U
1,2,4-Trichlorobenzene	(mg/kg)	3.4	0.34 U	6.8 U	0.34 U
4-Chloroaniline	(mg/kg)	0.22	0.34 U	6.8 U	0.34 U
Hexachlorobutadiene	(mg/kg)		0.34 U	6.8 U	0.34 U
4-Chloro-3-methylphenol	(mg/kg)	0.24	0.34 U	6.8 U	0.34 U
Hexachlorocyclopentadiene	(mg/kg)		0.34 U	6.8 U	0.34 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 41
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-56 RPSB-56 (5-7) 03/06/2000 5.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00
2,4,6-Trichlorophenol	(mg/kg)		0.34 U	6.8 U	0.34 U
2,4,5-Trichlorophenol	(mg/kg)	0.1	0.69 U	14 U	0.7 U
2-Chloronaphthalene	(mg/kg)		0.34 U	6.8 U	0.34 U
2-Nitroaniline	(mg/kg)	0.43	0.69 U	14 U	0.7 U
Dimethyl phthalate	(mg/kg)	2	0.34 U	6.8 U	0.34 U
2,6-Dinitrotoluene	(mg/kg)	1	0.34 U	6.8 U	0.34 U
3-Nitroaniline	(mg/kg)	0.5	0.69 U	14 U	0.7 U
2,4-Dinitrophenol	(mg/kg)	0.2	0.69 U	14 U	0.7 U
4-Nitrophenol	(mg/kg)	0.1	0.69 U	14 U	0.7 U
2,4-Dinitrotoluene	(mg/kg)		0.34 U	6.8 U	0.34 U
Diethylphthalate	(mg/kg)	7.1	0.34 U	6.8 U	0.34 U
4-Chlorophenyl phenylether	(mg/kg)		0.34 U	6.8 U	0.34 U
4-Nitroaniline	(mg/kg)		0.69 U	14 U	0.7 U
4,6-Dinitro,2-methylphenol	(mg/kg)		0.69 U	14 U	0.7 U
N-Nitrosodiphenylamine (1)	(mg/kg)		0.34 U	6.8 U	0.34 U
Hexachlorobenzene	(mg/kg)	0.41	0.34 U	6.8 U	0.34 U
Pentachlorophenol	(mg/kg)	1	0.69 U	14 U	0.7 U
Di-n-butylphthalate	(mg/kg)	8.1	0.34 U	6.8 U	0.34 U
Butylbenzylphthalate	(mg/kg)	50	0.34 U	6.8 U	0.34 U
3,3'-Dichlorobenzidine	(mg/kg)		0.34 U	6.8 U	0.34 U
Bis(2-ethylhexyl)phthalate	(mg/kg)	50	0.34 U	6.8 U	0.34 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 41
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-56 RPSB-56 (5-7) 03/06/2000 5.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00
Di-n-octyl phthalate	(mg/kg)	50	0.34 U	6.8 U	0.34 U
Carbazole	(mg/kg)		0.34 U	9	0.34 U

mg/kg: milligram/kilogram
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 42
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS *

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-56 RPSB-56 (5-7) 03/06/2000 5.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00
Aluminum	(mg/kg)		313	428	212
Antimony	(mg/kg)		0.15 U	0.31 U	0.26 U
Beryllium	(mg/kg)	0.16	0.15 U	0.21 U	0.18 U
Calcium	(mg/kg)		36000	96.2	81.1
Cobalt	(mg/kg)	30	0.35 B	1.2 B	0.46 B
Copper	(mg/kg)	25	1.1 B	3.3	2.7
Iron	(mg/kg)	2000	666	1520	816
Magnesium	(mg/kg)		231	88	75.3
Manganese	(mg/kg)		22.8	36	21
Nickel	(mg/kg)	13	0.6 B	1.3 B	0.6 B
Potassium	(mg/kg)		103 B	76.4 B	78.7 B
Sodium	(mg/kg)		483	82.6 B	44.4 B
Thallium	(mg/kg)		0.23 U	0.31 U	0.26 U
Vanadium	(mg/kg)	150	1.3 B	1.6 B	1.4 B
Zinc	(mg/kg)	20	3.2 B	[26]	10.2

mg/kg: milligram/kilogram
*RCRA metals and cyanide not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 43
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS (PCBs)

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00
alpha-BHC	(mg/kg)	0.11	0.0018 U	0.0018 U
beta-BHC	(mg/kg)	0.2	0.0018 U	0.007
delta-BHC	(mg/kg)	0.3	0.0018 U	0.0071 P
gamma-BHC (Lindane)	(mg/kg)	0.06	0.0018 U	0.0018 U
Heptachlor	(mg/kg)	0.1	0.0018 U	0.0018 U
Aldrin	(mg/kg)	0.041	0.0018 U	0.0018 U
Heptachlor epoxide	(mg/kg)	0.02	0.0018 U	0.0018 U
Endosulfan I	(mg/kg)	0.9	0.0018 U	0.0018 U
Dieldrin	(mg/kg)	0.044	0.0034 U	0.0034 U
4,4-DDE	(mg/kg)	2.1	0.0034 U	0.0034 U
Endrin	(mg/kg)	0.1	0.0034 U	0.0034 U
Endosulfan II	(mg/kg)	0.9	0.0034 U	0.0034 U
4,4-DDD	(mg/kg)	2.9	0.0034 U	0.0034 U
Endosulfan sulfate	(mg/kg)	1	0.0034 U	0.0034 U
4,4-DDT	(mg/kg)	2.1	0.0034 U	0.0034 U
Methoxychlor	(mg/kg)		0.018 U	0.018 U
Endrin ketone	(mg/kg)		0.0034 U	0.0034 U
Endrin aldehyde	(mg/kg)		0.0034 U	0.0034 U
alpha-Chlordane	(mg/kg)	0.54	0.0018 U	0.0018 U
gamma-Chlordane	(mg/kg)	0.54	0.0018 U	0.0018 U
Toxaphene	(mg/kg)		0.18 U	0.18 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 43
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS (PCBs)

PERIOD: From 01/26/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-01 RPSB-01 (5-7) 02/07/2000 5.00	RPSB-62 RPSB-62 (5-7) 02/11/2000 5.00
Aroclor-1016	(mg/kg)	10	0.035 U	0.034 U
Aroclor-1221	(mg/kg)	10	0.035 U	0.034 U
Aroclor-1232	(mg/kg)	10	0.035 U	0.034 U
Aroclor-1242	(mg/kg)	10	0.035 U	0.034 U
Aroclor-1248	(mg/kg)	10	0.035 U	0.034 U
Aroclor-1254	(mg/kg)	10	0.035 U	0.034 U
Aroclor-1260	(mg/kg)	10	0.035 U	0.034 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 44
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-70 RPSB-70 (4-6) 03/03/2000 4.00	RPSB-70 RPSB-70 (6-8) 03/03/2000 6.00	RPSB-70 RPSB-70 (8-10) 03/03/2000 8.00	RPSB-71 RPSB-71 (4-6) 03/03/2000 4.00	RPSB-71 RPSB-71 (6-8) 03/03/2000 6.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.002	0.001 U	0.001 U	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001	0.001 U	0.001	0.001 U
Xylene (total)	(mg/kg)	1.2	0.002	0.001	0.001 U	0.003	0.001 U
Total BTEX	(mg/kg)		0.004	0.002	0.00	0.004	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 44
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-71 RPSB-71 (8-10) 03/03/2000 8.00	RPSB-72 RPSB-72(4-6) 03/02/2000 4.00	RPSB-72 RPSB-72 (6-8) 03/02/2000 6.00	RPSB-72 RPSB-72 (8-10) 03/02/2000 8.00	RPSB-73 RPSB-73 (4-6) 02/25/2000 4.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.002	0.001 U	0.001 U	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.002	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 44
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-73 RPSB-73 (8-10) 02/25/2000 8.00	RPSB-73 RPSB-73 (12-14) 02/25/2000 12.00	RPSB-74 RPSB-74 (4-6) 02/25/2000 4.00	RPSB-74 RPSB-74 (8-10) 02/25/2000 8.00	RPSB-74 RPSB-74 (10-12) 02/25/2000 10.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 44
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-75 RPSB-75 (4-6) 02/28/2000 4.00	RPSB-75 RPSB-75 (6-8) 02/28/2000 6.00	RPSB-75 RPSB-75 (8-10) 02/28/2000 8.00	RPSB-76 RPSB-76 (4-6) 02/28/2000 4.00	RPSB-76 RPSB-76 (6-8) 02/28/2000 6.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 44
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-76 RPSB-76 (8-10) 02/28/2000 8.00	RPSB-77 RPSB-77 (4-6) 02/28/2000 4.00	RPSB-77 RPSB-77 (6-8) 02/28/2000 6.00	RPSB-77 RPSB-77 (8-10) 02/28/2000 8.00	RPSB-78 RPSB-78 (4-6) 02/29/2000 4.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 44
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-78 RPSB-78 (6-8) 02/29/2000 6.00	RPSB-78 RPSB-78 (8-10) 02/29/2000 8.00	RPSB-79 RPSB-79 (8-10) 03/01/2000 8.00	RPSB-79 RPSB-79 (10-12) 03/01/2000 10.00	RPSB-80 RPSB-80 (4-6) 03/01/2000 4.00
Benzene	(mg/kg)	0.06	0.001 U	0.002	0.001 U	0.001 U	0.03
Toluene	(mg/kg)	1.5	0.001 U	0.002	0.001 U	0.003	0.013
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.077	0.013
Xylene (total)	(mg/kg)	1.2	0.001	0.002	0.001 U	0.19	0.016
Total BTEX	(mg/kg)		0.001	0.006	0.00	0.27	0.072

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 44
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-80 RPSB-80 (6-8) 03/01/2000 6.00	RPSB-80 RPSB-80 (8-10) 03/01/2000 8.00	RPSB-81 RPSB-81 (4-6) 03/01/2000 4.00	RPSB-81 RPSB-81 (6-8) 03/01/2000 6.00	RPSB-81 RPSB-81 (8-10) 03/01/2000 8.00
Benzene	(mg/kg)	0.06	[0.14]	1.3 U	[0.24]	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.14	[3.2]	0.059	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.4	[33]	0.005 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.5	[100]	0.008	0.001 U	0.001 U
Total BTEX	(mg/kg)		1.18	136.20	0.307	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 44
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-82 RPSB-82 (4-6) 03/02/2000 4.00	RPSB-82 RPSB-82 (6-8) 03/02/2000 6.00	RPSB-82 RPSB-82 (8-10) 03/02/2000 8.00
Benzene	(mg/kg)	0.06	0.05	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.08	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.01 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.029	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.159	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 45
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-70 RPSB-70 (4-6) 03/03/2000 4.00	RPSB-70 RPSB-70 (6-8) 03/03/2000 6.00	RPSB-70 RPSB-70 (8-10) 03/03/2000 8.00	RPSB-71 RPSB-71 (4-6) 03/03/2000 4.00	RPSB-71 RPSB-71 (6-8) 03/03/2000 6.00
Benzo(a)pyrene	(mg/kg)	0.061	[1.5] J	3.9 U	4 U	3.4 U	0.34 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	4.5 U	3.9 U	4 U	3.4 U	0.34 U
Benzo(a)anthracene	(mg/kg)	0.224	[1.6] J	3.9 U	4 U	3.4 U	0.34 U
Acenaphthene	(mg/kg)	50	4.5 U	3.9 U	4 U	3.4 U	0.34 U
Phenanthrene	(mg/kg)	50	1.5 J	3.9 U	4 U	3.4 U	0.34 U
Fluorene	(mg/kg)	50	4.5 U	3.9 U	4 U	3.4 U	0.34 U
Naphthalene	(mg/kg)	13	4.5 U	3.9 U	4 U	3.4 U	0.34 U
2-Methylnaphthalene	(mg/kg)	36.4	4.5 U	3.9 U	4 U	3.4 U	0.34 U
Anthracene	(mg/kg)	50	4.5 U	3.9 U	4 U	3.4 U	0.34 U
Pyrene	(mg/kg)	50	2.6 J	3.9 U	4 U	0.37 J	0.34 U
Dibenzofuran	(mg/kg)	6.2	4.5 U	3.9 U	4 U	3.4 U	0.34 U
Benzo(g,h,i)perylene	(mg/kg)	50	1.3 J	3.9 U	4 U	3.4 U	0.34 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	1.2 J	3.9 U	4 U	3.4 U	0.34 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[2.5] J	3.9 U	4 U	3.4 U	0.34 U
Fluoranthene	(mg/kg)	50	2.8 J	3.9 U	4 U	3.4 U	0.34 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.71 J	3.9 U	4 U	3.4 U	0.34 U
Acenaphthylene	(mg/kg)	41	4.5 U	3.9 U	4 U	3.4 U	0.34 U
Chrysene	(mg/kg)	0.4	[1.7] J	3.9 U	4 U	3.4 U	0.34 U
Total CAPAHs	(mg/kg)	10	9.21	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	17.41	0.00	0.00	0.37	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 45
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-71 RPSB-71 (8-10) 03/03/2000 8.00	RPSB-72 RPSB-72(4-6) 03/02/2000 4.00	RPSB-72 RPSB-72 (6-8) 03/02/2000 6.00	RPSB-72 RPSB-72 (8-10) 03/02/2000 8.00	RPSB-73 RPSB-73 (4-6) 02/25/2000 4.00
Benzo(a)pyrene	(mg/kg)	0.061	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Benzo(a)anthracene	(mg/kg)	0.224	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Acenaphthene	(mg/kg)	50	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Phenanthrene	(mg/kg)	50	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Fluorene	(mg/kg)	50	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Naphthalene	(mg/kg)	13	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Anthracene	(mg/kg)	50	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Pyrene	(mg/kg)	50	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Dibenzofuran	(mg/kg)	6.2	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Fluoranthene	(mg/kg)	50	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Acenaphthylene	(mg/kg)	41	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Chrysene	(mg/kg)	0.4	0.4 U	0.35 U	0.38 U	0.4 U	0.34 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 45
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-73 RPSB-73 (8-10) 02/25/2000 8.00	RPSB-73 RPSB-73 (12-14) 02/25/2000 12.00	RPSB-74 RPSB-74 (4-6) 02/25/2000 4.00	RPSB-74 RPSB-74 (8-10) 02/25/2000 8.00	RPSB-74 RPSB-74 (10-12) 02/25/2000 10.00
Benzo(a)pyrene	(mg/kg)	0.061	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Benzo(a)anthracene	(mg/kg)	0.224	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Acenaphthene	(mg/kg)	50	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Phenanthrene	(mg/kg)	50	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Fluorene	(mg/kg)	50	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Naphthalene	(mg/kg)	13	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Anthracene	(mg/kg)	50	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Pyrene	(mg/kg)	50	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Dibenzofuran	(mg/kg)	6.2	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Fluoranthene	(mg/kg)	50	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Acenaphthylene	(mg/kg)	41	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Chrysene	(mg/kg)	0.4	0.4 U	0.4 U	0.34 U	0.41 U	0.4 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 45
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-75 RPSB-75 (4-6) 02/28/2000 4.00	RPSB-75 RPSB-75 (6-8) 02/28/2000 6.00	RPSB-75 RPSB-75 (8-10) 02/28/2000 8.00	RPSB-76 RPSB-76 (4-6) 02/28/2000 4.00	RPSB-76 RPSB-76 (6-8) 02/28/2000 6.00
Benzo(a)pyrene	(mg/kg)	0.061	0.37 U	0.46 U	0.41 U	0.35 U	[6.9]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.37 U	0.46 U	0.41 U	0.35 U	[1] J
Benzo(a)anthracene	(mg/kg)	0.224	0.37 U	0.46 U	0.41 U	0.046 J	[10]
Acenaphthene	(mg/kg)	50	0.37 U	0.46 U	0.41 U	0.35 U	1.7 U
Phenanthrene	(mg/kg)	50	0.37 U	0.46 U	0.41 U	0.039 J	8
Fluorene	(mg/kg)	50	0.37 U	0.46 U	0.41 U	0.35 U	0.65 J
Naphthalene	(mg/kg)	13	0.37 U	0.46 U	0.41 U	0.35 U	1.7 U
2-Methylnaphthalene	(mg/kg)	36.4	0.37 U	0.46 U	0.41 U	0.35 U	1.7 U
Anthracene	(mg/kg)	50	0.37 U	0.46 U	0.41 U	0.35 U	3.3
Pyrene	(mg/kg)	50	0.37 U	0.46 U	0.41 U	0.05 J	14
Dibenzofuran	(mg/kg)	6.2	0.37 U	0.46 U	0.41 U	0.35 U	1.7 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.37 U	0.46 U	0.41 U	0.35 U	2.5
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.37 U	0.46 U	0.41 U	0.35 U	[3.4]
Benzo(b)fluoranthene	(mg/kg)	1.1	0.37 U	0.46 U	0.41 U	0.35 U	[8.7]
Fluoranthene	(mg/kg)	50	0.37 U	0.46 U	0.41 U	0.044 J	17
Benzo(k)fluoranthene	(mg/kg)	1.1	0.37 U	0.46 U	0.41 U	0.35 U	[3.8]
Acenaphthylene	(mg/kg)	41	0.37 U	0.46 U	0.41 U	0.35 U	0.63 J
Chrysene	(mg/kg)	0.4	0.37 U	0.46 U	0.41 U	0.047 J	[7.9]
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	0.093	[41.70]
Total PAHs	(mg/kg)	500	0.00	0.00	0.00	0.226	87.78

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 45
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-76 RPSB-76 (8-10) 02/28/2000 8.00	RPSB-77 RPSB-77 (4-6) 02/28/2000 4.00	RPSB-77 RPSB-77 (6-8) 02/28/2000 6.00	RPSB-77 RPSB-77 (8-10) 02/28/2000 8.00	RPSB-78 RPSB-78 (4-6) 02/29/2000 4.00
Benzo(a)pyrene	(mg/kg)	0.061	0.39 U	[0.075] J	[0.48]	0.41 U	0.38 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.39 U	0.34 U	0.37 U	0.41 U	0.38 U
Benzo(a)anthracene	(mg/kg)	0.224	0.39 U	0.078 J	[0.52]	0.41 U	0.38 U
Acenaphthene	(mg/kg)	50	0.39 U	0.34 U	0.37 U	0.41 U	0.38 U
Phenanthrene	(mg/kg)	50	0.39 U	0.05 J	0.42	0.41 U	0.38 U
Fluorene	(mg/kg)	50	0.39 U	0.34 U	0.37 U	0.41 U	0.38 U
Naphthalene	(mg/kg)	13	0.39 U	0.34 U	0.37 U	0.41 U	0.38 U
2-Methylnaphthalene	(mg/kg)	36.4	0.39 U	0.34 U	0.37 U	0.41 U	0.38 U
Anthracene	(mg/kg)	50	0.39 U	0.34 U	0.089 J	0.41 U	0.38 U
Pyrene	(mg/kg)	50	0.39 U	0.13 J	1.2	0.41 U	0.38 U
Dibenzofuran	(mg/kg)	6.2	0.39 U	0.34 U	0.37 U	0.41 U	0.38 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.39 U	0.34 U	0.34 J	0.41 U	0.38 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.39 U	0.047 J	0.38	0.41 U	0.38 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.39 U	0.15 J	0.96	0.41 U	0.38 U
Fluoranthene	(mg/kg)	50	0.39 U	0.09 J	0.96	0.41 U	0.38 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.39 U	0.087 J	0.36 J	0.41 U	0.38 U
Acenaphthylene	(mg/kg)	41	0.39 U	0.34 U	0.081 J	0.41 U	0.38 U
Chrysene	(mg/kg)	0.4	0.39 U	0.12 J	[0.83]	0.41 U	0.38 U
Total CAPAHs	(mg/kg)	10	0.00	0.557	3.53	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.827	6.62	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 45
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-78 RPSB-78 (6-8) 02/29/2000 6.00	RPSB-78 RPSB-78 (8-10) 02/29/2000 8.00	RPSB-79 RPSB-79 (8-10) 03/01/2000 8.00	RPSB-79 RPSB-79 (10-12) 03/01/2000 10.00	RPSB-80 RPSB-80 (4-6) 03/01/2000 4.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.29] J	1.7 U	3.4 U	[14]	1.8 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[0.15] J	1.7 U	3.4 U	[2.2] J	1.8 U
Benzo(a)anthracene	(mg/kg)	0.224	[0.42]	1.7 U	3.4 U	3.4 U	1.8 U
Acenaphthene	(mg/kg)	50	0.34 U	1.7 U	3.4 U	3.4 U	1.8 U
Phenanthrene	(mg/kg)	50	0.52	1.7 U	3.4 U	3.4 U	1.8 U
Fluorene	(mg/kg)	50	0.34 U	1.7 U	3.4 U	3.4 U	1.8 U
Naphthalene	(mg/kg)	13	0.13 J	1.7 U	3.4 U	3.4 U	1.8 U
2-Methylnaphthalene	(mg/kg)	36.4	0.087 J	1.7 U	3.4 U	3.4 U	1.8 U
Anthracene	(mg/kg)	50	0.14 J	1.7 U	3.4 U	1.3 J	1.8 U
Pyrene	(mg/kg)	50	1.3	1.7 U	3.4 U	3.4 U	1.8 U
Dibenzofuran	(mg/kg)	6.2	0.035 J	1.7 U	3.4 U	3.4 U	1.8 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.45	1.7 U	3.4 U	13	1.8 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.55	1.7 U	3.4 U	[12]	1.8 U
Benzo(b)fluoranthene	(mg/kg)	1.1	1	1.7 U	3.4 U	[5.7]	1.8 U
Fluoranthene	(mg/kg)	50	0.57	1.7 U	3.4 U	3.4 U	1.8 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.27 J	1.7 U	3.4 U	0.83 J	1.8 U
Acenaphthylene	(mg/kg)	41	0.42	1.7 U	3.4 U	6	1.8 U
Chrysene	(mg/kg)	0.4	[0.82]	1.7 U	3.4 U	[1.1] J	1.8 U
Total CAPAHs	(mg/kg)	10	3.50	0.00	0.00	[35.83]	0.00
Total PAHs	(mg/kg)	500	7.152	0.00	0.00	56.13	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 45
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-80 RPSB-80 (6-8) 03/01/2000 6.00	RPSB-80 RPSB-80 (8-10) 03/01/2000 8.00	RPSB-81 RPSB-81 (4-6) 03/01/2000 4.00	RPSB-81 RPSB-81 (6-8) 03/01/2000 6.00	RPSB-81 RPSB-81 (8-10) 03/01/2000 8.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.47] J	[0.65] J	[0.97] J	0.34 U	0.39 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	1.8 U	1.7 U	3.5 U	0.34 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	[0.53] J	[0.68] J	[1.1] J	0.34 U	0.39 U
Acenaphthene	(mg/kg)	50	1.8 U	1.7 U	3.5 U	0.34 U	0.39 U
Phenanthrene	(mg/kg)	50	0.8 J	0.42 J	1.4 J	0.34 U	0.39 U
Fluorene	(mg/kg)	50	1.8 U	0.2 J	3.5 U	0.34 U	0.39 U
Naphthalene	(mg/kg)	13	12	9	0.48 J	0.079 J	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	0.62 J	1.6 J	3.5 U	0.34 U	0.39 U
Anthracene	(mg/kg)	50	1.8 U	1.7 U	0.44 J	0.34 U	0.39 U
Pyrene	(mg/kg)	50	1.3 J	2.8	2.8 J	0.34 U	0.39 U
Dibenzofuran	(mg/kg)	6.2	1.8 U	1.7 U	3.5 U	0.34 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.46 J	0.34 J	3.5 U	0.34 U	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.42 J	1.7 U	3.5 U	0.34 U	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[1.1] J	0.8 J	[1.6] J	0.34 U	0.39 U
Fluoranthene	(mg/kg)	50	1 J	0.58 J	1.3 J	0.34 U	0.39 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.33 J	0.3 J	0.43 J	0.34 U	0.39 U
Acenaphthylene	(mg/kg)	41	0.39 J	0.42 J	0.68 J	0.34 U	0.39 U
Chrysene	(mg/kg)	0.4	[0.72] J	[0.7] J	[1.3] J	0.34 U	0.39 U
Total CAPAHs	(mg/kg)	10	3.57	3.13	5.40	0.00	0.00
Total PAHs	(mg/kg)	500	20.14	18.49	12.50	0.079	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 45
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-82 RPSB-82 (4-6) 03/02/2000 4.00	RPSB-82 RPSB-82 (6-8) 03/02/2000 6.00	RPSB-82 RPSB-82 (8-10) 03/02/2000 8.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.094] J	0.39 U	0.39 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.34 U	0.39 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	0.12 J	0.39 U	0.39 U
Acenaphthene	(mg/kg)	50	0.34 U	0.39 U	0.39 U
Phenanthrene	(mg/kg)	50	0.078 J	0.39 U	0.39 U
Fluorene	(mg/kg)	50	0.34 U	0.39 U	0.39 U
Naphthalene	(mg/kg)	13	0.56	0.39 U	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	0.34 U	0.39 U	0.39 U
Anthracene	(mg/kg)	50	0.34 U	0.39 U	0.39 U
Pyrene	(mg/kg)	50	0.16 J	0.39 U	0.39 U
Dibenzofuran	(mg/kg)	6.2	0.34 U	0.39 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.058 J	0.39 U	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.063 J	0.39 U	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.13 J	0.39 U	0.39 U
Fluoranthene	(mg/kg)	50	0.22 J	0.39 U	0.39 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.067 J	0.39 U	0.39 U
Acenaphthylene	(mg/kg)	41	0.34 U	0.39 U	0.39 U
Chrysene	(mg/kg)	0.4	0.15 J	0.39 U	0.39 U
Total CAPAHs	(mg/kg)	10	0.624	0.00	0.00
Total PAHs	(mg/kg)	500	1.70	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 46
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE AND PHENOLS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-70 RPSB-70 (4-6) 03/03/2000 4.00	RPSB-70 RPSB-70 (6-8) 03/03/2000 6.00	RPSB-70 RPSB-70 (8-10) 03/03/2000 8.00	RPSB-71 RPSB-71 (4-6) 03/03/2000 4.00	RPSB-71 RPSB-71 (6-8) 03/03/2000 6.00	RPSB-71 RPSB-71 (8-10) 03/03/2000 8.00
Cyanide, total	(mg/kg)	9.3	0.21 U	0.28 B	1.8	0.56 B	1.2
Total Phenols	(mg/kg)	12 U	12 U	12 U	12 U	12 U	12 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 46
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE AND PHENOLS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-72 RPSB-72(4-6) 03/02/2000 4.00	RPSB-72 RPSB-72 (6-8) 03/02/2000 6.00	RPSB-72 RPSB-72 (8-10) 03/02/2000 8.00	RPSB-73 RPSB-73 (4-6) 02/25/2000 4.00	RPSB-73 RPSB-73 (8-10) 02/25/2000 8.00	RPSB-73 RPSB-73 (12-14) 02/25/2000 12.00
Cyanide, total	(mg/kg)	2.5	0.46 B	0.71 B	0.27 B	0.13 B	0.26 B
Total Phenols	(mg/kg)	12 U	12 U	12 U	12 U	12 U	12 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 46
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE AND PHENOLS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-74 RPSB-74 (4-6) 02/25/2000 4.00	RPSB-74 RPSB-74 (8-10) 02/25/2000 8.00	RPSB-74 RPSB-74 (10-12) 02/25/2000 10.00	RPSB-75 RPSB-75 (4-6) 02/28/2000 4.00	RPSB-75 RPSB-75 (6-8) 02/28/2000 6.00	RPSB-75 RPSB-75 (8-10) 02/28/2000 8.00
Cyanide, total	(mg/kg)	0.59 B	0.48 B	1.7	2.1	0.56 B	0.22 B
Total Phenols	(mg/kg)	12 U	12 U	12 U	14 U	14 U	14 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 46
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE AND PHENOLS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-76 RPSB-76 (4-6) 02/28/2000 4.00	RPSB-76 RPSB-76 (6-8) 02/28/2000 6.00	RPSB-76 RPSB-76 (8-10) 02/28/2000 8.00	RPSB-77 RPSB-77 (4-6) 02/28/2000 4.00	RPSB-77 RPSB-77 (6-8) 02/28/2000 6.00	RPSB-77 RPSB-77 (8-10) 02/28/2000 8.00
Cyanide, total	(mg/kg)	3.4	0.52 B	0.28 B	2	3.2	0.63 B
Total Phenols	(mg/kg)	14 U	14 U	14 U	14 U	14 U	14 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 46
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE AND PHENOLS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-78 RPSB-78 (4-6) 02/29/2000 4.00	RPSB-78 RPSB-78 (6-8) 02/29/2000 6.00	RPSB-78 RPSB-78 (8-10) 02/29/2000 8.00	RPSB-79 RPSB-79 (8-10) 03/01/2000 8.00	RPSB-79 RPSB-79 (10-12) 03/01/2000 10.00	RPSB-80 RPSB-80 (4-6) 03/01/2000 4.00
Cyanide, total	(mg/kg)	0.17 U	2.4	0.43 B	0.15 U	0.12 U	0.66 B
Total Phenols	(mg/kg)	11 U	11 U	11 U	11 U	11 U	11 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 46
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE AND PHENOLS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-80 RPSB-80 (6-8) 03/01/2000 6.00	RPSB-80 RPSB-80 (8-10) 03/01/2000 8.00	RPSB-81 RPSB-81 (4-6) 03/01/2000 4.00	RPSB-81 RPSB-81 (6-8) 03/01/2000 6.00	RPSB-81 RPSB-81 (8-10) 03/01/2000 8.00	RPSB-82 RPSB-82 (4-6) 03/02/2000 4.00
Cyanide, total	(mg/kg)	0.99	0.12 U	5.1	0.14 U	0.21 U	0.33 B
Total Phenols	(mg/kg)	11 U	11 U	11 U	11 U	11 U	12 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 46
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE AND PHENOLS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-82 RPSB-82 (6-8) 03/02/2000 6.00	RPSB-82 RPSB-82 (8-10) 03/02/2000 8.00
Cyanide, total	(mg/kg)	0.25 B	0.21 U
Total Phenols	(mg/kg)	12 U	12 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 47
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TCLP RCRA ORGANICS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-70 RPSB-70 (6-8) 03/03/2000 6.00	RPSB-71 RPSB-71 (6-8) 03/03/2000 6.00	RPSB-72 RPSB-72 (6-8) 03/02/2000 6.00	RPSB-73 RPSB-73 (8-10) 02/25/2000 8.00	RPSB-74 RPSB-74 (8-10) 02/25/2000 8.00	RPSB-75 RPSB-75 (6-8) 02/28/2000 6.00
Vinyl chloride (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Benzene (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Pyridine (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
1,4-Dichlorobenzene (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
2-Methylphenol (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
4-Methylphenol (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
Hexachloroethane (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
Nitrobenzene (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
Hexachlorobutadiene (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
2,4,6-Trichlorophenol (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
2,4,5-Trichlorophenol (TCLP)	(ug/l)	67 U	67 U	67 U	67 U	67 U	67 U
2,4-Dinitrotoluene (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
Hexachlorobenzene (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U

ug/l: microgram/liter
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 47
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TCLP RCRA ORGANICS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-70 RPSB-70 (6-8) 03/03/2000 6.00	RPSB-71 RPSB-71 (6-8) 03/03/2000 6.00	RPSB-72 RPSB-72 (6-8) 03/02/2000 6.00	RPSB-73 RPSB-73 (8-10) 02/25/2000 8.00	RPSB-74 RPSB-74 (8-10) 02/25/2000 8.00	RPSB-75 RPSB-75 (6-8) 02/28/2000 6.00
Pentachlorophenol (TCLP)	(ug/l)	67 U	67 U	67 U	67 U	67 U	67 U
gamma-BHC (Lindane) (TCLP)	(ug/l)	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Endrin (TCLP)	(ug/l)	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Heptachlor (TCLP)	(ug/l)	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Heptachlor epoxide (TCLP)	(ug/l)	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Methoxychlor (TCLP)	(ug/l)	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Toxaphene (TCLP)	(ug/l)	17 U	17 U	17 U	17 U	17 U	17 U
2,4-D (TCLP)	(ug/l)	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
2,4,5-TP (Silvex) (TCLP)	(ug/l)	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U

ug/l: microgram/liter
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 47
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TCLP RCRA ORGANICS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-76 RPSB-76 (6-8) 02/28/2000 6.00	RPSB-77 RPSB-77 (6-8) 02/28/2000 6.00	RPSB-78 RPSB-78 (6-8) 02/29/2000 6.00	RPSB-79 RPSB-79 (8-10) 03/01/2000 8.00	RPSB-80 RPSB-80 (6-8) 03/01/2000 6.00	RPSB-81 RPSB-81 (6-8) 03/01/2000 6.00
Vinyl chloride (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Benzene (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	17	5 U
Tetrachloroethene (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene (TCLP)	(ug/l)	5 U	5 U	5 U	5 U	5 U	5 U
Pyridine (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
1,4-Dichlorobenzene (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
2-Methylphenol (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
4-Methylphenol (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
Hexachloroethane (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
Nitrobenzene (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
Hexachlorobutadiene (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
2,4,6-Trichlorophenol (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
2,4,5-Trichlorophenol (TCLP)	(ug/l)	67 U	67 U	67 U	67 U	67 U	67 U
2,4-Dinitrotoluene (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U
Hexachlorobenzene (TCLP)	(ug/l)	33 U	33 U	33 U	33 U	33 U	33 U

ug/l: microgram/liter
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 47
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TCLP RCRA ORGANICS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-76 RPSB-76 (6-8) 02/28/2000 6.00	RPSB-77 RPSB-77 (6-8) 02/28/2000 6.00	RPSB-78 RPSB-78 (6-8) 02/29/2000 6.00	RPSB-79 RPSB-79 (8-10) 03/01/2000 8.00	RPSB-80 RPSB-80 (6-8) 03/01/2000 6.00	RPSB-81 RPSB-81 (6-8) 03/01/2000 6.00
Pentachlorophenol (TCLP)	(ug/l)	67 U	67 U	67 U	67 U	67 U	67 U
gamma-BHC (Lindane) (TCLP)	(ug/l)	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Endrin (TCLP)	(ug/l)	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Heptachlor (TCLP)	(ug/l)	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Heptachlor epoxide (TCLP)	(ug/l)	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Methoxychlor (TCLP)	(ug/l)	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Toxaphene (TCLP)	(ug/l)	17 U	17 U	17 U	17 U	17 U	17 U
2,4-D (TCLP)	(ug/l)	1.7 U	1.7 U	3.3 U	3.3 U	3.3 U	3.3 U
2,4,5-TP (Silvex) (TCLP)	(ug/l)	0.17 U	0.17 U	0.33 U	0.33 U	0.33 U	0.33 U

ug/l: microgram/liter
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 47
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TCLP RCRA ORGANICS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-82 RPSB-82 (6-8) 03/02/2000 6.00
Vinyl chloride (TCLP)	(ug/l)	5 U
1,1-Dichloroethene (TCLP)	(ug/l)	5 U
Chloroform (TCLP)	(ug/l)	5 U
1,2-Dichloroethane (TCLP)	(ug/l)	5 U
2-Butanone (TCLP)	(ug/l)	5 U
Carbon tetrachloride (TCLP)	(ug/l)	5 U
Trichloroethene (TCLP)	(ug/l)	5 U
Benzene (TCLP)	(ug/l)	5 U
Tetrachloroethene (TCLP)	(ug/l)	5 U
Chlorobenzene (TCLP)	(ug/l)	5 U
Pyridine (TCLP)	(ug/l)	33 U
1,4-Dichlorobenzene (TCLP)	(ug/l)	33 U
2-Methylphenol (TCLP)	(ug/l)	33 U
4-Methylphenol (TCLP)	(ug/l)	33 U
Hexachloroethane (TCLP)	(ug/l)	33 U
Nitrobenzene (TCLP)	(ug/l)	33 U
Hexachlorobutadiene (TCLP)	(ug/l)	33 U
2,4,6-Trichlorophenol (TCLP)	(ug/l)	33 U
2,4,5-Trichlorophenol (TCLP)	(ug/l)	67 U
2,4-Dinitrotoluene (TCLP)	(ug/l)	33 U
Hexachlorobenzene (TCLP)	(ug/l)	33 U

ug/l: microgram/liter
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 47
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TCLP RCRA ORGANICS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-82 RPSB-82 (6-8) 03/02/2000 6.00
Pentachlorophenol (TCLP)	(ug/l)	67 U
gamma-BHC (Lindane) (TCLP)	(ug/l)	0.17 U
Endrin (TCLP)	(ug/l)	0.33 U
Heptachlor (TCLP)	(ug/l)	0.17 U
Heptachlor epoxide (TCLP)	(ug/l)	0.17 U
Methoxychlor (TCLP)	(ug/l)	1.7 U
Toxaphene (TCLP)	(ug/l)	17 U
2,4-D (TCLP)	(ug/l)	1.7 U
2,4,5-TP (Silvex) (TCLP)	(ug/l)	0.17 U

ug/l: microgram/liter
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 48
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TCLP RCRA INORGANICS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-70 RPSB-70 (6-8) 03/03/2000 6.00	RPSB-71 RPSB-71 (6-8) 03/03/2000 6.00	RPSB-72 RPSB-72 (6-8) 03/02/2000 6.00	RPSB-73 RPSB-73 (8-10) 02/25/2000 8.00	RPSB-74 RPSB-74 (8-10) 02/25/2000 8.00	RPSB-75 RPSB-75 (6-8) 02/28/2000 6.00
Arsenic (TCLP)	(ug/l)	6.5 B	4.2 B	4 U	4.4 B	3.9 B	4.8 B
Barium (TCLP)	(ug/l)	12.8 B	13.6 B	9.6 B	9.8 B	17.5 B	19.1 B
Cadmium (TCLP)	(ug/l)	0.4 U	0.4 U	0.4 U	2 U	2 U	0.4 U
Chromium (TCLP)	(ug/l)	2 U	2 U	2 U	2 U	3.6 B	2 U
Lead (TCLP)	(ug/l)	3.1 B	2.3 U	6.3 B	3 U	3 U	2.3 U
Mercury (TCLP)	(ug/l)	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Selenium (TCLP)	(ug/l)	7.4 B	8.2 B	5.4 B	4 U	4 U	4 U
Silver (TCLP)	(ug/l)	2 U	2 U	2 U	3 U	3 U	2 U

ug/l: microgram/liter
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 48
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TCLP RCRA INORGANICS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-76 RPSB-76 (6-8) 02/28/2000 6.00	RPSB-77 RPSB-77 (6-8) 02/28/2000 6.00	RPSB-78 RPSB-78 (6-8) 02/29/2000 6.00	RPSB-79 RPSB-79 (8-10) 03/01/2000 8.00	RPSB-80 RPSB-80 (6-8) 03/01/2000 6.00	RPSB-81 RPSB-81 (6-8) 03/01/2000 6.00
Arsenic (TCLP)	(ug/l)	4 U	6.1 B	3 U	3 U	3 U	3 U
Barium (TCLP)	(ug/l)	9.5 B	33.9 B	22.8 B	115 B	129 B	74.7 B
Cadmium (TCLP)	(ug/l)	0.4 U	0.4 U	2 U	2 U	2 U	2 U
Chromium (TCLP)	(ug/l)	2 U	2 U	2 U	2 U	2 U	2 U
Lead (TCLP)	(ug/l)	10.6	10 B	18.5	3.1 B	11.6	7 B
Mercury (TCLP)	(ug/l)	1 U	1 U	1 U	1 U	1 U	1 U
Selenium (TCLP)	(ug/l)	5.3 B	6.4 B	4.3 B	4 U	4 U	5 B
Silver (TCLP)	(ug/l)	2 U	2 U	3.2 B	3 U	3 U	3 U

ug/l: microgram/liter
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 48
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SUBSURFACE SOIL SAMPLE RESULTS
TCLP RCRA INORGANICS

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-82 RPSB-82 (6-8) 03/02/2000 6.00
Arsenic (TCLP)	(ug/l)	4 U
Barium (TCLP)	(ug/l)	10 B
Cadmium (TCLP)	(ug/l)	0.4 U
Chromium (TCLP)	(ug/l)	2 U
Lead (TCLP)	(ug/l)	17.7
Mercury (TCLP)	(ug/l)	1 U
Selenium (TCLP)	(ug/l)	4.5 B
Silver (TCLP)	(ug/l)	2 U

ug/l: microgram/liter
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 49
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-100 RPSB-100(4-6) 11/08/2001 4.00	RPSB-100 RPSB-100(36-38) 11/08/2001 36.00	RPSB-101 RPSB-101(5-7) 11/15/2001 5.00	RPSB-101 RPSB-101(15-17) 11/15/2001 15.00	RPSB-101 RPSB-101(39-41) 11/15/2001 39.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.018	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.006	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.003	0.002	0.045	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.013	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.003	0.002	0.082	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---:Not anlayzed

TABLE 49
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-102 RPSB-102(5-7) 11/28/2001 5.00	RPSB-102 RPSB-102(29-31) 11/28/2001 29.00	RPSB-103 RPSB-103(4-6) 11/07/2001 4.00	RPSB-104 RPSB-104(4-6) 11/07/2001 4.00	RPSB-105 RPSB-105(4-6) 11/06/2001 4.00
Benzene	(mg/kg)	0.06	0.002	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.016	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001	0.001 U	0.001 U	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.019	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---:Not anlayzed

TABLE 49
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-106 RPSB-106(6-8) 11/07/2001 6.00	RPSB-107 RPSB-107(4-6) 11/07/2001 4.00	RPSB-108 RPSB-108(4-6) 11/06/2001 4.00	RPSB-109 RPSB-109(4-6) 11/05/2001 4.00	RPSB-110 RPSB-110(4-6) 11/05/2001 4.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001 U	0.005	0.001 U
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.005	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---:Not anlayzed

TABLE 49
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-111 RPSB-111(4-6) 11/05/2001 4.00	RPSB-112 RPSB-112(4-6) 11/05/2001 4.00	RPSB-88 RPSB-88(4-6) 11/01/2001 4.00	RPSB-90 RPSB-90(4-6) 11/02/2001 4.00	RPSB-90 RPSB-90(16-18) 11/02/2001 16.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.002	0.001 U	0.001
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.004	0.004	0.01
Total BTEX	(mg/kg)		0.00	0.00	0.006	0.004	0.011

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---:Not anlayzed

TABLE 49
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-91 RPSB9168 11/01/2001 6.00	RPSB-91 RPSB912830 11/01/2001 28.00	RPSB-92 RPSB-92(4-6) 10/29/2001 4.00	RPSB-93 RPSB9368 11/01/2001 6.00	RPSB-94 RPSB-94(4-6) 10/31/2001 4.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.006	0.002	0.01	0.007	0.001 U
Total BTEX	(mg/kg)		0.006	0.002	0.010	0.007	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---:Not anlayzed

TABLE 49
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-95 RPSB-95(4-6) 10/31/2001 4.00	RPSB-95 RPSB-95(36-38) 10/31/2001 36.00	RPSB-96 RPSB-96(4-6) 11/05/2001 4.00	RPSB-96 RPSB963840 11/06/2001 38.00	RPSB-98 RPSB-98(4-6) 11/07/2001 4.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.001 U	0.004
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.005	0.001 U	0.016
Total BTEX	(mg/kg)		0.00	0.00	0.005	0.00	0.021

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---:Not anlayzed

TABLE 49
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-98 RPSB-98(38-40) 11/08/2001 38.00	RPSB-98A RPSB-98A(6-8) 11/09/2001 6.00	RPSB-98A RPSB-98A(18-20) 11/09/2001 18.00	RPSB-99 RPSB-99(6-8) 11/14/2001 6.00	RPSB-99 RPSB-99(38-40) 11/14/2001 38.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.036	0.001 U
Ethylbenzene	(mg/kg)	5.5	0.001 U	0.001 U	0.002	0.041	0.002
Toluene	(mg/kg)	1.5	0.002	0.001	0.002	0.059	0.004
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001	0.066	0.006
Total BTEX	(mg/kg)		0.002	0.001	0.005	0.202	0.012

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---:Not anlayzed

TABLE 50
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-100 RPSB-100(4-6) 11/08/2001 4.00	RPSB-100 RPSB-100(36-38) 11/08/2001 36.00	RPSB-101 RPSB-101(5-7) 11/15/2001 5.00	RPSB-101 RPSB-101(15-17) 11/15/2001 15.00	RPSB-101 RPSB-101(39-41) 11/15/2001 39.00
Benzo(a)pyrene	(mg/kg)	0.061	0.41 U	0.4 U	[0.59]	0.33 U	0.32 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.41 U	0.4 U	[0.17] J	0.33 U	0.32 U
Benzo(a)anthracene	(mg/kg)	0.224	0.41 U	0.4 U	[0.62]	0.33 U	0.32 U
Acenaphthene	(mg/kg)	50	0.41 U	0.4 U	0.034 J	0.33 U	0.32 U
Phenanthrene	(mg/kg)	50	0.41 U	0.4 U	0.54	0.037 J	0.32 U
Fluorene	(mg/kg)	50	0.41 U	0.4 U	0.044 J	0.33 U	0.32 U
Naphthalene	(mg/kg)	13	0.41 U	0.4 U	2.1	0.33 U	0.32 U
2-Methylnaphthalene	(mg/kg)	36.4	0.41 U	0.4 U	0.58	0.33 U	0.32 U
Anthracene	(mg/kg)	50	0.11 J	0.4 U	0.14 J	0.33 U	0.32 U
Pyrene	(mg/kg)	50	0.41 U	0.4 U	1.2	0.33 U	0.32 U
Dibenzofuran	(mg/kg)	6.2	0.41 U	0.4 U	0.047 J	0.33 U	0.32 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.081 J	0.4 U	0.65	0.33 U	0.32 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.41 U	0.4 U	0.56	0.33 U	0.32 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.41 U	0.4 U	[1.1]	0.33 U	0.32 U
Fluoranthene	(mg/kg)	50	0.41 U	0.4 U	0.87	0.33 U	0.32 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.41 U	0.4 U	0.4	0.33 U	0.32 U
Acenaphthylene	(mg/kg)	41	0.23 J	0.4 U	0.31 J	0.33 U	0.32 U
Chrysene	(mg/kg)	0.4	0.41 U	0.4 U	[0.94]	0.33 U	0.32 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	4.38	0.00	0.00
Total PAHs	(mg/kg)	500	0.421	0.00	10.895	0.037	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 50
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-102 RPSB-102(5-7) 11/28/2001 5.00	RPSB-102 RPSB-102(29-31) 11/28/2001 29.00	RPSB-103 RPSB-103(4-6) 11/07/2001 4.00	RPSB-104 RPSB-104(4-6) 11/07/2001 4.00	RPSB-105 RPSB-105(4-6) 11/06/2001 4.00
Benzo(a)pyrene	(mg/kg)	0.061	[2.6]	0.42 U	0.4 U	0.36 U	0.39 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[0.58]	0.42 U	0.4 U	0.36 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	[1.6]	0.42 U	0.4 U	0.36 U	0.39 U
Acenaphthene	(mg/kg)	50	0.38 U	0.42 U	0.4 U	0.36 U	0.39 U
Phenanthrene	(mg/kg)	50	0.86	0.42 U	0.4 U	0.36 U	0.39 U
Fluorene	(mg/kg)	50	0.086 J	0.42 U	0.4 U	0.36 U	0.39 U
Naphthalene	(mg/kg)	13	0.086 J	0.42 U	0.4 U	0.36 U	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	0.054 J	0.42 U	0.4 U	0.36 U	0.39 U
Anthracene	(mg/kg)	50	0.31 J	0.42 U	0.4 U	0.36 U	0.39 U
Pyrene	(mg/kg)	50	3.8	0.42 U	0.4 U	0.36 U	0.39 U
Dibenzofuran	(mg/kg)	6.2	0.38 U	0.42 U	0.4 U	0.36 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	2.3	0.42 U	0.4 U	0.36 U	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	2.3	0.42 U	0.4 U	0.36 U	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[3.8]	0.42 U	0.4 U	0.36 U	0.39 U
Fluoranthene	(mg/kg)	50	2.2	0.42 U	0.4 U	0.36 U	0.39 U
Benzo(k)fluoranthene	(mg/kg)	1.1	[1.4]	0.42 U	0.4 U	0.36 U	0.39 U
Acenaphthylene	(mg/kg)	41	0.74	0.42 U	0.4 U	0.36 U	0.39 U
Chrysene	(mg/kg)	0.4	[2.6]	0.42 U	0.4 U	0.36 U	0.39 U
Total CAPAHs	(mg/kg)	10	[14.88]	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	25.316	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 50
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-106 RPSB-106(6-8) 11/07/2001 6.00	RPSB-107 RPSB-107(4-6) 11/07/2001 4.00	RPSB-108 RPSB-108(4-6) 11/06/2001 4.00	RPSB-109 RPSB-109(4-6) 11/05/2001 4.00	RPSB-110 RPSB-110(4-6) 11/05/2001 4.00
Benzo(a)pyrene	(mg/kg)	0.061	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Benzo(a)anthracene	(mg/kg)	0.224	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Acenaphthene	(mg/kg)	50	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Phenanthrene	(mg/kg)	50	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Fluorene	(mg/kg)	50	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Naphthalene	(mg/kg)	13	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Anthracene	(mg/kg)	50	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Pyrene	(mg/kg)	50	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Dibenzofuran	(mg/kg)	6.2	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Fluoranthene	(mg/kg)	50	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Acenaphthylene	(mg/kg)	41	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Chrysene	(mg/kg)	0.4	0.35 U	0.37 U	0.4 U	0.39 U	0.39 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 50
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-111 RPSB-111(4-6) 11/05/2001 4.00	RPSB-112 RPSB-112(4-6) 11/05/2001 4.00	RPSB-88 RPSB-88(4-6) 11/01/2001 4.00	RPSB-90 RPSB-90(4-6) 11/02/2001 4.00	RPSB-90 RPSB-90(16-18) 11/02/2001 16.00
Benzo(a)pyrene	(mg/kg)	0.061	0.044 J	0.35 U	0.39 U	0.34 U	0.42 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.36 U	0.35 U	0.39 U	0.34 U	0.42 U
Benzo(a)anthracene	(mg/kg)	0.224	0.043 J	0.35 U	0.39 U	0.34 U	0.42 U
Acenaphthene	(mg/kg)	50	0.36 U	0.35 U	0.39 U	0.34 U	0.25 J
Phenanthrene	(mg/kg)	50	0.36 U	0.35 U	0.39 U	0.34 U	0.42 U
Fluorene	(mg/kg)	50	0.36 U	0.35 U	0.39 U	0.34 U	0.26 J
Naphthalene	(mg/kg)	13	0.36 U	0.35 U	0.39 U	0.34 U	0.42 U
2-Methylnaphthalene	(mg/kg)	36.4	0.36 U	0.35 U	0.39 U	0.34 U	0.42 U
Anthracene	(mg/kg)	50	0.36 U	0.35 U	0.39 U	0.34 U	0.42 U
Pyrene	(mg/kg)	50	0.11 J	0.35 U	0.39 U	0.34 U	0.076 J
Dibenzofuran	(mg/kg)	6.2	0.36 U	0.35 U	0.39 U	0.34 U	0.42 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.36 U	0.35 U	0.39 U	0.34 U	0.42 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.36 U	0.35 U	0.39 U	0.34 U	0.42 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.05 J	0.35 U	0.39 U	0.34 U	0.42 U
Fluoranthene	(mg/kg)	50	0.083 J	0.35 U	0.39 U	0.34 U	0.06 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.36 U	0.35 U	0.39 U	0.34 U	0.42 U
Acenaphthylene	(mg/kg)	41	0.36 U	0.35 U	0.39 U	0.34 U	0.42 U
Chrysene	(mg/kg)	0.4	0.051 J	0.35 U	0.39 U	0.34 U	0.42 U
Total CAPAHs	(mg/kg)	10	0.188	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	0.381	0.00	0.00	0.00	0.646

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 50
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-91 RPSB9168 11/01/2001 6.00	RPSB-91 RPSB912830 11/01/2001 28.00	RPSB-92 RPSB-92(4-6) 10/29/2001 4.00	RPSB-93 RPSB9368 11/01/2001 6.00	RPSB-94 RPSB-94(4-6) 10/31/2001 4.00
Benzo(a)pyrene	(mg/kg)	0.061	0.33 U	0.4 U	[25]	0.35 U	0.34 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.33 U	0.4 U	[3.5] J	0.35 U	0.34 U
Benzo(a)anthracene	(mg/kg)	0.224	0.33 U	0.4 U	[20]	0.35 U	0.34 U
Acenaphthene	(mg/kg)	50	0.33 U	0.053 J	0.43 J	0.35 U	0.34 U
Phenanthrene	(mg/kg)	50	0.33 U	0.17 J	12	0.35 U	0.34 U
Fluorene	(mg/kg)	50	0.33 U	0.4 U	3.5 U	0.35 U	0.34 U
Naphthalene	(mg/kg)	13	0.33 U	0.058 J	3.5 U	0.35 U	0.34 U
2-Methylnaphthalene	(mg/kg)	36.4	0.33 U	0.4 U	3.5 U	0.35 U	0.34 U
Anthracene	(mg/kg)	50	0.33 U	0.041 J	4.4	0.35 U	0.34 U
Pyrene	(mg/kg)	50	0.33 U	0.087 J	34	0.35 U	0.34 U
Dibenzofuran	(mg/kg)	6.2	0.33 U	0.4 U	3.5 U	0.35 U	0.34 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.33 U	0.4 U	10	0.35 U	0.34 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.33 U	0.4 U	[10]	0.35 U	0.34 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.33 U	0.4 U	[26]	0.35 U	0.34 U
Fluoranthene	(mg/kg)	50	0.33 U	0.051 J	26	0.35 U	0.34 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.33 U	0.4 U	[8]	0.35 U	0.34 U
Acenaphthylene	(mg/kg)	41	0.33 U	0.4 U	10	0.35 U	0.34 U
Chrysene	(mg/kg)	0.4	0.33 U	0.4 U	[19]	0.35 U	0.34 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	[111.50]	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.460	208.33	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 50
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-95 RPSB-95(4-6) 10/31/2001 4.00	RPSB-95 RPSB-95(36-38) 10/31/2001 36.00	RPSB-96 RPSB-96(4-6) 11/05/2001 4.00	RPSB-96 RPSB963840 11/06/2001 38.00	RPSB-98 RPSB-98(4-6) 11/07/2001 4.00
Benzo(a)pyrene	(mg/kg)	0.061	0.38 U	0.41 U	[0.98]	0.4 U	0.38 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.38 U	0.41 U	[0.25] J	0.4 U	0.38 U
Benzo(a)anthracene	(mg/kg)	0.224	0.38 U	0.41 U	[0.97]	0.4 U	0.38 U
Acenaphthene	(mg/kg)	50	0.38 U	0.41 U	0.39 U	0.4 U	0.38 U
Phenanthrene	(mg/kg)	50	0.38 U	0.41 U	0.22 J	0.4 U	0.38 U
Fluorene	(mg/kg)	50	0.38 U	0.41 U	0.39 U	0.4 U	0.38 U
Naphthalene	(mg/kg)	13	0.38 U	0.41 U	0.065 J	0.4 U	0.38 U
2-Methylnaphthalene	(mg/kg)	36.4	0.38 U	0.41 U	0.39 U	0.4 U	0.38 U
Anthracene	(mg/kg)	50	0.38 U	0.41 U	0.44	0.4 U	0.38 U
Pyrene	(mg/kg)	50	0.38 U	0.41 U	1.7	0.4 U	0.38 U
Dibenzofuran	(mg/kg)	6.2	0.38 U	0.41 U	0.39 U	0.4 U	0.38 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.38 U	0.41 U	0.79	0.4 U	0.38 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.38 U	0.41 U	0.71	0.4 U	0.38 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.38 U	0.41 U	[2]	0.4 U	0.38 U
Fluoranthene	(mg/kg)	50	0.38 U	0.41 U	0.9	0.4 U	0.38 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.38 U	0.41 U	0.9	0.4 U	0.38 U
Acenaphthylene	(mg/kg)	41	0.38 U	0.41 U	1.4	0.4 U	0.38 U
Chrysene	(mg/kg)	0.4	0.38 U	0.41 U	[1.2]	0.4 U	0.38 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	7.01	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.00	12.528	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 50
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-98 RPSB-98(38-40) 11/08/2001 38.00	RPSB-98A RPSB-98A(6-8) 11/09/2001 6.00	RPSB-98A RPSB-98A(18-20) 11/09/2001 18.00	RPSB-99 RPSB-99(6-8) 11/14/2001 6.00	RPSB-99 RPSB-99(38-40) 11/14/2001 38.00
Benzo(a)pyrene	(mg/kg)	0.061	0.4 U	[0.19] J	0.37 U	[0.38]	0.42 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	0.41 U	0.37 U	0.35 U	0.42 U
Benzo(a)anthracene	(mg/kg)	0.224	0.4 U	0.1 J	0.37 U	[0.28] J	0.42 U
Acenaphthene	(mg/kg)	50	0.4 U	0.41 U	0.37 U	0.098 J	0.42 U
Phenanthrene	(mg/kg)	50	0.4 U	0.12 J	0.37 U	0.26 J	0.42 U
Fluorene	(mg/kg)	50	0.4 U	0.071 J	0.37 U	0.12 J	0.42 U
Naphthalene	(mg/kg)	13	0.4 U	0.16 J	0.37 U	0.48	0.42 U
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	0.41 U	0.37 U	0.24 J	0.42 U
Anthracene	(mg/kg)	50	0.4 U	0.11 J	0.37 U	0.16 J	0.42 U
Pyrene	(mg/kg)	50	0.4 U	0.17 J	0.37 U	0.46	0.42 U
Dibenzofuran	(mg/kg)	6.2	0.4 U	0.054 J	0.37 U	0.35 U	0.42 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	0.18 J	0.37 U	0.3 J	0.42 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	0.16 J	0.37 U	0.32 J	0.42 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.4 U	0.2 J	0.37 U	0.66	0.42 U
Fluoranthene	(mg/kg)	50	0.4 U	0.13 J	0.37 U	0.37	0.42 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	0.091 J	0.37 U	0.31 J	0.42 U
Acenaphthylene	(mg/kg)	41	0.4 U	0.4 J	0.37 U	0.58	0.42 U
Chrysene	(mg/kg)	0.4	0.4 U	0.11 J	0.37 U	[0.4]	0.42 U
Total CAPAHs	(mg/kg)	10	0.00	0.851	0.00	2.350	0.00
Total PAHs	(mg/kg)	500	0.00	2.246	0.00	5.418	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 51
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-100 RPSB-100(4-6) 11/08/2001 4.00	RPSB-100 RPSB-100(36-38) 11/08/2001 36.00	RPSB-101 RPSB-101(5-7) 11/15/2001 5.00	RPSB-101 RPSB-101(15-17) 11/15/2001 15.00	RPSB-101 RPSB-101(39-41) 11/15/2001 39.00
Cyanide	(mg/kg)		7 U	7 U	0.36 B	0.80 B	0.41 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 51
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-102 RPSB-102(5-7) 11/28/2001 5.00	RPSB-102 RPSB-102(29-31) 11/28/2001 29.00	RPSB-103 RPSB-103(4-6) 11/07/2001 4.00	RPSB-104 RPSB-104(4-6) 11/07/2001 4.00	RPSB-105 RPSB-105(4-6) 11/06/2001 4.00
Cyanide	(mg/kg)		2.3	0.30 U	(0.65) B	(0.53) B	7 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 51
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-106 RPSB-106(6-8) 11/07/2001 6.00	RPSB-107 RPSB-107(4-6) 11/07/2001 4.00	RPSB-108 RPSB-108(4-6) 11/06/2001 4.00	RPSB-109 RPSB-109(4-6) 11/05/2001 4.00	RPSB-110 RPSB-110(4-6) 11/05/2001 4.00
Cyanide	(mg/kg)		7 U	(0.44) B	7 U	7 U	7 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 51
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-111 RPSB-111(4-6) 11/05/2001 4.00	RPSB-112 RPSB-112(4-6) 11/05/2001 4.00	RPSB-88 RPSB-88(4-6) 11/01/2001 4.00	RPSB-90 RPSB-90(4-6) 11/02/2001 4.00	RPSB-90 RPSB-90(16-18) 11/02/2001 16.00
Cyanide	(mg/kg)		(1)	7 U	(3.1) *	(6.7) *	(0.4) B*

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 51
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-91 RPSB9168 11/01/2001 6.00	RPSB-91 RPSB912830 11/01/2001 28.00	RPSB-92 RPSB-92(4-6) 10/29/2001 4.00	RPSB-93 RPSB9368 11/01/2001 6.00	RPSB-94 RPSB-94(4-6) 10/31/2001 4.00
Cyanide	(mg/kg)		(2.7) *	7 U	(0.94)	7 U	0.35 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 51
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-95 RPSB-95(4-6) 10/31/2001 4.00	RPSB-95 RPSB-95(36-38) 10/31/2001 36.00	RPSB-96 RPSB-96(4-6) 11/05/2001 4.00	RPSB-96 RPSB963840 11/06/2001 38.00	RPSB-98 RPSB-98(4-6) 11/07/2001 4.00
Cyanide	(mg/kg)		0.35 U	0.39 U	12.8	7 U	7 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 51
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
CYANIDE

PERIOD: From 10/29/2001 thru 11/28/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-98 RPSB-98(38-40) 11/08/2001 38.00	RPSB-98A RPSB-98A(6-8) 11/09/2001 6.00	RPSB-98A RPSB-98A(18-20) 11/09/2001 18.00	RPSB-99 RPSB-99(6-8) 11/14/2001 6.00	RPSB-99 RPSB-99(38-40) 11/14/2001 38.00
Cyanide	(mg/kg)		7 U	(1.6)	7 U	(0.38) B	(3.3)

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 52
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-113 RPSB-113(0-2) 03/22/2002 0.00	RPSB-114 RPSB-114(4-6) 03/22/2002 4.00	RPSB-115 RPSB-115(8-10) 03/22/2002 8.00	RPSB-116 RBSB-116(44-46) 04/01/2002 44.00	RPSB-116 RPSB-116(54-56) 04/01/2002 54.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.007	0.001 U	0.001 U	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.008	0.002
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001 U	0.011	0.003
Total BTEX	(mg/kg)		0.007	0.00	0.00	0.019	0.005

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 52
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-116 RPSB-116(66-68) 04/01/2002 66.00	RPSB-83 RPSB-83(4-6) 03/05/2002 4.00	RPSB-83 RPSB-83(9-11) 03/05/2002 9.00	RPSB-83 RPSB-83(40-41) 03/05/2002 40.00	RPSB-84 RPSB-84(4-5) 03/06/2002 4.00
Benzene	(mg/kg)	0.06	0.001 U	0.003 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.042	0.002	0.002	0.006
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.23	0.001 U	0.002	0.005
Xylene (total)	(mg/kg)	1.2	0.001 U	0.26	0.002	0.001 J	0.008
Total BTEX	(mg/kg)		0.00	0.532	0.004	0.005	0.019

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 52
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-84 RPSB-84(24-26) 03/06/2002 24.00	RPSB-84 RPSB-84(36-37) 03/06/2002 36.00	RPSB-85 RPSB-85(0-2) 03/06/2002 0.00	RPSB-85 RPSB-85(24-25.5 03/06/2002 24.00	RPSB-85 RPSB-85(36-38) 03/06/2002 36.00
Benzene	(mg/kg)	0.06	0.6 U	0.002	0.002	0.57 U	0.002
Toluene	(mg/kg)	1.5	0.6 U	0.001 U	0.005	0.57 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	[37]	0.002	0.002	[51] D	0.001 J
Xylene (total)	(mg/kg)	1.2	[27]	0.003	0.009	[28]	0.002
Total BTEX	(mg/kg)		64.000	0.007	0.018	79.00	0.005

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 52
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-86 RPSB-86(4-6) 03/07/2002 4.00	RPSB-86 RPSB-86(21-22) 03/07/2002 21.00	RPSB-86 RPSB-86(40-41) 03/07/2002 40.00	RPSB-87 RPSB-87(4-6) 03/08/2002 4.00	RPSB-87 RPSB-87(21-23) 03/08/2002 21.00
Benzene	(mg/kg)	0.06	0.001 U	0.025	0.001 U	0.001 U	0.004
Toluene	(mg/kg)	1.5	0.002	0.002	0.001 U	0.001 U	0.002 U
Ethyl benzene	(mg/kg)	5.5	0.003	0.019	0.001 U	0.001 U	0.002 U
Xylene (total)	(mg/kg)	1.2	0.012	0.008	0.003	0.002	0.006
Total BTEX	(mg/kg)		0.017	0.054	0.003	0.002	0.010

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 52
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-87 RPSB-87(37-39) 03/08/2002 37.00	RPSB-87A RPSB-87A(38-40) 03/28/2002 38.00	RPSB-87A RPSB-87A(58-60) 03/28/2002 58.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.000	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 53
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-113 RPSB-113(0-2) 03/22/2002 0.00	RPSB-114 RPSB-114(4-6) 03/22/2002 4.00	RPSB-115 RPSB-115(8-10) 03/22/2002 8.00	RPSB-116 RBSB-116(44-46) 04/01/2002 44.00	RPSB-116 RPSB-116(54-56) 04/01/2002 54.00
Benzo(a)pyrene	(mg/kg)	0.061	[1.8] J	[27]	0.41 U	[0.3] J	[0.19] J
Dibenzo(a,h)anthracene	(mg/kg)	0.014	3.8 U	[1.3] J	0.41 U	[0.038] J	0.33 U
Benzo(a)anthracene	(mg/kg)	0.224	[2] J	[59]	0.41 U	[0.35]	[0.23] J
Acenaphthene	(mg/kg)	50	3.8 U	4.3	0.41 U	2.2	1.7
Phenanthrene	(mg/kg)	50	2.2 J	[350] D	0.41 U	2	1.6
Fluorene	(mg/kg)	50	3.8 U	[68]	0.41 U	0.72	0.51
Naphthalene	(mg/kg)	13	3.8 U	6.6	0.41 U	1.7	1.5
2-Methylnaphthalene	(mg/kg)	36.4	3.8 U	21	0.41 U	0.97	0.66
Anthracene	(mg/kg)	50	0.72 J	[170] D	0.41 U	0.69	0.51
Pyrene	(mg/kg)	50	4.5	[240] D	0.069 J	1	0.72
Dibenzofuran	(mg/kg)	6.2	3.8 U	5.3	0.41 U	0.079 J	0.057 J
Benzo(g,h,i)perylene	(mg/kg)	50	1.5 J	12	0.41 U	0.18 J	0.12 J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	1.3 J	[12]	0.41 U	0.15 J	0.1 J
Benzo(b)fluoranthene	(mg/kg)	1.1	[2.6] J	[34]	0.41 U	0.27 J	0.16 J
Fluoranthene	(mg/kg)	50	3.2 J	[150] D	0.044 J	0.74	0.52
Benzo(k)fluoranthene	(mg/kg)	1.1	[1.3] J	[18]	0.41 U	0.1 J	0.075 J
Acenaphthylene	(mg/kg)	41	1.1 J	20	0.41 U	0.44	0.3 J
Chrysene	(mg/kg)	0.4	[2.6] J	[65]	0.41 U	0.34	0.23 J
Total CAPAHs	(mg/kg)	10	[11.60]	[216.30]	0.00	1.548	0.985
Total PAHs	(mg/kg)	500	24.82	[1283.50]	0.113	12.267	9.182

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 53
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-116 RPSB-116(66-68) 04/01/2002 66.00	RPSB-83 RPSB-83(4-6) 03/05/2002 4.00	RPSB-83 RPSB-83(9-11) 03/05/2002 9.00	RPSB-83 RPSB-83(40-41) 03/05/2002 40.00	RPSB-84 RPSB-84(4-5) 03/06/2002 4.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.14] J	8.2 U	0.42 U	0.39 U	[0.52]
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.33 U	8.2 U	0.42 U	0.39 U	[0.2] J
Benzo(a)anthracene	(mg/kg)	0.224	0.16 J	[1.5] J	0.044 J	0.39 U	0.14 J
Acenaphthene	(mg/kg)	50	0.74	8.2 U	0.42 U	0.055 J	0.37 U
Phenanthrene	(mg/kg)	50	0.82	8.2 U	0.42 U	0.18 J	0.11 J
Fluorene	(mg/kg)	50	0.25 J	8.2 U	0.42 U	0.39 U	0.37 U
Naphthalene	(mg/kg)	13	0.44	8.2 U	0.42 U	0.046 J	0.13 J
2-Methylnaphthalene	(mg/kg)	36.4	0.24 J	8.2 U	0.42 U	0.39 U	0.074 J
Anthracene	(mg/kg)	50	0.27 J	8.2 U	0.42 U	0.39 U	0.16 J
Pyrene	(mg/kg)	50	0.49	(4.1)	0.23 J	0.08 J	0.18 J
Dibenzofuran	(mg/kg)	6.2	0.33 U	8.2 U	0.42 U	0.39 U	0.37 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.093 J	8.2 U	0.42 U	0.39 U	1
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.077 J	8.2 U	0.42 U	0.39 U	0.88
Benzo(b)fluoranthene	(mg/kg)	1.1	0.13 J	<8.2	0.42 U	0.39 U	0.59
Fluoranthene	(mg/kg)	50	0.35	2.9 J	0.1 J	0.1 J	0.097 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.044 J	8.2 U	0.42 U	0.39 U	0.19 J
Acenaphthylene	(mg/kg)	41	0.2 J	0.97 J	0.42 U	0.39 U	0.28 J
Chrysene	(mg/kg)	0.4	0.16 J	[1.5] J	0.42 U	0.39 U	0.21 J
Total CAPAHs	(mg/kg)	10	0.711	3.00	0.044	0.00	2.730
Total PAHs	(mg/kg)	500	4.604	10.97	0.374	0.461	4.761

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 53
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-84 RPSB-84(24-26) 03/06/2002 24.00	RPSB-84 RPSB-84(36-37) 03/06/2002 36.00	RPSB-85 RPSB-85(0-2) 03/06/2002 0.00	RPSB-85 RPSB-85(24-25.5 03/06/2002 24.00	RPSB-85 RPSB-85(36-38) 03/06/2002 36.00
Benzo(a)pyrene	(mg/kg)	0.061	[15] DJ	[0.09] J	[1.6]	[33]	0.4 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	[1.5] J	0.4 U	[0.42] J	[3.5] J	0.4 U
Benzo(a)anthracene	(mg/kg)	0.224	[25]	0.17 J	[2.5]	[50]	0.4 U
Acenaphthene	(mg/kg)	50	[200] D	0.94	0.074 J	[160] D	0.4 U
Phenanthrene	(mg/kg)	50	[250] D	1.6	1.1	[410] D	0.11 J
Fluorene	(mg/kg)	50	[87] D	0.49	0.4 U	[140] D	0.4 U
Naphthalene	(mg/kg)	13	[520] D	1	0.22 J	[480] D	0.4 U
2-Methylnaphthalene	(mg/kg)	36.4	[200] D	0.38 J	0.14 J	[290] D	0.4 U
Anthracene	(mg/kg)	50	[61]	0.57	0.7	[110] D	0.063 J
Pyrene	(mg/kg)	50	[83] D	0.4 U	4.4	[160] D	0.084 J
Dibenzofuran	(mg/kg)	6.2	[7.2]	0.043 J	0.4 U	[10]	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	4.5	0.4 U	1.7	10	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[4.6]	0.4 U	1.4	[10]	0.4 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[12]	0.07 J	[2.3]	[24]	0.4 U
Fluoranthene	(mg/kg)	50	49	0.37 J	2.2	[100] D	0.053 J
Benzo(k)fluoranthene	(mg/kg)	1.1	[4.4]	0.09 J	0.72	[10]	0.4 U
Acenaphthylene	(mg/kg)	41	14	0.15 J	1.5	[93] D	0.4 U
Chrysene	(mg/kg)	0.4	[24]	0.15 J	[2.9]	[47]	0.4 U
Total CAPAHs	(mg/kg)	10	[86.500]	0.570	[11.840]	[177.00]	0.00
Total PAHs	(mg/kg)	500	[1562.200]	6.703	23.874	[2139.900]	0.310

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 53
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-86 RPSB-86(4-6) 03/07/2002 4.00	RPSB-86 RPSB-86(21-22) 03/07/2002 21.00	RPSB-86 RPSB-86(40-41) 03/07/2002 40.00	RPSB-87 RPSB-87(4-6) 03/08/2002 4.00	RPSB-87 RPSB-87(21-23) 03/08/2002 21.00
Benzo(a)pyrene	(mg/kg)	0.061	[0.18] J	4.2 U	0.41 U	0.42 U	[0.44] J
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.38 U	4.2 U	0.41 U	0.42 U	0.56 U
Benzo(a)anthracene	(mg/kg)	0.224	0.21 J	4.2 U	0.41 U	0.42 U	[0.57]
Acenaphthene	(mg/kg)	50	0.061 J	4.2 U	0.41 U	0.42 U	0.073 J
Phenanthrene	(mg/kg)	50	0.13 J	0.76 J	0.41 U	0.42 U	0.34 J
Fluorene	(mg/kg)	50	0.38 U	4.2 U	0.41 U	0.42 U	0.098 J
Naphthalene	(mg/kg)	13	0.056 J	0.71 J	0.41 U	0.42 U	0.2 J
2-Methylnaphthalene	(mg/kg)	36.4	0.38 U	4.2 U	0.41 U	0.42 U	0.068 J
Anthracene	(mg/kg)	50	0.093 J	0.64 J	0.41 U	0.42 U	0.22 J
Pyrene	(mg/kg)	50	0.39	0.94 J	0.41 U	0.42 U	0.97
Dibenzofuran	(mg/kg)	6.2	0.38 U	4.2 U	0.41 U	0.42 U	0.56 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.14 J	4.2 U	0.41 U	0.42 U	0.27 J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.13 J	4.2 U	0.41 U	0.42 U	0.27 J
Benzo(b)fluoranthene	(mg/kg)	1.1	0.23 J	4.2 U	0.41 U	0.42 U	0.51 J
Fluoranthene	(mg/kg)	50	0.21 J	0.82 J	0.41 U	0.42 U	0.98
Benzo(k)fluoranthene	(mg/kg)	1.1	0.064 J	4.2 U	0.41 U	0.42 U	0.18 J
Acenaphthylene	(mg/kg)	41	0.34 J	4.2 U	0.41 U	0.42 U	0.11 J
Chrysene	(mg/kg)	0.4	0.25 J	4.2 U	0.41 U	0.42 U	[0.61]
Total CAPAHs	(mg/kg)	10	1.064	0.00	0.00	0.00	2.580
Total PAHs	(mg/kg)	500	2.484	3.870	0.00	0.00	5.909

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 53
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-87 RPSB-87(37-39) 03/08/2002 37.00	RPSB-87A RPSB-87A(38-40) 03/28/2002 38.00	RPSB-87A RPSB-87A(58-60) 03/28/2002 58.00
Benzo(a)pyrene	(mg/kg)	0.061	0.4 U	0.4 U	0.42 U
Dibenzo(a,h)anthracene	(mg/kg)	0.014	0.4 U	0.4 U	0.42 U
Benzo(a)anthracene	(mg/kg)	0.224	0.4 U	0.4 U	0.42 U
Acenaphthene	(mg/kg)	50	0.4 U	0.4 U	0.42 U
Phenanthrene	(mg/kg)	50	0.4 U	0.4 U	0.42 U
Fluorene	(mg/kg)	50	0.4 U	0.4 U	0.42 U
Naphthalene	(mg/kg)	13	0.4 U	0.4 U	0.42 U
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	0.4 U	0.42 U
Anthracene	(mg/kg)	50	0.4 U	0.4 U	0.42 U
Pyrene	(mg/kg)	50	0.4 U	0.4 U	0.42 U
Dibenzofuran	(mg/kg)	6.2	0.4 U	0.4 U	0.42 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	0.4 U	0.42 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	0.4 U	0.42 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.4 U	0.4 U	0.42 U
Fluoranthene	(mg/kg)	50	0.4 U	0.4 U	0.42 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	0.4 U	0.42 U
Acenaphthylene	(mg/kg)	41	0.4 U	0.4 U	0.42 U
Chrysene	(mg/kg)	0.4	0.4 U	0.4 U	0.42 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 54
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-113 RPSB-113(0-2) 03/22/2002 0.00	RPSB-114 RPSB-114(4-6) 03/22/2002 4.00	RPSB-115 RPSB-115(8-10) 03/22/2002 8.00	RPSB-116 RBSB-116(44-46) 04/01/2002 44.00	RPSB-116 RPSB-116(54-56) 04/01/2002 54.00
Lead	(mg/kg)	500	171	206	7.9	9.3	19.3
Mercury	(mg/kg)	0.10	[0.21]	[0.14]	0.019 U	0.019 U	0.021 U
Silver	(mg/kg)		0.11 U	0.12 U	0.11 U	0.11 U	0.12 U
Arsenic	(mg/kg)	7.5	[20.4]	[19.6]	1.1	0.86 B	0.75 B
Barium	(mg/kg)	300	46.6	41.2	3.3 B	3.3 B	2.7 B
Cadmium	(mg/kg)	10	0.11 U	0.12 U	0.11 U	0.11 U	0.12 U
Chromium	(mg/kg)	50	8.3	6.1	2.2	3.4	4.2
Selenium	(mg/kg)	2	0.42 U	0.48 U	0.43 U	0.43 U	0.48 U
Cyanide	(mg/kg)		6.5	4.5	0.70 B	0.38 B	0.52 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 54
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-116 RPSB-116(66-68) 04/01/2002 66.00	RPSB-83 RPSB-83(4-6) 03/05/2002 4.00	RPSB-83 RPSB-83(9-11) 03/05/2002 9.00	RPSB-83 RPSB-83(40-41) 03/05/2002 40.00	RPSB-84 RPSB-84(4-5) 03/06/2002 4.00
Lead	(mg/kg)	500	15.8	2.2	1.5	0.44 B	25.4
Mercury	(mg/kg)	0.10	0.021 U	0.022 B	0.034 B	0.020 U	0.055
Silver	(mg/kg)		0.12 U	0.12 U	0.12 U	0.11 U	0.10 U
Arsenic	(mg/kg)	7.5	0.71 B	1.6	2.0	0.75 B	[8.0]
Barium	(mg/kg)	300	2.5 B	2.0 B	3.3 B	1.1 B	12.8
Cadmium	(mg/kg)	10	0.12 U	0.12 U	0.12 U	0.11 U	0.24 B
Chromium	(mg/kg)	50	2.6	1.6	6.9	3.0	9.7
Selenium	(mg/kg)	2	0.49 U	0.46 U	0.47 U	0.43 U	0.42 U
Cyanide	(mg/kg)		0.28 U	1.1 B	1.2	0.35 U	0.48 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 54
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-84 RPSB-84(24-26) 03/06/2002 24.00	RPSB-84 RPSB-84(36-37) 03/06/2002 36.00	RPSB-85 RPSB-85(0-2) 03/06/2002 0.00	RPSB-85 RPSB-85(24-25.5 03/06/2002 24.00	RPSB-85 RPSB-85(36-38) 03/06/2002 36.00
Lead	(mg/kg)	500	14.3	0.53 B	88.9	0.69	0.43 B
Mercury	(mg/kg)	0.10	0.086	0.020 U	[0.18]	0.017 U	0.020 U
Silver	(mg/kg)		0.12 U	0.11 U	0.11 U	0.11 U	0.11 U
Arsenic	(mg/kg)	7.5	0.88 B	0.72 B	[9.2]	0.69 B	0.65 B
Barium	(mg/kg)	300	2.9 B	1.7 B	26.6	2.2 B	1.2 B
Cadmium	(mg/kg)	10	0.12 U	0.11 U	0.44	0.11 U	0.11 U
Chromium	(mg/kg)	50	1.8	2.0	7.5	1.7	1.3
Selenium	(mg/kg)	2	0.46 U	0.43 U	0.44 U	0.45 U	0.42 U
Cyanide	(mg/kg)		0.31 U	0.28 U	0.77 B	0.28 U	0.29 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 54
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-86 RPSB-86(4-6) 03/07/2002 4.00	RPSB-86 RPSB-86(21-22) 03/07/2002 21.00	RPSB-86 RPSB-86(40-41) 03/07/2002 40.00	RPSB-87 RPSB-87(4-6) 03/08/2002 4.00	RPSB-87 RPSB-87(21-23) 03/08/2002 21.00
Lead	(mg/kg)	500	6.5	74.7	1.6	1.6	97.6
Mercury	(mg/kg)	0.10	[0.12]	[1.0]	0.02 U	0.021 B	[1.6]
Silver	(mg/kg)		0.11 U	0.12 U	0.13 B	0.13 B	0.15 U
Arsenic	(mg/kg)	7.5	4.4	[10.6]	0.76 B	1.4	[13.4]
Barium	(mg/kg)	300	5.0 B	40.0	2.4 B	3.8 B	51.4
Cadmium	(mg/kg)	10	0.13 B	0.80	0.11 U	0.12 U	0.95
Chromium	(mg/kg)	50	2.8	23.2	4.8	2.9	29.9
Selenium	(mg/kg)	2	0.43 U	0.50 B	0.44 U	0.46 U	0.61 U
Cyanide	(mg/kg)		0.27 U	0.31 U	0.29 U	0.29 U	0.40 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 54
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	RPSB-87 RPSB-87(37-39) 03/08/2002 37.00	RPSB-87A RPSB-87A(38-40) 03/28/2002 38.00	RPSB-87A RPSB-87A(58-60) 03/28/2002 58.00
Lead	(mg/kg)	500	0.55 B	0.72	2.0
Mercury	(mg/kg)	0.10	0.019 U	0.018 U	0.020 U
Silver	(mg/kg)		0.12 U	0.10 U	0.12 U
Arsenic	(mg/kg)	7.5	1.2	1.6	0.90 B
Barium	(mg/kg)	300	2.2 B	2.0 B	7.9 B
Cadmium	(mg/kg)	10	0.12 U	0.10 U	0.12 U
Chromium	(mg/kg)	50	1.8	1.6	6.0
Selenium	(mg/kg)	2	0.47 U	0.41 U	0.50 U
Cyanide	(mg/kg)		0.28 U	0.38 U	0.51 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 55
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-113 RPSB-113(0-2) 03/22/2002 0.00	RPSB-114 RPSB-114(4-6) 03/22/2002 4.00	RPSB-115 RPSB-115(8-10) 03/22/2002 8.00	RPSB-116 RBSB-116(44-46) 04/01/2002 44.00	RPSB-116 RPSB-116(54-56) 04/01/2002 54.00	RPSB-116 RPSB-116(66-68) 04/01/2002 66.00
Total Phenols	(mg/kg)	22 U	23 U	24 U	23 U	23 U	23 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 55
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-83 RPSB-83(4-6) 03/05/2002 4.00	RPSB-83 RPSB-83(9-11) 03/05/2002 9.00	RPSB-83 RPSB-83(40-41) 03/05/2002 40.00	RPSB-84 RPSB-84(4-5) 03/06/2002 4.00	RPSB-84 RPSB-84(24-26) 03/06/2002 24.00	RPSB-84 RPSB-84(36-37) 03/06/2002 36.00
Total Phenols	(mg/kg)	23 U	25 U	23 U	23 U	23 U	23 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 55
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-85 RPSB-85(0-2) 03/06/2002 0.00	RPSB-85 RPSB-85(24-25.5 03/06/2002 24.00	RPSB-85 RPSB-85(36-38) 03/06/2002 36.00	RPSB-86 RPSB-86(4-6) 03/07/2002 4.00	RPSB-86 RPSB-86(21-22) 03/07/2002 21.00	RPSB-86 RPSB-86(40-41) 03/07/2002 40.00
Total Phenols	(mg/kg)	23 U	23 U	23 U	23 U	23 U	29 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 55
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/05/2002 thru 04/01/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSB-87 RPSB-87(4-6) 03/08/2002 4.00	RPSB-87 RPSB-87(21-23) 03/08/2002 21.00	RPSB-87 RPSB-87(37-39) 03/08/2002 37.00	RPSB-87A RPSB-87A(38-40) 03/28/2002 38.00	RPSB-87A RPSB-87A(58-60) 03/28/2002 58.00
Total Phenols	(mg/kg)	29 U	29 U	29 U	21 U	25 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 56
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-01I RPMW-01I 03/15/2000	RPMW-01S RPMW-01S 03/15/2000	RPMW-02D RPMW-02D 03/16/2000	RPMW-02I RPMW-02I 03/15/2000	RPMW-02S RPMW-02S 03/15/2000
Benzene	(ug/l)	1.0	5 U	5 U	[1700] D	[1200]	5 U
Ethylbenzene	(ug/l)	5	5 U	5 U	[120]	[3100]	5 U
Toluene	(ug/l)	5	5 U	5 U	[38] J	[230] J	5 U
Xylene (total)	(ug/l)	5	5 U	5 U	[740]	[2400]	[7]
Total BTEX	(ug/l)		0.00	0.00	2598.00	6930.00	7.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 56
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-03D RPMW-03D 03/16/2000	RPMW-03I RPMW-03I 03/15/2000	RPMW-03S RPMW-03S 03/15/2000	RPMW-11D RPMW-11D 03/18/2000	RPMW-11I RPMW-11I 03/17/2000
Benzene	(ug/l)	1.0	5 U	[11]	5 U	[9]	[300] D
Ethylbenzene	(ug/l)	5	5 U	[5]	5 U	[13]	[880] D
Toluene	(ug/l)	5	5 U	5 U	5 U	5 U	[47]
Xylene (total)	(ug/l)	5	5 U	5 U	5 U	[8]	[490] D
Total BTEX	(ug/l)		0.00	16.00	0.00	30.00	1717.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 56
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-11S RPMW-11S 03/17/2000	RPMW-16I RPMW-16I 03/10/2000	RPMW-16S RPMW-16S 03/10/2000	RPMW-17D RPMW-17D 03/17/2000	RPMW-17I RPMW-17I 03/14/2000
Benzene	(ug/l)	1.0	5 U	5 U	5 U	5 U	[30]
Ethylbenzene	(ug/l)	5	5 U	2 J	5 U	[30]	[88]
Toluene	(ug/l)	5	5 U	[13]	5 U	5 U	[120]
Xylene (total)	(ug/l)	5	5 U	[14]	5 U	[81]	[140]
Total BTEX	(ug/l)		0.00	29.00	0.00	111.00	378.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 56
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-17S RPMW-17S 03/14/2000
Benzene	(ug/l)	1.0	[1500] D
Ethylbenzene	(ug/l)	5	[3800] D
Toluene	(ug/l)	5	[1700] D
Xylene (total)	(ug/l)	5	[1200] D
Total BTEX	(ug/l)		8200.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 57
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-01I RPMW-01I 03/15/2000	RPMW-01S RPMW-01S 03/15/2000	RPMW-02D RPMW-02D 03/16/2000	RPMW-02I RPMW-02I 03/15/2000	RPMW-02S RPMW-02S 03/15/2000
Naphthalene	(ug/l)	10	10 U	10 U	[3400] D	[7200] D	40 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	200 DJ	420 DJ	40 U
Acenaphthylene	(ug/l)		6 J	10 U	31	25	200
Acenaphthene	(ug/l)	20	13	10 U	[81]	[200] DJ	[96]
Dibenzofuran	(ug/l)		10 U	10 U	4 J	6 J	10 J
Fluorene	(ug/l)	50	10 U	10 U	21	[50]	[82]
Phenanthrene	(ug/l)	50	10 U	10 U	16	36	[120]
Anthracene	(ug/l)	50	10 U	10 U	3 J	5 J	14 J
Fluoranthene	(ug/l)	50	10 U	10 U	2 J	1 J	8 J
Pyrene	(ug/l)	50	2 J	10 U	2 J	1 J	11 J
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	40 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	40 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	40 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	40 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[40] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	40 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	40 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	40 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 57
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-03D RPMW-03D 03/16/2000	RPMW-03I RPMW-03I 03/15/2000	RPMW-03S RPMW-03S 03/15/2000	RPMW-11D RPMW-11D 03/18/2000	RPMW-11I RPMW-11I 03/17/2000
Naphthalene	(ug/l)	10	10 U	[61]	10 U	[54]	[5000] D
2-Methylnaphthalene	(ug/l)		10 U	8 J	10 U	5 J	220
Acenaphthylene	(ug/l)		10 U	7 J	10 U	2 J	200 U
Acenaphthene	(ug/l)	20	10 U	8 J	[26]	3 J	[130] J
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	200 U
Fluorene	(ug/l)	50	10 U	2 J	10 U	2 J	27 J
Phenanthrene	(ug/l)	50	10 U	6 J	10 U	4 J	30 J
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U	200 U
Fluoranthene	(ug/l)	50	10 U	10 U	10 U	10 U	200 U
Pyrene	(ug/l)	50	10 U	2 J	10 U	10 U	200 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	200 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	200 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	200 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	200 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[200] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	200 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	200 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	200 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 57
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-11S RPMW-11S 03/17/2000	RPMW-16I RPMW-16I 03/10/2000	RPMW-16S RPMW-16S 03/10/2000	RPMW-17D RPMW-17D 03/17/2000	RPMW-17I RPMW-17I 03/14/2000
Naphthalene	(ug/l)	10	10 U	6 J	10 U	10 U	[11]
2-Methylnaphthalene	(ug/l)		10 U	2 J	10 U	10 U	1 J
Acenaphthylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	2 J	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	6 J	10 U	10 U	2 J
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	1 J	10 U	10 U	10 U
Pyrene	(ug/l)	50	3 J	1 J	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	10 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 57
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-17S RPMW-17S 03/14/2000
Naphthalene	(ug/l)	10	[220]
2-Methylnaphthalene	(ug/l)		11 J
Acenaphthylene	(ug/l)		40 U
Acenaphthene	(ug/l)	20	40 U
Dibenzofuran	(ug/l)		40 U
Fluorene	(ug/l)	50	40 U
Phenanthrene	(ug/l)	50	40 U
Anthracene	(ug/l)	50	40 U
Fluoranthene	(ug/l)	50	40 U
Pyrene	(ug/l)	50	40 U
Benz(a)anthracene	(ug/l)	0.002	40 U
Chrysene	(ug/l)	0.002	40 U
Benzo(b)fluoranthene	(ug/l)	0.002	40 U
Benzo(k)fluoranthene	(ug/l)	0.002	40 U
Benzo(a)pyrene	(ug/l)	0	[40] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	40 U
Dibenz(a,h)anthracene	(ug/l)		40 U
Benzo(g,h,i)perylene	(ug/l)		40 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-01I RPMW-01I 03/15/2000	RPMW-01S RPMW-01S 03/15/2000	RPMW-02D RPMW-02D 03/16/2000	RPMW-02I RPMW-02I 03/15/2000	RPMW-02S RPMW-02S 03/15/2000
Chloromethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Bromomethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Vinyl chloride	(ug/l)	2	5 U	5 U	50 U	250 U	5 U
Chloroethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Methylene chloride	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Acetone	(ug/l)	50	5 U	5 U	50 U	250 U	5 U
Carbon disulfide	(ug/l)	50	5 U	5 U	50 U	250 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Chloroform	(ug/l)	7	5 U	5 U	50 U	250 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U	5 U	50 U	250 U	5 U
2-Butanone	(ug/l)	50	5 U	5 U	50 U	250 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Bromodichloromethane	(ug/l)	50	5 U	5 U	50 U	250 U	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	5 U	50 U	250 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	50 U	250 U	5 U
Trichloroethene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	5 U	50 U	250 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	50 U	250 U	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-01I RPMW-01I 03/15/2000	RPMW-01S RPMW-01S 03/15/2000	RPMW-02D RPMW-02D 03/16/2000	RPMW-02I RPMW-02I 03/15/2000	RPMW-02S RPMW-02S 03/15/2000
Bromoform	(ug/l)	50	5 U	5 U	50 U	250 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
2-Hexanone	(ug/l)	50	5 U	5 U	50 U	250 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Chlorobenzene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Styrene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Dichlorodifluoromethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Iodomethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Methyltert-butylether	(ug/l)		5 U	5 U	50 U	250 U	5 U
Vinyl Acetate	(ug/l)		5 U	5 U	50 U	250 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
2,2-Dichloropropane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Bromochloromethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Dibromomethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
1,3-Dichloropropane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
Isopropylbenzene	(ug/l)	5	5 U	5 U	[22] J	250 U	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-01I RPMW-01I 03/15/2000	RPMW-01S RPMW-01S 03/15/2000	RPMW-02D RPMW-02D 03/16/2000	RPMW-02I RPMW-02I 03/15/2000	RPMW-02S RPMW-02S 03/15/2000
Bromobenzene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	5 U	50 U	250 U	5 U
n-Propylbenzene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
2-Chlorotoluene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
4-Chlorotoluene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
tert-Butylbenzene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	5 U	5 U	[84]	[250]	5 U
sec-Butylbenzene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
4-Isopropyltoluene	(ug/l)	5	5 U	5 U	50 U	250 U	3 J
n-Butylbenzene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	5 U	50 U	250 U	5 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	10 U	10 U	10 U	40 U
1,2,3-Trichlorobenzene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	5 U	5 U	[34] J	[110] J	4 J
1,1-Dichloropropene	(ug/l)	5	5 U	5 U	50 U	250 U	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-03D RPMW-03D 03/16/2000	RPMW-03I RPMW-03I 03/15/2000	RPMW-03S RPMW-03S 03/15/2000	RPMW-11D RPMW-11D 03/18/2000	RPMW-11I RPMW-11I 03/17/2000
Chloromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	(ug/l)	2	5 U	5 U	5 U	5 U	5 U
Chloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Methylene chloride	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Acetone	(ug/l)	50	11	5 U	5 U	5 U	5 U
Carbon disulfide	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Chloroform	(ug/l)	7	[27]	5 U	5 U	5 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U	5 U	5 U	5 U	5 U
2-Butanone	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	(ug/l)	50	3 J	5 U	5 U	5 U	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	5 U	5 U
Trichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-03D RPMW-03D 03/16/2000	RPMW-03I RPMW-03I 03/15/2000	RPMW-03S RPMW-03S 03/15/2000	RPMW-11D RPMW-11D 03/18/2000	RPMW-11I RPMW-11I 03/17/2000
Bromoform	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
2-Hexanone	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Styrene	(ug/l)	5	5 U	5 U	5 U	5 U	[10]
Dichlorodifluoromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Iodomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Methyltert-butylether	(ug/l)		5 U	5 U	5 U	5 U	5 U
Vinyl Acetate	(ug/l)		5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
2,2-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Dibromomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	(ug/l)	5	5 U	1 J	[10]	1 J	[85]

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-03D RPMW-03D 03/16/2000	RPMW-03I RPMW-03I 03/15/2000	RPMW-03S RPMW-03S 03/15/2000	RPMW-11D RPMW-11D 03/18/2000	RPMW-11I RPMW-11I 03/17/2000
Bromobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	5 U	5 U	5 U	5 U
n-Propylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	[24]
2-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
tert-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	5 U	5 U	1 J	2 J	[170] D
sec-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
4-Isopropyltoluene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
n-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	10 U	10 U	10 U	200 U
1,2,3-Trichlorobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	[26]
1,1-Dichloropropene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-11S RPMW-11S 03/17/2000	RPMW-16I RPMW-16I 03/10/2000	RPMW-16S RPMW-16S 03/10/2000	RPMW-17D RPMW-17D 03/17/2000	RPMW-17I RPMW-17I 03/14/2000
Chloromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	(ug/l)	2	5 U	5 U	5 U	5 U	5 U
Chloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Methylene chloride	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Acetone	(ug/l)	50	5 U	10	5 U	33	[84]
Carbon disulfide	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Chloroform	(ug/l)	7	5 U	[22]	5 U	[29]	[16]
1,2-Dichloroethane	(ug/l)	0.6	5 U	5 U	5 U	5 U	5 U
2-Butanone	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	(ug/l)	50	5 U	2 J	5 U	3 J	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	5 U	5 U
Trichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-11S RPMW-11S 03/17/2000	RPMW-16I RPMW-16I 03/10/2000	RPMW-16S RPMW-16S 03/10/2000	RPMW-17D RPMW-17D 03/17/2000	RPMW-17I RPMW-17I 03/14/2000
Bromoform	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
2-Hexanone	(ug/l)	50	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Styrene	(ug/l)	5	5 U	[9]	5 U	5 U	5 U
Dichlorodifluoromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Iodomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Methyltert-butylether	(ug/l)		5 U	5 U	5 U	5 U	5 U
Vinyl Acetate	(ug/l)		5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
2,2-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Dibromomethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	(ug/l)	5	1 J	5 U	5 U	5 U	1 J

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-11S RPMW-11S 03/17/2000	RPMW-16I RPMW-16I 03/10/2000	RPMW-16S RPMW-16S 03/10/2000	RPMW-17D RPMW-17D 03/17/2000	RPMW-17I RPMW-17I 03/14/2000
Bromobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	5 U	5 U	5 U	5 U
n-Propylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
tert-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	5 U	1 J	5 U	5 U	2 J
sec-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
4-Isopropyltoluene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
n-Butylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	10 U	10 U	10 U	10 U
1,2,3-Trichlorobenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U
1,1-Dichloropropene	(ug/l)	5	5 U	5 U	5 U	5 U	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-17S RPMW-17S 03/14/2000
Chloromethane	(ug/l)	5	5 U
Bromomethane	(ug/l)	5	5 U
Vinyl chloride	(ug/l)	2	5 U
Chloroethane	(ug/l)	5	5 U
Methylene chloride	(ug/l)	5	5 U
Acetone	(ug/l)	50	5 U
Carbon disulfide	(ug/l)	50	5 U
1,1-Dichloroethene	(ug/l)	5	5 U
1,1-Dichloroethane	(ug/l)	5	5 U
Chloroform	(ug/l)	7	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U
2-Butanone	(ug/l)	50	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U
Carbon tetrachloride	(ug/l)	5	5 U
Bromodichloromethane	(ug/l)	50	5 U
1,2-Dichloropropane	(ug/l)	1	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U
Trichloroethene	(ug/l)	5	5 U
Dibromochloromethane	(ug/l)	50	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-17S RPMW-17S 03/14/2000
Bromoform	(ug/l)	50	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U
2-Hexanone	(ug/l)	50	5 U
Tetrachloroethene	(ug/l)	5	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U
Chlorobenzene	(ug/l)	5	5 U
Styrene	(ug/l)	5	5 U
Dichlorodifluoromethane	(ug/l)	5	5 U
Trichlorofluoromethane	(ug/l)	5	5 U
Iodomethane	(ug/l)	5	5 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U
Methyltert-butylether	(ug/l)		5 U
Vinyl Acetate	(ug/l)		5 U
cis-1,2-Dichloroethene	(ug/l)	5	5 U
2,2-Dichloropropane	(ug/l)	5	5 U
Bromochloromethane	(ug/l)	5	5 U
Dibromomethane	(ug/l)	5	5 U
1,3-Dichloropropane	(ug/l)	5	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U
1,2-Dibromoethane	(ug/l)	5	5 U
Isopropylbenzene	(ug/l)	5	[39]

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 58
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-17S RPMW-17S 03/14/2000
Bromobenzene	(ug/l)	5	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U
n-Propylbenzene	(ug/l)	5	5 U
2-Chlorotoluene	(ug/l)	5	5 U
4-Chlorotoluene	(ug/l)	5	5 U
tert-Butylbenzene	(ug/l)	5	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	[140]
sec-Butylbenzene	(ug/l)	5	5 U
4-Isopropyltoluene	(ug/l)	5	3 J
n-Butylbenzene	(ug/l)	5	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U
1,2,4-Trichlorobenzene	(ug/l)	5	40 U
1,2,3-Trichlorobenzene	(ug/l)	5	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	[35]
1,1-Dichloropropene	(ug/l)	5	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-01I RPMW-01I 03/15/2000	RPMW-01S RPMW-01S 03/15/2000	RPMW-02D RPMW-02D 03/16/2000	RPMW-02I RPMW-02I 03/15/2000	RPMW-02S RPMW-02S 03/15/2000
Phenol	(ug/l)	1	10 U	10 U	[4] J	10 U	40 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U	10 U	10 U	10 U	40 U
2-Chlorophenol	(ug/l)	1	10 U	10 U	10 U	10 U	40 U
1,3-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	40 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	40 U
1,2-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	40 U
2-Methylphenol	(ug/l)	1	10 U	10 U	[1] J	10 U	40 U
Propane,2,2'-oxybis[1-chloro	(ug/l)		10 U	10 U	10 U	10 U	40 U
4-Methylphenol	(ug/l)	1	10 U	10 U	[1] J	10 U	40 U
N-Nitrosodipropylamine	(ug/l)		10 U	10 U	10 U	10 U	40 U
Hexachloroethane	(ug/l)	5	10 U	10 U	10 U	10 U	40 U
Nitrobenzene	(ug/l)	0.4	10 U	10 U	10 U	10 U	40 U
Isophorone	(ug/l)	50	10 U	10 U	10 U	10 U	40 U
2-Nitrophenol	(ug/l)	1	10 U	10 U	10 U	10 U	40 U
2,4-Dimethylphenol	(ug/l)	50	10 U	10 U	10 U	10 U	40 U
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U	10 U	10 U	10 U	40 U
2,4-Dichlorophenol	(ug/l)	5	10 U	10 U	10 U	10 U	40 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	10 U	10 U	10 U	40 U
4-Chloroaniline	(ug/l)	5	10 U	10 U	10 U	10 U	40 U
Hexachlorobutadiene	(ug/l)	0.5	10 U	10 U	10 U	10 U	40 U
4-Chloro-3-methylphenol	(ug/l)	1	10 U	10 U	10 U	10 U	40 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-01I RPMW-01I 03/15/2000	RPMW-01S RPMW-01S 03/15/2000	RPMW-02D RPMW-02D 03/16/2000	RPMW-02I RPMW-02I 03/15/2000	RPMW-02S RPMW-02S 03/15/2000
Hexachlorocyclopentadiene	(ug/l)	5	10 U	10 U	10 U	10 U	40 U
2,4,6-Trichlorophenol	(ug/l)	1	10 U	10 U	10 U	10 U	40 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U	20 U	20 U	20 U	80 U
2-Chloronaphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	40 U
2-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	80 U
Dimethyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	40 U
2,6-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U	10 U	40 U
3-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	80 U
2,4-Dinitrophenol	(ug/l)	10	20 U	20 U	20 U	20 U	80 U
4-Nitrophenol	(ug/l)	1	20 U	20 U	20 U	20 U	80 U
2,4-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U	10 U	40 U
Diethyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	40 U
4-Chlorophenyl phenyl ether	(ug/l)		10 U	10 U	10 U	10 U	40 U
4-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	80 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U	20 U	20 U	20 U	80 U
N-Nitrosodiphenylamine	(ug/l)	50	10 U	10 U	10 U	10 U	40 U
Hexachlorobenzene	(ug/l)	0.04	10 U	10 U	10 U	10 U	40 U
Pentachlorophenol	(ug/l)	1	20 U	20 U	20 U	20 U	80 U
Carbazole	(ug/l)		10 U	10 U	10	27	11 J
Di-n-butyl phthalate	(ug/l)	50	10 U	10 U	10	10 U	40 U
Butyl benzyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	40 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-01I RPMW-01I 03/15/2000	RPMW-01S RPMW-01S 03/15/2000	RPMW-02D RPMW-02D 03/16/2000	RPMW-02I RPMW-02I 03/15/2000	RPMW-02S RPMW-02S 03/15/2000
3,3-Dichlorobenzidine	(ug/l)	5	10 U	10 U	10 U	10 U	40 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	[6] J	10 U	3 J	10 U	40 U
Di-n-octyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	40 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-03D RPMW-03D 03/16/2000	RPMW-03I RPMW-03I 03/15/2000	RPMW-03S RPMW-03S 03/15/2000	RPMW-11D RPMW-11D 03/18/2000	RPMW-11I RPMW-11I 03/17/2000
Phenol	(ug/l)	1	10 U	10 U	10 U	10 U	200 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U	10 U	10 U	10 U	200 U
2-Chlorophenol	(ug/l)	1	10 U	10 U	10 U	10 U	200 U
1,3-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	200 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	200 U
1,2-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	200 U
2-Methylphenol	(ug/l)	1	10 U	10 U	10 U	10 U	200 U
Propane,2,2'-oxybis[1-chloro	(ug/l)		10 U	10 U	10 U	10 U	200 U
4-Methylphenol	(ug/l)	1	10 U	10 U	10 U	10 U	200 U
N-Nitrosodipropylamine	(ug/l)		10 U	10 U	10 U	10 U	200 U
Hexachloroethane	(ug/l)	5	10 U	10 U	10 U	10 U	200 U
Nitrobenzene	(ug/l)	0.4	10 U	10 U	10 U	10 U	200 U
Isophorone	(ug/l)	50	10 U	10 U	10 U	10 U	200 U
2-Nitrophenol	(ug/l)	1	10 U	10 U	10 U	10 U	200 U
2,4-Dimethylphenol	(ug/l)	50	10 U	10 U	10 U	10 U	200 U
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U	10 U	10 U	10 U	200 U
2,4-Dichlorophenol	(ug/l)	5	10 U	10 U	10 U	10 U	200 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	10 U	10 U	10 U	200 U
4-Chloroaniline	(ug/l)	5	10 U	10 U	10 U	10 U	200 U
Hexachlorobutadiene	(ug/l)	0.5	10 U	10 U	10 U	10 U	200 U
4-Chloro-3-methylphenol	(ug/l)	1	10 U	10 U	10 U	10 U	200 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-03D RPMW-03D 03/16/2000	RPMW-03I RPMW-03I 03/15/2000	RPMW-03S RPMW-03S 03/15/2000	RPMW-11D RPMW-11D 03/18/2000	RPMW-11I RPMW-11I 03/17/2000
Hexachlorocyclopentadiene	(ug/l)	5	10 U	10 U	10 U	10 U	200 U
2,4,6-Trichlorophenol	(ug/l)	1	10 U	10 U	10 U	10 U	200 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U	20 U	20 U	20 U	400 U
2-Chloronaphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	200 U
2-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	400 U
Dimethyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	200 U
2,6-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U	10 U	200 U
3-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	400 U
2,4-Dinitrophenol	(ug/l)	10	20 U	20 U	20 U	20 U	400 U
4-Nitrophenol	(ug/l)	1	20 U	20 U	20 U	20 U	400 U
2,4-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U	10 U	200 U
Diethyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	200 U
4-Chlorophenyl phenyl ether	(ug/l)		10 U	10 U	10 U	10 U	200 U
4-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	400 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U	20 U	20 U	20 U	400 U
N-Nitrosodiphenylamine	(ug/l)	50	10 U	10 U	10 U	10 U	200 U
Hexachlorobenzene	(ug/l)	0.04	10 U	10 U	10 U	10 U	200 U
Pentachlorophenol	(ug/l)	1	20 U	20 U	20 U	20 U	400 U
Carbazole	(ug/l)		10 U	10 U	10 U	10 U	200 U
Di-n-butyl phthalate	(ug/l)	50	12	10 U	10 U	10 U	200 U
Butyl benzyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	200 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-03D RPMW-03D 03/16/2000	RPMW-03I RPMW-03I 03/15/2000	RPMW-03S RPMW-03S 03/15/2000	RPMW-11D RPMW-11D 03/18/2000	RPMW-11I RPMW-11I 03/17/2000
3,3-Dichlorobenzidine	(ug/l)	5	10 U	10 U	10 U	10 U	200 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	[9] J	10 U	10 U	1 J	200 U
Di-n-octyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	200 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-11S RPMW-11S 03/17/2000	RPMW-16I RPMW-16I 03/10/2000	RPMW-16S RPMW-16S 03/10/2000	RPMW-17D RPMW-17D 03/17/2000	RPMW-17I RPMW-17I 03/14/2000
Phenol	(ug/l)	1	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	(ug/l)	1	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	(ug/l)	3	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	(ug/l)	1	10 U	10 U	10 U	10 U	10 U
Propane,2,2'-oxybis[1-chloro	(ug/l)		10 U	10 U	10 U	10 U	10 U
4-Methylphenol	(ug/l)	1	10 U	10 U	10 U	10 U	10 U
N-Nitrosodipropylamine	(ug/l)		10 U	10 U	10 U	10 U	10 U
Hexachloroethane	(ug/l)	5	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	(ug/l)	0.4	10 U	10 U	10 U	10 U	10 U
Isophorone	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	(ug/l)	1	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	(ug/l)	50	10 U	10 U	10 U	8 J	10 U
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	(ug/l)	5	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	(ug/l)	5	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	(ug/l)	0.5	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	(ug/l)	1	10 U	10 U	10 U	10 U	10 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-11S RPMW-11S 03/17/2000	RPMW-16I RPMW-16I 03/10/2000	RPMW-16S RPMW-16S 03/10/2000	RPMW-17D RPMW-17D 03/17/2000	RPMW-17I RPMW-17I 03/14/2000
Hexachlorocyclopentadiene	(ug/l)	5	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	(ug/l)	1	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U	20 U	20 U	20 U	20 U
2-Chloronaphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	20 U
Dimethyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	20 U
2,4-Dinitrophenol	(ug/l)	10	20 U	20 U	20 U	20 U	20 U
4-Nitrophenol	(ug/l)	1	20 U	20 U	20 U	20 U	20 U
2,4-Dinitrotoluene	(ug/l)	5	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	(ug/l)	50	10 U	10 U	10 U	2 J	10 U
4-Chlorophenyl phenyl ether	(ug/l)		10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	(ug/l)	5	20 U	20 U	20 U	20 U	20 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U	20 U	20 U	20 U	20 U
N-Nitrosodiphenylamine	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	(ug/l)	0.04	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	(ug/l)	1	20 U	20 U	20 U	20 U	20 U
Carbazole	(ug/l)		10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	10 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-11S RPMW-11S 03/17/2000	RPMW-16I RPMW-16I 03/10/2000	RPMW-16S RPMW-16S 03/10/2000	RPMW-17D RPMW-17D 03/17/2000	RPMW-17I RPMW-17I 03/14/2000
3,3-Dichlorobenzidine	(ug/l)	5	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	2 J	1 J	10 U	[12]	1 J
Di-n-octyl phthalate	(ug/l)	50	10 U	10 U	10 U	10 U	10 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-17S RPMW-17S 03/14/2000
Phenol	(ug/l)	1	40 U
Bis(2-chloroethyl)ether	(ug/l)	1	40 U
2-Chlorophenol	(ug/l)	1	40 U
1,3-Dichlorobenzene	(ug/l)	3	40 U
1,4-Dichlorobenzene	(ug/l)	3	40 U
1,2-Dichlorobenzene	(ug/l)	3	40 U
2-Methylphenol	(ug/l)	1	40 U
Propane,2,2'-oxybis[1-chloro	(ug/l)		40 U
4-Methylphenol	(ug/l)	1	40 U
N-Nitrosodipropylamine	(ug/l)		40 U
Hexachloroethane	(ug/l)	5	40 U
Nitrobenzene	(ug/l)	0.4	40 U
Isophorone	(ug/l)	50	40 U
2-Nitrophenol	(ug/l)	1	40 U
2,4-Dimethylphenol	(ug/l)	50	40 U
Bis(2-chloroethoxy)methane	(ug/l)	5	40 U
2,4-Dichlorophenol	(ug/l)	5	40 U
1,2,4-Trichlorobenzene	(ug/l)	5	40 U
4-Chloroaniline	(ug/l)	5	40 U
Hexachlorobutadiene	(ug/l)	0.5	40 U
4-Chloro-3-methylphenol	(ug/l)	1	40 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-17S RPMW-17S 03/14/2000
Hexachlorocyclopentadiene	(ug/l)	5	40 U
2,4,6-Trichlorophenol	(ug/l)	1	40 U
2,4,5-Trichlorophenol	(ug/l)	1	80 U
2-Chloronaphthalene	(ug/l)	10	40 U
2-Nitroaniline	(ug/l)	5	80 U
Dimethyl phthalate	(ug/l)	50	40 U
2,6-Dinitrotoluene	(ug/l)	5	40 U
3-Nitroaniline	(ug/l)	5	80 U
2,4-Dinitrophenol	(ug/l)	10	80 U
4-Nitrophenol	(ug/l)	1	80 U
2,4-Dinitrotoluene	(ug/l)	5	40 U
Diethyl phthalate	(ug/l)	50	40 U
4-Chlorophenyl phenyl ether	(ug/l)		40 U
4-Nitroaniline	(ug/l)	5	80 U
4,6-Dinitro-2-methylphenol	(ug/l)		80 U
N-Nitrosodiphenylamine	(ug/l)	50	40 U
Hexachlorobenzene	(ug/l)	0.04	40 U
Pentachlorophenol	(ug/l)	1	80 U
Carbazole	(ug/l)		40 U
Di-n-butyl phthalate	(ug/l)	50	40 U
Butyl benzyl phthalate	(ug/l)	50	40 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 59
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-17S RPMW-17S 03/14/2000
3,3-Dichlorobenzidine	(ug/l)	5	40 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	40 U
Di-n-octyl phthalate	(ug/l)	50	40 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 60
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-01I RPMW-01I 03/15/2000	RPMW-01S RPMW-01S 03/15/2000	RPMW-02D RPMW-02D 03/16/2000	RPMW-02I RPMW-02I 03/15/2000	RPMW-02S RPMW-02S 03/15/2000
Aluminum	(ug/l)		145 B	28.4 B	202 B	10 U	10 U
Antimony	(ug/l)	3	3 U	[7] B	[3.6] B	3 U	3 U
Arsenic	(ug/l)	25	4 U	8.3 B	4 U	4 U	6.6 B
Barium	(ug/l)	1000	16.9 B	14.9 B	51.4 BE	29.2 BE	29.8 BE
Beryllium	(ug/l)	3	2 U	2 U	2 U	2 U	2 U
Cadmium	(ug/l)	5	0.4 U	0.9 B	0.47 B	0.4 U	0.43 B
Calcium	(ug/l)		110000	293000	224000	172000	159000
Chromium	(ug/l)	50	2 U	2 U	2 U	2 U	2 U
Cobalt	(ug/l)		1.8 B	6.6 B	2.4 B	0.53 B	2.1 B
Copper	(ug/l)	200	11 B	5 U	6.7 B	5 U	5 U
Iron	(ug/l)	300	[666]	53.6 B	[1120] E	20.4 BE	[483] E
Lead	(ug/l)	25	14.1	2.3 U	5.8 B	2.3 U	2.3 U
Magnesium	(ug/l)	35000	[50500]	[658000]	[397000] E	[178000] E	[220000] E
Manganese	(ug/l)	300	49.7 B	6.6 B	[414] E	142 E	[664] E
Mercury	(ug/l)	0.7	0.14 U	0.14 U	0.15 U	0.15 U	0.14 U
Nickel	(ug/l)	100	3.1 B	19.4 B	2.2 B	1 B	7.3 B
Potassium	(ug/l)		24400	483000	259000 E	92800 E	129000 E
Selenium	(ug/l)	10	4 U	6.3 B	4 U	4 U	4 U
Silver	(ug/l)	50	2 U	7.4 B	2 U	2 U	2 U
Sodium	(ug/l)	20000	[479000]	[9080000]	[4530000]	[1860000]	[2420000]
Thallium	(ug/l)	0.5	[3.4] B	[15.6]	[6] B	[4.7] B	[5.8] B

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 60
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-01I RPMW-01I 03/15/2000	RPMW-01S RPMW-01S 03/15/2000	RPMW-02D RPMW-02D 03/16/2000	RPMW-02I RPMW-02I 03/15/2000	RPMW-02S RPMW-02S 03/15/2000
Vanadium	(ug/l)		120	384	350 E	272 E	295 E
Zinc	(ug/l)	2000	25.1 B	121	80.6	4 U	4 U
Cyanide, total	(ug/l)	200	[688]	4 U	75	4 U	176
Cyanide, Free	(ug/l)		4 U	4 U	4 U	4 U	4 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 60
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-03D RPMW-03D 03/16/2000	RPMW-03I RPMW-03I 03/15/2000	RPMW-03S RPMW-03S 03/15/2000	RPMW-11D RPMW-11D 03/18/2000	RPMW-11I RPMW-11I 03/17/2000
Aluminum	(ug/l)		411	10 U	55.9 B	3590	26.7 B
Antimony	(ug/l)	3	3 U	[3.6] B	3 U	3 U	3 U
Arsenic	(ug/l)	25	4 U	6.7 B	16.2	4 U	4 U
Barium	(ug/l)	1000	28.5 BE	35.8 B	11.5 B	620	32.7 B
Beryllium	(ug/l)	3	2 U	2 U	2 U	2 U	2 U
Cadmium	(ug/l)	5	2.6 B	0.4 U	0.47 B	0.4 U	0.4 U
Calcium	(ug/l)		44100	264000	116000	1650000	145000
Chromium	(ug/l)	50	2 U	2 U	2 U	10.6 B	2 U
Cobalt	(ug/l)		2.4 B	1.5 B	1.7 B	1.4 B	0.3 U
Copper	(ug/l)	200	29.2 B	5 U	5 U	38.2	9.2 B
Iron	(ug/l)	300	[464] E	70.2 B	137 B	[1670] E	86.1 B
Lead	(ug/l)	25	9.8 B	2.3 U	2.3 U	2.3 U	2.3 U
Magnesium	(ug/l)	35000	34300 E	[541000]	[159000]	3410 E	[221000]
Manganese	(ug/l)	300	28.5 BE	44.6 B	59.1	57.2 E	16.3 B
Mercury	(ug/l)	0.7	0.15 U	0.14 U	0.14 U	0.14 U	0.13 U
Nickel	(ug/l)	100	3.9 B	0.5 U	3 B	0.5 U	6.1 B
Potassium	(ug/l)		15500 E	338000	102000	792000 E	126000
Selenium	(ug/l)	10	4 U	6 B	4 B	4 U	4 U
Silver	(ug/l)	50	2 U	2 U	2 U	19.5 B	2.4 B
Sodium	(ug/l)	20000	[345000]	[6910000]	[1570000]	[3540000] E	[2010000]
Thallium	(ug/l)	0.5	3 U	[10.2]	[4.7] B	3 U	3 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 60
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-03D RPMW-03D 03/16/2000	RPMW-03I RPMW-03I 03/15/2000	RPMW-03S RPMW-03S 03/15/2000	RPMW-11D RPMW-11D 03/18/2000	RPMW-11I RPMW-11I 03/17/2000
Vanadium	(ug/l)		89.1 E	371	266	0.5 U	0.5 U
Zinc	(ug/l)	2000	48.8 B	4 U	4 U	46.8 B	4 U
Cyanide, total	(ug/l)	200	4 U	8.3 B	159	4 U	6.2 B
Cyanide, Free	(ug/l)		4 U	4 U	4 U	182	4.6 B

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 60
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-11S RPMW-11S 03/17/2000	RPMW-16I RPMW-16I 03/10/2000	RPMW-16S RPMW-16S 03/10/2000	RPMW-17D RPMW-17D 03/17/2000	RPMW-17I RPMW-17I 03/14/2000
Aluminum	(ug/l)		322	342 E*	525 E*	549	48.3 B
Antimony	(ug/l)	3	3 U	3 U	3 U	3 U	3 U
Arsenic	(ug/l)	25	4 U	8.3 B	4 U	4 U	4 U
Barium	(ug/l)	1000	30.3 B	23.6 B	49.8 B	35.2 B	150 B
Beryllium	(ug/l)	3	2 U	2 U	2 U	2 U	2 U
Cadmium	(ug/l)	5	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Calcium	(ug/l)		185000	39900	52500	26100	164000
Chromium	(ug/l)	50	2 U	35	2 U	32	37.6
Cobalt	(ug/l)		1.2 B	3.4 B	1.1 B	4.9 B	0.94 B
Copper	(ug/l)	200	9.9 B	37.7 B	21.1 B	109	22.3 B
Iron	(ug/l)	300	[28500]	[437] E	[650] E	[1110]	122 B
Lead	(ug/l)	25	7.8 B	13.3	10.1	[52.4]	20.5
Magnesium	(ug/l)	35000	[199000]	2130	10600	13800	4180
Manganese	(ug/l)	300	[456]	10.9 B	103	18.2 B	2.3 B
Mercury	(ug/l)	0.7	0.15 U	0.14 U	0.14 U	0.14 U	0.14 U
Nickel	(ug/l)	100	6.1 B	5 B	3.4 B	23 B	2.1 B
Potassium	(ug/l)		120000	5400	8810	11100	130000
Selenium	(ug/l)	10	4 U	4 U	4 U	4 U	5.4 B
Silver	(ug/l)	50	2 U	2.3 B	2 U	2 U	2 U
Sodium	(ug/l)	20000	[1800000]	18600	[54400]	[105000]	[297000]
Thallium	(ug/l)	0.5	3 U	3 U	3 U	3 U	3 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 60
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-11S RPMW-11S 03/17/2000	RPMW-16I RPMW-16I 03/10/2000	RPMW-16S RPMW-16S 03/10/2000	RPMW-17D RPMW-17D 03/17/2000	RPMW-17I RPMW-17I 03/14/2000
Vanadium	(ug/l)		2.8 B	24.3 B	2.9 B	4.7 B	12.4 B
Zinc	(ug/l)	2000	4 U	43.9 B	24.8 B	194	15.2 B
Cyanide, total	(ug/l)	200	[537]	5.5 B	7.9 B	4 U	8.9 B
Cyanide, Free	(ug/l)		7.9 B	4 U	4 U	4 U	4 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 60
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-17S RPMW-17S 03/14/2000
Aluminum	(ug/l)		11.2 B
Antimony	(ug/l)	3	3 U
Arsenic	(ug/l)	25	4 U
Barium	(ug/l)	1000	10.4 B
Beryllium	(ug/l)	3	2 U
Cadmium	(ug/l)	5	0.4 U
Calcium	(ug/l)		77100
Chromium	(ug/l)	50	2 U
Cobalt	(ug/l)		0.7 B
Copper	(ug/l)	200	5 U
Iron	(ug/l)	300	33.4 B
Lead	(ug/l)	25	2.3 U
Magnesium	(ug/l)	35000	[72400]
Manganese	(ug/l)	300	163
Mercury	(ug/l)	0.7	0.14 U
Nickel	(ug/l)	100	1 B
Potassium	(ug/l)		30200
Selenium	(ug/l)	10	6.1 B
Silver	(ug/l)	50	2 U
Sodium	(ug/l)	20000	[506000]
Thallium	(ug/l)	0.5	3 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 60
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS AND CYANIDE

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-17S RPMW-17S 03/14/2000
Vanadium	(ug/l)		112
Zinc	(ug/l)	2000	4 U
Cyanide, total	(ug/l)	200	30.7
Cyanide, Free	(ug/l)		4 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 61
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-01I RPMW-01I 03/15/2000	RPMW-01S RPMW-01S 03/15/2000	RPMW-02D RPMW-02D 03/16/2000	RPMW-02I RPMW-02I 03/15/2000	RPMW-02S RPMW-02S 03/15/2000
Chloride	(ug/l)	250000	[970000]	[17000000]	[9400000]	[4400000]	[5500000]
Total Dissolved Solids	(ug/l)		2000000	26000000	15000000	7400000	9300000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 61
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-03D RPMW-03D 03/16/2000	RPMW-03I RPMW-03I 03/15/2000	RPMW-03S RPMW-03S 03/15/2000	RPMW-11D RPMW-11D 03/18/2000	RPMW-11I RPMW-11I 03/17/2000
Chloride	(ug/l)	250000	[710000]	[12000000]	[3000000]	[15000000]	8000
Total Dissolved Solids	(ug/l)		1200000	19000000	5400000	29000000	8200000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 61
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-11S RPMW-11S 03/17/2000	RPMW-16I RPMW-16I 03/10/2000	RPMW-16S RPMW-16S 03/10/2000	RPMW-17D RPMW-17D 03/17/2000	RPMW-17I RPMW-17I 03/14/2000
Chloride	(ug/l)	250000	[4500000]	40000	100000	200000	---
Total Dissolved Solids	(ug/l)		7300000	230000	440000	440000	1500000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 61
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
MONITORING WELL SAMPLE RESULTS
CHLORIDE AND TOTAL DISSOLVED SOLIDS

PERIOD: From 03/10/2000 thru 03/18/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPMW-17S RPMW-17S 03/14/2000
Chloride	(ug/l)	250000	[1240000]
Total Dissolved Solids	(ug/l)		2400000

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 62
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-01 RPGP-01 (46-50) 02/08/2000	RPGP-01 RPGP-01 (26-30) 02/08/2000	RPGP-01 RPGP-01 (6-10) 02/08/2000	RPGP-02 RPGP-02 (46-50) 02/22/2000	RPGP-02 RPGP-02 (26-30) 02/22/2000
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Total BTEX	(ug/l)		0.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 62
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-02 RPGP-02 (6-10) 02/22/2000	RPGP-03 RPGP-03 (46-50) 02/15/2000	RPGP-03 RPGP-03 (26-30) 02/15/2000	RPGP-03 RPGP-03 (6-10) 02/15/2000	RPGP-04 RPGP-04 (26-30) 02/03/2000
Benzene	(ug/l)	1.0	1 U	1 U	[280]	[3]	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	[780]	2	[9]
Toluene	(ug/l)	5	1 U	1 U	10 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	[58]	1 U	4
Total BTEX	(ug/l)		0.00	0.00	1118.00	5.00	13.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 62
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-04 RPGP-04 (6-10) 02/03/2000	RPGP-05 RPGP-05 (26-30) 02/02/2000	RPGP-05 RPGP-05 (6-10) 02/02/2000	RPGP-06 RPGP-06 (26-30) 02/01/2000	RPGP-06 RPGP-06 (6-10) 02/01/2000
Benzene	(ug/l)	1.0	[1]	[8900]	[2600]	10 U	1000 U
Ethylbenzene	(ug/l)	5	1 U	[960]	[300]	[170]	[9900]
Toluene	(ug/l)	5	1 U	100 U	100 U	[44]	[2700]
Xylene (total)	(ug/l)	5	1	[320]	[190]	[410]	[6000]
Total BTEX	(ug/l)		2.00	10180.00	3090.00	624.00	18600.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 62
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-06 RPGP-06 (46-50) 02/02/2000	RPGP-07 RPGP-07 (6-10) 02/01/2000	RPGP-07 RPGP-07 (26-30) 02/01/2000	RPGP-08 RPGP-08 (6-10) 01/28/2000	RPGP-08 RPGP-08 (26-30) 01/28/2000
Benzene	(ug/l)	1.0	5 U	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	5 U	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	5 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 J	1 U	1 U	1 U	1 U
Total BTEX	(ug/l)		1.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 62
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-08 RPGP-08 (46-50) 01/28/2000	RPGP-09 RPGP-09 (86-90) 01/24/2000	RPGP-09 RPGP-09 (66-70) 01/24/2000	RPGP-09 RPGP-09 (46-50) 01/24/2000	RPGP-09 RPGP-09 (26-30) 01/24/2000
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Total BTEX	(ug/l)		0.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 62
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-09 RPGP-09 (6-10) 01/24/2000	RPGP-10 RPGP-10 (86-90) 02/24/2000	RPGP-10 RPGP-10 (66-70) 02/24/2000	RPGP-10 RPGP-10 (46-50) 02/24/2000	RPGP-10 RPGP-10 (26-30) 02/24/2000
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1	1 U	1 U	1 U
Total BTEX	(ug/l)		0.00	1.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 62
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-10 RPGP-10 (6-10) 02/24/2000	RPGP-11 RPGP-11 (26-30) 03/03/2000	RPGP-11 RPGP-11 (6-10) 03/03/2000	RPGP-12 RPGP-12 (46-50) 02/14/2000	RPGP-12 RPGP-12 (26-30) 02/14/2000
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Total BTEX	(ug/l)		0.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 62
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-12 RPGP-12 (6-10) 02/14/2000	RPGP-13 RPGP-13 (46-50) 02/04/2000	RPGP-13 RPGP-13 (26-30) 02/04/2000	RPGP-13 RPGP-13 (6-10) 02/04/2000	RPGP-14 RPGP-14 (86-90) 01/27/2000
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Total BTEX	(ug/l)		0.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 62
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-14 RPGP-14 (66-70) 01/27/2000	RPGP-14 RPGP-14 (46-50) 01/27/2000	RPGP-14 RPGP-14 (26-30) 01/27/2000	RPGP-14 RPGP-14 (6-10) 01/27/2000	RPGP-15 RPGP-15(86-90) 01/26/2000
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	1 U	1 U	1
Total BTEX	(ug/l)		0.00	0.00	0.00	0.00	1.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 62
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-15 RPGP-15(66-70) 01/26/2000	RPGP-15 RPGP-15(46-50) 01/26/2000	RPGP-15 RPGP-15(26-30) 01/26/2000	RPGP-15 RPGP-15(6-10) 01/26/2000	RPGP-16 RPGP-16 (71-75) 01/11/2000
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Total BTEX	(ug/l)		0.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 62
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-16 RPGP-16 (51-55) 01/11/2000	RPGP-16 RPGP-16 (31-35) 01/11/2000	RPGP-16 RPGP-16 (11-15) 01/11/2000
Benzene	(ug/l)	1.0	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	1
Toluene	(ug/l)	5	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	2
Total BTEX	(ug/l)		0.00	0.00	3.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 63
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-01 RPGP-01 (46-50) 02/08/2000	RPGP-01 RPGP-01 (6-10) 02/08/2000	RPGP-01 RPGP-01 (26-30) 02/09/2000	RPGP-02 RPGP-02 (46-50) 02/22/2000	RPGP-02 RPGP-02 (26-30) 02/22/2000
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	1 J	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		0.00	0.00	1.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 63
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-02 RPGP-02 (6-10) 02/22/2000	RPGP-03 RPGP-03 (46-50) 02/15/2000	RPGP-03 RPGP-03 (26-30) 02/15/2000	RPGP-03 RPGP-03 (6-10) 02/15/2000	RPGP-04 RPGP-04 (26-30) 02/03/2000
Naphthalene	(ug/l)	10	10 U	10 U	[1200]	5 J	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	87 J	2 J	10 U
Acenaphthylene	(ug/l)		10 U	10 U	100 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	2 J	[220]	7 J	10 U
Dibenzofuran	(ug/l)		10 U	10 U	100 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	[51] J	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	48 J	1 J	10 U
Anthracene	(ug/l)	50	10 U	10 U	100 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	100 U	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	100 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	100 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	100 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	100 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	100 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[100] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	100 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	100 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	100 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		0.00	2.00	1606.00	15.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 63
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-04 RPGP-04 (6-10) 02/03/2000	RPGP-05 RPGP-05 (26-30) 02/02/2000	RPGP-05 RPGP-05 (6-10) 02/02/2000	RPGP-06 RPGP-06 (26-30) 02/01/2000	RPGP-06 RPGP-06 (6-10) 02/01/2000
Naphthalene	(ug/l)	10	3 J	[380]	[62]	[58]	[720]
2-Methylnaphthalene	(ug/l)		10 U	39 J	10 U	13	120
Acenaphthylene	(ug/l)		10 U	21 J	10 U	10 U	40 J
Acenaphthene	(ug/l)	20	2 J	[28] J	2 J	10 U	[54]
Dibenzofuran	(ug/l)		10 U	40 U	10 U	10 U	50 U
Fluorene	(ug/l)	50	10 U	15 J	10 U	2 J	25 J
Phenanthrene	(ug/l)	50	10 U	22 J	10 U	6 J	35 J
Anthracene	(ug/l)	50	10 U	6 J	10 U	10 U	12 J
Fluoranthene	(ug/l)	50	10 U	40 U	10 U	2 J	50 U
Pyrene	(ug/l)	50	10 U	40 U	10 U	2 J	6 J
Benz(a)anthracene	(ug/l)	0.002	10 U	40 U	10 U	10 U	50 U
Chrysene	(ug/l)	0.002	10 U	40 U	10 U	10 U	50 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	40 U	10 U	10 U	50 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	40 U	10 U	10 U	50 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[40] U	[10] U	[10] U	[50] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	40 U	10 U	10 U	50 U
Dibenz(a,h)anthracene	(ug/l)		10 U	40 U	10 U	10 U	50 U
Benzo(g,h,i)perylene	(ug/l)		10 U	40 U	10 U	10 U	50 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		5.00	511.00	64.00	83.00	1012.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 63
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-06 RPGP-06 (46-50) 02/02/2000	RPGP-07 RPGP-07 (6-10) 02/01/2000	RPGP-07 RPGP-07 (26-30) 02/01/2000	RPGP-08 RPGP-08 (6-10) 01/28/2000	RPGP-08 RPGP-08 (26-30) 01/28/2000
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 63
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-08 RPGP-08 (46-50) 01/28/2000	RPGP-09 RPGP-09 (86-90) 01/24/2000	RPGP-09 RPGP-09 (66-70) 01/24/2000	RPGP-09 RPGP-09 (46-50) 01/24/2000	RPGP-09 RPGP-09 (26-30) 01/24/2000
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 63
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-09 RPGP-09 (6-10) 01/24/2000	RPGP-10 RPGP-10 (86-90) 02/24/2000	RPGP-10 RPGP-10 (66-70) 02/24/2000	RPGP-10 RPGP-10 (46-50) 02/24/2000	RPGP-10 RPGP-10 (26-30) 02/24/2000
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	2 J	10 U	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	3 J	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	3 J	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	[2] J	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	[2] J	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	[2] J	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[1] J	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		7.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		15.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 63
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-10 RPGP-10 (6-10) 02/24/2000	RPGP-11 RPGP-11 (26-30) 03/03/2000	RPGP-11 RPGP-11 (6-10) 03/03/2000	RPGP-12 RPGP-12 (46-50) 02/14/2000	RPGP-12 RPGP-12 (26-30) 02/14/2000
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	1 J	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	1 J	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	[1] J	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	[1] J	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	[2] J	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		4.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		6.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 63
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-12 RPGP-12 (6-10) 02/14/2000	RPGP-13 RPGP-13 (46-50) 02/04/2000	RPGP-13 RPGP-13 (26-30) 02/04/2000	RPGP-13 RPGP-13 (6-10) 02/04/2000	RPGP-14 RPGP-14 (86-90) 01/27/2000
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 63
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-14 RPGP-14 (66-70) 01/27/2000	RPGP-14 RPGP-14 (46-50) 01/27/2000	RPGP-14 RPGP-14 (26-30) 01/27/2000	RPGP-14 RPGP-14 (6-10) 01/27/2000	RPGP-15 RPGP-15(86-90) 01/26/2000
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 63
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-15 RPGP-15(66-70) 01/26/2000	RPGP-15 RPGP-15(46-50) 01/26/2000	RPGP-15 RPGP-15(26-30) 01/26/2000	RPGP-15 RPGP-15(6-10) 01/26/2000	RPGP-16 RPGP-16 (71-75) 01/11/2000
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 63
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/11/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-16 RPGP-16 (51-55) 01/11/2000	RPGP-16 RPGP-16 (31-35) 01/11/2000	RPGP-16 RPGP-16 (11-15) 01/11/2000
Naphthalene	(ug/l)	10	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00
Total PAHs	(ug/l)		0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 64
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 02/01/2000 thru 02/02/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-06 RPGP-06 (26-30) 02/01/2000	RPGP-06 RPGP-06 (6-10) 02/01/2000	RPGP-06 RPGP-06 (46-50) 02/02/2000
Chloromethane	(ug/l)	5	10 U	1000 U	5 U
Bromomethane	(ug/l)	5	10 U	1000 U	5 U
Vinyl chloride	(ug/l)	2	10 U	1000 U	5 U
Chloroethane	(ug/l)	5	10 U	1000 U	5 U
Methylene chloride	(ug/l)	5	10 U	1000 U	5 U
Acetone	(ug/l)	50	10 U	1000 U	5 U
Carbon disulfide	(ug/l)	50	10 U	1000 U	5 U
1,1-Dichloroethene	(ug/l)	5	10 U	1000 U	5 U
1,1-Dichloroethane	(ug/l)	5	10 U	1000 U	5 U
Chloroform	(ug/l)	7	10 U	1000 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	10 U	1000 U	5 U
2-Butanone	(ug/l)	50	10 U	1000 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	10 U	1000 U	5 U
Carbon tetrachloride	(ug/l)	5	10 U	1000 U	5 U
Bromodichloromethane	(ug/l)	50	10 U	1000 U	5 U
1,2-Dichloropropane	(ug/l)	1	10 U	1000 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	10 U	1000 U	5 U
Trichloroethene	(ug/l)	5	10 U	1000 U	5 U
Dibromochloromethane	(ug/l)	50	10 U	1000 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	10 U	1000 U	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	10 U	1000 U	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 64
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 02/01/2000 thru 02/02/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-06 RPGP-06 (26-30) 02/01/2000	RPGP-06 RPGP-06 (6-10) 02/01/2000	RPGP-06 RPGP-06 (46-50) 02/02/2000
Bromoform	(ug/l)	50	10 U	1000 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	10 U	1000 U	5 U
2-Hexanone	(ug/l)	50	10 U	1000 U	5 U
Tetrachloroethene	(ug/l)	5	10 U	1000 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	10 U	1000 U	5 U
Chlorobenzene	(ug/l)	5	10 U	1000 U	5 U
Styrene	(ug/l)	5	10 U	1000 U	5 U
Dichlorodifluoromethane	(ug/l)	5	10 U	1000 U	5 U
Trichlorofluoromethane	(ug/l)	5	10 U	1000 U	5 U
Iodomethane	(ug/l)	5	10 U	1000 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	10 U	1000 U	5 U
Methyltert-butylether	(ug/l)		34	1000 U	9
Vinyl Acetate	(ug/l)		10 U	1000 U	5 U
cis-1,2-Dichloroethene	(ug/l)	5	10 U	1000 U	5 U
2,2-Dichloropropane	(ug/l)	5	10 U	1000 U	5 U
Bromochloromethane	(ug/l)	5	10 U	1000 U	5 U
Dibromomethane	(ug/l)	5	10 U	1000 U	5 U
2-Chloroethyl vinyl ether	(ug/l)		10 U	1000 U	5 U
1,3-Dichloropropane	(ug/l)	5	10 U	1000 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	10 U	1000 U	5 U
1,2-Dibromoethane	(ug/l)	5	10 U	1000 U	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 64
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 02/01/2000 thru 02/02/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-06 RPGP-06 (26-30) 02/01/2000	RPGP-06 RPGP-06 (6-10) 02/01/2000	RPGP-06 RPGP-06 (46-50) 02/02/2000
Isopropylbenzene	(ug/l)	5	3 J	1000 U	5 U
Bromobenzene	(ug/l)	5	10 U	1000 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	10 U	1000 U	5 U
n-Propylbenzene	(ug/l)	5	3 J	1000 U	5 U
2-Chlorotoluene	(ug/l)	5	10 U	1000 U	5 U
4-Chlorotoluene	(ug/l)	5	10 U	1000 U	5 U
tert-Butylbenzene	(ug/l)	5	10 U	1000 U	5 U
1,2,4-Trimethylbenzene	(ug/l)	5	[22]	[330] J	5 U
sec-Butylbenzene	(ug/l)	5	10 U	1000 U	5 U
4-Isopropyltoluene	(ug/l)	5	10 U	1000 U	5 U
n-Butylbenzene	(ug/l)	5	10 U	1000 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	10 U	1000 U	5 U
1,2,3-Trichlorobenzene	(ug/l)	5	10 U	1000 U	5 U
1,3,5-Trimethylbenzene	(ug/l)	5	[10]	1000 U	5 U
1,1-Dichloropropene	(ug/l)	5	10 U	1000 U	5 U

ug/l: micrograms/liter
*BTEX compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 65
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 02/01/2000 thru 02/02/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-06 RPGP-06 (26-30) 02/01/2000	RPGP-06 RPGP-06 (6-10) 02/01/2000	RPGP-06 RPGP-06 (46-50) 02/02/2000
Phenol	(ug/l)	1	10 U	50 U	10 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U	50 U	10 U
2-Chlorophenol	(ug/l)	1	10 U	50 U	10 U
1,3-Dichlorobenzene	(ug/l)	3	10 U	50 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	50 U	10 U
1,2-Dichlorobenzene	(ug/l)	3	10 U	50 U	10 U
2-Methylphenol	(ug/l)	1	10 U	50 U	10 U
4-Methylphenol	(ug/l)	1	10 U	50 U	10 U
N-Nitrosodipropylamine	(ug/l)		10 U	50 U	10 U
Hexachloroethane	(ug/l)	5	10 U	50 U	10 U
Nitrobenzene	(ug/l)	0.4	10 U	50 U	10 U
Isophorone	(ug/l)	50	10 U	50 U	10 U
2-Nitrophenol	(ug/l)	1	10 U	50 U	10 U
2,4-Dimethylphenol	(ug/l)	50	10 U	50 U	10 U
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U	50 U	10 U
2,4-Dichlorophenol	(ug/l)	5	10 U	50 U	10 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	50 U	10 U
4-Chloroaniline	(ug/l)	5	10 U	50 U	10 U
Hexachlorobutadiene	(ug/l)	0.5	10 U	50 U	10 U
4-Chloro-3-methylphenol	(ug/l)	1	10 U	50 U	10 U
Hexachlorocyclopentadiene	(ug/l)	5	10 U	50 U	10 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 65
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 02/01/2000 thru 02/02/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-06 RPGP-06 (26-30) 02/01/2000	RPGP-06 RPGP-06 (6-10) 02/01/2000	RPGP-06 RPGP-06 (46-50) 02/02/2000
2,4,6-Trichlorophenol	(ug/l)	1	10 U	50 U	10 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U	100 U	20 U
2-Chloronaphthalene	(ug/l)	10	10 U	50 U	10 U
2-Nitroaniline	(ug/l)	5	20 U	100 U	20 U
Dimethyl phthalate	(ug/l)	50	10 U	50 U	10 U
2,6-Dinitrotoluene	(ug/l)	5	10 U	50 U	10 U
3-Nitroaniline	(ug/l)	5	20 U	100 U	20 U
2,4-Dinitrophenol	(ug/l)	10	20 U	100 U	20 U
4-Nitrophenol	(ug/l)	1	20 U	100 U	20 U
2,4-Dinitrotoluene	(ug/l)	5	10 U	50 U	10 U
Diethyl phthalate	(ug/l)	50	10 U	50 U	10 U
4-Chlorophenyl phenyl ether	(ug/l)		10 U	50 U	10 U
4-Nitroaniline	(ug/l)	5	20 U	100 U	20 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U	100 U	20 U
N-Nitrosodiphenylamine	(ug/l)	50	10 U	50 U	10 U
Hexachlorobenzene	(ug/l)	0.04	10 U	50 U	10 U
Pentachlorophenol	(ug/l)	1	20 U	100 U	20 U
Carbazole	(ug/l)		10 U	50 U	10 U
Di-n-butyl phthalate	(ug/l)	50	10 U	50 U	10 U
Butyl benzyl phthalate	(ug/l)	50	10 U	50 U	10 U
3,3-Dichlorobenzidine	(ug/l)	5	10 U	50 U	10 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 65
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
GEOPROBE WATER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 02/01/2000 thru 02/02/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-06 RPGP-06 (26-30) 02/01/2000	RPGP-06 RPGP-06 (6-10) 02/01/2000	RPGP-06 RPGP-06 (46-50) 02/02/2000
Bis(2-ethylhexyl)phthalate	(ug/l)	5	[9] J	50 U	10 U
Di-n-octyl phthalate	(ug/l)	50	10 U	50 U	10 U

ug/l: micrograms/liter
*PAH compounds not reported, see separate table
Data qualifiers defined in Glossary

[ ]: Exceeds SCG.
---=Not analyzed

TABLE 66
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/15/2001 thru 11/19/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-17 RPGP-17(6-10) 11/19/2001	RPGP-18 RPGP-18(8-12) 11/15/2001	RPGP-19 RPGP-19(6-10) 11/15/2001
Benzene	(ug/l)	1.0	[1100]	1 U	1 U
Ethylbenzene	(ug/l)	5	[4900]	2	1 U
Toluene	(ug/l)	5	[1000]	1 U	1 U
Xylene (total)	(ug/l)	5	[5800]	2	1 U
Total BTEX	(ug/l)		12800	4.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 67
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/15/2001 thru 11/19/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-17 RPGP-17(6-10) 11/19/2001	RPGP-18 RPGP-18(8-12) 11/15/2001	RPGP-19 RPGP-19(6-10) 11/15/2001
Naphthalene	(ug/l)	10	[790] E	10 U	10 U
2-Methylnaphthalene	(ug/l)		64	10 U	10 U
Acenaphthylene	(ug/l)		20	10 U	10 U
Acenaphthene	(ug/l)	20	14	10 U	10 U
Dibenzofuran	(ug/l)		32	10 U	10 U
Fluorene	(ug/l)	50	41	10 U	10 U
Phenanthrene	(ug/l)	50	[220] E	2 J	10 U
Anthracene	(ug/l)	50	[82]	10 U	10 U
Fluoranthene	(ug/l)	50	[200] E	1 J	10 U
Pyrene	(ug/l)	50	[160]	5 J	10 U
Benz(a)anthracene	(ug/l)	0.002	[87]	[2] J	10 U
Chrysene	(ug/l)	0.002	[93]	[3] J	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	[84]	[1] J	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	[36]	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[70]	[2] J	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[39]	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		12	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		35	10 U	10 U
Total CAPAHs	(ug/l)		421.00	8.00	0.00
Total PAHs	(ug/l)		2079.00	16.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 68
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/15/2001 thru 11/26/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-20 RPGP-20(52-56) 11/15/2001	RPGP-20 RPGP-20(40-44) 11/16/2001	RPGP-20 RPGP-20(22-26) 11/16/2001	RPGP-20 RPGP-20(6-10) 11/16/2001	RPGP-21 RPGP-21(90-94) 11/19/2001
Benzene	(ug/l)	1.0	1 U	1 U	[68]	[46]	1 U
Ethylbenzene	(ug/l)	5	1 U	[56]	[44]	[60]	3
Toluene	(ug/l)	5	1 U	1 U	2 U	2	1
Xylene (total)	(ug/l)	5	1 U	2	4	[21]	3
Total BTEX	(ug/l)		0.00	58.00	116.00	129.00	7.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 68
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/15/2001 thru 11/26/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-21 RPGP-21(80-84) 11/19/2001	RPGP-21 RPGP-21(52-56) 11/19/2001	RPGP-21 RPGP-21(22-26) 11/19/2001	RPGP-21 RPGP-21(8-12) 11/19/2001	RPGP-22 RPGP-22(90-94) 11/19/2001
Benzene	(ug/l)	1.0	1 U	1 U	[2]	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	3	2	1 U	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1	3	1 U	1 U
Total BTEX	(ug/l)		0.00	4.00	7.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 68
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/15/2001 thru 11/26/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-22 RPGP-22(80-84) 11/20/2001	RPGP-22 RPGP-22(52-56) 11/20/2001	RPGP-22 RPGP-22(22-26) 11/20/2001	RPGP-22 RPGP-22(8-12) 11/20/2001	RPGP-23 RPGP-23(53-56) 11/20/2001
Benzene	(ug/l)	1.0	[1]	1 U	[240]	[81]	[2]
Ethylbenzene	(ug/l)	5	1 U	1 U	[140]	[43]	[5]
Toluene	(ug/l)	5	1 U	1 U	5 U	2 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	[10]	4	1 U
Total BTEX	(ug/l)		1.00	0.00	390.00	128.00	7.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 68
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/15/2001 thru 11/26/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-23 RPGP-23(40-44) 11/26/2001	RPGP-23 RPGP-23(22-26) 11/26/2001	RPGP-23 RPGP-23(8-12) 11/26/2001	RPGP-24 RPGP-24(52-56) 11/26/2001	RPGP-24 RPGP-24(40-44) 11/26/2001
Benzene	(ug/l)	1.0	1 U	[1400]	[16]	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	[1600]	[14]	1 U	1 U
Toluene	(ug/l)	5	1 U	50 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1	[84]	1 U	1 U	1 U
Total BTEX	(ug/l)		1.00	3084.00	30.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 68
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/15/2001 thru 11/26/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-24 RPGP-24(22-26) 11/26/2001	RPGP-24 RPGP-24(8-12) 11/26/2001
Benzene	(ug/l)	1.0	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U
Toluene	(ug/l)	5	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U
Total BTEX	(ug/l)		0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 69
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/15/2001 thru 11/26/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-20 RPGP-20(52-56) 11/15/2001	RPGP-20 RPGP-20(40-44) 11/16/2001	RPGP-20 RPGP-20(22-26) 11/16/2001	RPGP-20 RPGP-20(6-10) 11/16/2001	RPGP-21 RPGP-21(90-94) 11/19/2001
Naphthalene	(ug/l)	10	2 J	2 J	2 J	[42]	[140]
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	40 U	28
Acenaphthylene	(ug/l)		10 U	8 J	11	48	6 J
Acenaphthene	(ug/l)	20	2 J	[32]	[120]	[260]	[26]
Dibenzofuran	(ug/l)		10 U	1 J	2 J	40	13
Fluorene	(ug/l)	50	10 U	3 J	3 J	40 U	20
Phenanthrene	(ug/l)	50	4 J	8 J	5 J	[560]	36
Anthracene	(ug/l)	50	10 U	2 J	4 J	[140]	6 J
Fluoranthene	(ug/l)	50	10 U	10 U	1 J	[120]	9 J
Pyrene	(ug/l)	50	1 J	10 U	10 U	[260]	11
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	[80]	[3] J
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	[80]	[2] J
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	[45]	[2] J
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	[12] J	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[62]	[2] J
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	[25] J	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	8 J	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	33 J	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	312.00	(9.00)
Total PAHs	(ug/l)		9.00	56.00	148.00	1815.00	304.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 69
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/15/2001 thru 11/26/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-21 RPGP-21(80-84) 11/19/2001	RPGP-21 RPGP-21(52-56) 11/19/2001	RPGP-21 RPGP-21(22-26) 11/19/2001	RPGP-21 RPGP-21(8-12) 11/19/2001	RPGP-22 RPGP-22(90-94) 11/19/2001
Naphthalene	(ug/l)	10	[27]	[20]	[310]	6 J	2 J
2-Methylnaphthalene	(ug/l)		6 J	4 J	96	2 J	10 U
Acenaphthylene	(ug/l)		2 J	3 J	24 J	5 J	10 U
Acenaphthene	(ug/l)	20	6 J	5 J	[73]	2 J	10 U
Dibenzofuran	(ug/l)		3 J	2 J	30	1 J	10 U
Fluorene	(ug/l)	50	5 J	4 J	[58]	1 J	10 U
Phenanthrene	(ug/l)	50	13	12	40	4 J	10 U
Anthracene	(ug/l)	50	2 J	2 J	24 J	2 J	10 U
Fluoranthene	(ug/l)	50	5 J	4 J	43	6 J	10 U
Pyrene	(ug/l)	50	5 J	4 J	[52]	10	10 U
Benz(a)anthracene	(ug/l)	0.002	[1] J	[1] J	[15] J	[4] J	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	[12] J	[5] J	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	[10] J	[5] J	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	[4] J	[2] J	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[12] J	[3] J	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	30 U	[3] J	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	30 U	1 J	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	30 U	3 J	10 U
Total CAPAHs	(ug/l)		(1.00)	(1.00)	53.00	23.00	(0.00)
Total PAHs	(ug/l)		75.00	61.00	903.00	65.00	(2.00)

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 69
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/15/2001 thru 11/26/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-22 RPGP-22(80-84) 11/20/2001	RPGP-22 RPGP-22(52-56) 11/20/2001	RPGP-22 RPGP-22(22-26) 11/20/2001	RPGP-22 RPGP-22(8-12) 11/20/2001	RPGP-23 RPGP-23(53-56) 11/20/2001
Naphthalene	(ug/l)	10	3 J	1 J	[350]	[100]	[66]
2-Methylnaphthalene	(ug/l)		10 U	10 U	26 J	7 J	17
Acenaphthylene	(ug/l)		10 U	10 U	30 U	1 J	2 J
Acenaphthene	(ug/l)	20	1 J	10 U	[55]	[30]	19
Dibenzofuran	(ug/l)		10 U	10 U	30 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	5 J	2 J	4 J
Phenanthrene	(ug/l)	50	2 J	10 U	8 J	6 J	7 J
Anthracene	(ug/l)	50	10 U	10 U	30 U	2 J	2 J
Fluoranthene	(ug/l)	50	10 U	10 U	30 U	1 J	2 J
Pyrene	(ug/l)	50	10 U	10 U	30 U	3 J	2 J
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	30 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	30 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	30 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	30 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[30] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	30 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	30 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	30 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		6.00	1.00	444.00	152.00	121.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 69
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/15/2001 thru 11/26/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-23 RPGP-23(40-44) 11/26/2001	RPGP-23 RPGP-23(22-26) 11/26/2001	RPGP-23 RPGP-23(8-12) 11/26/2001	RPGP-24 RPGP-24(52-56) 11/26/2001	RPGP-24 RPGP-24(40-44) 11/26/2001
Naphthalene	(ug/l)	10	9 J	[1400] E	[49]	10 U	10 U
2-Methylnaphthalene	(ug/l)		2 J	330 E	7 J	10 U	10 U
Acenaphthylene	(ug/l)		2 J	3 J	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	2 J	[450] E	8 J	10 U	10 U
Dibenzofuran	(ug/l)		10 U	4 J	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	22	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	0.9 J	17	1 J	10 U	10 U
Anthracene	(ug/l)	50	1 J	4 J	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	2 J	10 U	10 U	10 U
Pyrene	(ug/l)	50	1 J	4 J	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 J	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		17.90	2236.00	65.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 69
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
BULKHEAD INVESTIGATION PROGRAM
OFF-SITE GEOPROBE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/15/2001 thru 11/26/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	RPGP-24 RPGP-24(22-26) 11/26/2001	RPGP-24 RPGP-24(8-12) 11/26/2001
Naphthalene	(ug/l)	10	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00
Total PAHs	(ug/l)		0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE 70
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SOIL VAPOR SAMPLE RESULTS
BTEX COMPOUNDS AND NAPHTHALENE

PERIOD: From 01/24/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil Vapor

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSV-01 RPSV-01 02/08/2000 0.00	RPSV-02 RPSV-02 02/14/2000 0.00	RPSV-03 RPSV-03 02/16/2000 0.00	RPSV-04 RPSV-04 02/03/2000 0.00	RPSV-05 RPSV-05 02/03/2000 0.00	RPSV-06 RPSV-06 02/02/2000 0.00
Benzene	(ppbv)	0.62U	0.70U	1.2U	0.83	1.2	0.61U
Ethylbenzene	(ppbv)	0.62U	0.70U	1.2U	0.67U	2.1	0.61U
Toluene	(ppbv)	1.2	4.3	470	2.3	3.3	190
m/p-xylene	(ppbv)	0.62U	1.6	1.2U	1.0	6.6	0.68
o-Xylene	(ppbv)	0.62U	0.70U	1.2U	0.67U	2.2	0.61U
Naphthalene	(ppbv)	12U	14U	25U	13U	13U	12U

ppbv: parts per billion by volume
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 70
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
OFF-SITE INVESTIGATION PROGRAM
SOIL VAPOR SAMPLE RESULTS
BTEX COMPOUNDS AND NAPHTHALENE

PERIOD: From 01/24/2000 thru 03/06/2000 - Inclusive
SAMPLE TYPE: Soil Vapor

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSV-07 RPSV-07 01/28/2000 0.00	RPSV-08 RPSV-08 02/04/2000 0.00	RPSV-09 RPSV-09 01/24/2000 0.00	RPSV-10 RPSV-10 02/23/2000 0.00	RPSV-11 RPSV-11 03/06/2000 0.00	RPSV-12 RPSV-12 03/03/2000 0.00
Benzene	(ppbv)	1.2U	0.80U	0.99	0.70U	0.64U	1.0
Ethylbenzene	(ppbv)	1.2U	0.97	0.64U	0.70U	0.64U	0.65U
Toluene	(ppbv)	440	1.6	2.4	2.0	11	2.7
m/p-xylene	(ppbv)	1.2U	3.6	1.9	0.70U	2.5	1.8
o-Xylene	(ppbv)	1.2U	1.2	0.70	0.70U	0.64	0.65U
Naphthalene	(ppbv)	24U	16U	13U	14U	13U	13U

ppbv: parts per billion by volume
Data qualifiers defined in Glossary

---=Not analyzed

TABLE 71
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SOIL VAPOR SAMPLE RESULTS
BTEX COMPOUNDS AND NAPHTHALENE

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil Vapor

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSV-13 RPSV-13 03/03/2000 0.00	RPSV-14 RPSV-14 02/25/2000 0.00	RPSV-15 RPSV-15 02/28/2000 0.00	RPSV-17 RPSV-17 02/29/2000 0.00	RPSV-18 RPSV-18 02/29/2000 0.00	RPSV-19 RPSV-19 03/02/2000 0.00
Benzene	(ppbv)	0.66 U	0.66 U	0.66 U	0.64 U	0.71	17
Ethylbenzene	(ppbv)	0.66 U	0.66 U	0.66 U	0.64 U	0.65 U	0.92
Toluene	(ppbv)	4.5	6.9	2.5	1.5	1.4	5.6
m/p-xylene	(ppbv)	0.92	0.81	0.66 U	0.64 U	0.65 U	2.8
o-Xylene	(ppbv)	0.66 U	0.66 U	0.66 U	0.64 U	0.65 U	0.75
Naphthalene	(ppbv)	13 U	13 U	13 U	13 U	13 U	13 U

ppbv: parts per billion by volume
Data qualifiers defined in Glossary

---:Not analyzed

TABLE 71
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
UNDERGROUND FEEDER CABLE INVESTIGATION PROGRAM
SOIL VAPOR SAMPLE RESULTS
BTEX COMPOUNDS AND NAPHTHALENE

PERIOD: From 02/25/2000 thru 03/03/2000 - Inclusive
SAMPLE TYPE: Soil Vapor

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSV-20 RPSV-20 03/02/2000 0.00	RPSV-21 RPSV-21 03/02/2000 0.00
Benzene	(ppbv)	140	220
Ethylbenzene	(ppbv)	69	13 U
Toluene	(ppbv)	98	30
m/p-xylene	(ppbv)	32	13 U
o-Xylene	(ppbv)	3.8	13 U
Naphthalene	(ppbv)	53 U	260 U

ppbv: parts per billion by volume
Data qualifiers defined in Glossary

---:Not analyzed

Date: 04/17/2002

TABLE 72
ROCKAWAY PARK FORMER MGP SITE REMEDIAL INVESTIGATION
TRANSMISSION CABLE INVESTIGATION PROGRAM
OFF-SITE SOIL VAPOR SAMPLE RESULTS
BTEX COMPOUNDS AND NAPHTHALENE

PERIOD: From 11/21/2001 thru 11/21/2001 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	RPSV-22 RPSV-22 11/21/2001 0.00	RPSV-23 RPSV-23 11/21/2001 0.00	RPSV-24 RPSV-24 11/21/2001 0.00
Benzene	(ppbv)	3.3	1.6	4.2
Ethylbenzene	(ppbv)	2.4	0.62 U	1.2
Toluene	(ppbv)	9.8	2.3	4.6
m/p-xylene	(ppbv)	5.9	2.5	5.1
o-Xylene	(ppbv)	4.2	1.1	3.1
Naphthalene	(ppbv)	13 U	12 U	12 U

ppbv: parts per billion by volume
Data qualifiers defined in Glossary

---=Not analyzed