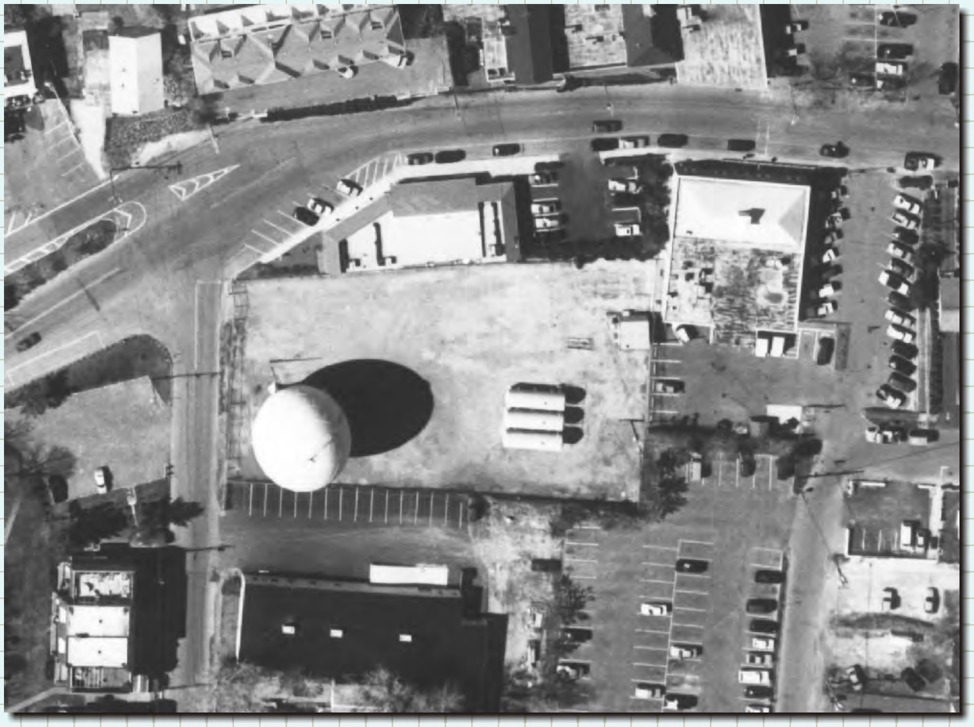
KEYSPAN



Sag Harbor Former Manufactured Gas Plant Site
Site ID No. 1-52-159

FINAL REMEDIAL INVESTIGATION REPORT

DECEMBER 2003

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/REMDMEASSAGHARBOR1620(10/08/02)

KEYSPAN

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

December 30, 2003

Douglas K. MacNeal, Project Manager
New York State Department of Environmental Conservation
Bureau of Western Remedial Action
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7017

Re: Sag Harbor Former MGP Site
Site ID No. 1-52-159
Final Remedial Investigation Report

Dear Mr. MacNeal:

Enclosed please find two (2) hard copies and one (1) electronic copy on compact disc (CD) of the following report:

*"Sag Harbor
Former Manufactured Gas Plant Site
Final Remedial Investigation Report
December 2003"*

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

If you have any questions, feel free to contact me at (516) 545-2563.

Very truly yours,

Theodore O. Leissing, Jr.
Manager, MGP Program - Long Island
KeySpan Corporation

TOL/cmc
Enclosures
cc/encl.:
W. Parish, NYSDEC Region 1 (1 copy)
R. Mitchell, NYSDOH (2 copies, 1 CD)
S. Robbins, SCDHS (1 copy)
L. Liebs, KeySpan (1 CD)

SAG HARBOR
FORMER MANUFACTURED GAS PLANT SITE
SITE ID NO. 1-52-159

FINAL REMEDIAL INVESTIGATION REPORT

Prepared for:

KEYSPAN CORPORATION
One Metrotech Center
Brooklyn, New York

Prepared by:

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330 Crossways Park Drive
Woodbury, New York

DECEMBER 2003

SAG HARBOR
FORMER MANUFACTURED GAS PLANT SITE
FINAL REMEDIAL INVESTIGATION REPORT

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S.0 EXECUTIVE SUMMARY

Introduction

KeySpan Corporation (KeySpan) entered into 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 (RI) at a former manufactured gas plant (MGP) site located in Sag Harbor, Suffolk County, New York. As required by the Order on Consent, a field investigation was completed, as documented in the report entitled, "Remedial Investigation Report," dated June 2002. Based on the findings of the completed field program, additional sampling activities were recommended. As a result, a supplemental field investigation was subsequently completed in accordance with the scope of work presented in the Revised Supplemental Field Investigation Work Plan for the Sag Harbor Former MGP Site, dated February 15, 2002. Additionally, a Qualitative Human Exposure Assessment (QHEA) and Fish and Wildlife Resources Impact Analysis (FWRIA) were performed.

The Final Remedial Investigation Report (Final RI Report) presents: introductory and background information related to the site; a discussion of the completed investigation programs; a discussion of the geology and hydrogeology of the investigation area; discussions of the nature and extent of chemical constituents in the environment related to the site; and a summary of the findings of the field programs. In addition, the findings of the field programs were utilized to prepare a Final Qualitative Human Exposure Assessment (QHEA) and a Fish and Wildlife Resources Impact Analysis (FWRIA) for the site and surrounding area.

Summary of Findings

1. The chemical constituents detected in soil and groundwater are reasonably consistent with that expected for a former MGP site.
2. The presence of trace amounts of some observed chemical constituents may be attributable to sources other than the site, including documented releases from other locations, as well as chemicals produced by car and truck traffic and other internal combustion engines.
3. There are no findings indicating that chemical constituents from the site have impacted currently used drinking water supplies in the community.
4. The remedial investigation and Qualitative Human Exposure Assessment (QHEA) have indicated that there are actual and potential pathways through which people on site and in the community could be exposed to potentially hazardous materials related to former MGP activities. The potentially complete exposure pathways will be evaluated further to determine the best course of action(s) to address them. These actions may consist of engineering or administrative controls, or a combination thereof. KeySpan will develop and identify such actions in the next phase of this program, the development of a Feasibility Study.

5. The remedial investigation and Fish and Wildlife Resources Impact Analysis (FWRIA) have indicated that there are pathways through which wildlife could be exposed to contaminants of potential environmental concern (COPECs) potentially related to former MGP activities, boating activities and road runoff. Several of the COPECs exceed screening level toxicological benchmarks suggesting they may pose a risk to environmental receptors. However, due to the level of development in the community, the number of potential sources of contaminants in the aquatic environment and the transient nature of wildlife present, remedial activities specifically directed at wildlife exposure are not required at this time.

Site Location and Description

The Sag Harbor former MGP site is located on the east end of Long Island in the Village of Sag Harbor, Suffolk County, New York. It is located on the north shore of the south fork of Long Island, on the east side of Bridge Street at its intersection with West Water Street and Long Island Avenue. The site is approximately 0.8 acre in area. The site is bordered by Long Island Avenue and a commercial development consisting of small stores, a residence and residential condominiums to the north, a commercial building to the south, Bridge Street and residential condominiums to the west and a post office, bank, laundromat and a parking lot to the east. The area surrounding the Sag Harbor former MGP site includes a variety of land uses including residential, commercial, industrial and recreational.

An active 100,000-cubic foot spherical gas storage tank (referred to as a Hortonsphere) is currently located on the southwest corner of the site. Gas lines from a regulator located in the northeastern area of the site traverse the northern and central portions of the site and convey natural gas to the Hortonsphere. A compressor station building is located to the east of the regulator. Three natural gas storage tanks that are set on concrete cradles are located to the southwest of the compressor station building. The surface of the site is covered with bluestone, and is fully enclosed and secured by an 8-foot high chain-link fence.

Topography at the Sag Harbor former MGP site is relatively flat; however, there are low points where storm water accumulates during heavy rain, particularly in the southwestern portion of the site. Site elevation ranges from approximately 3.5 feet above mean sea level (msl) in the southwestern portion of the site to about 5.5 feet above msl in the northeastern corner of the site. Storm water runoff across the site generally flows southwest. Storm water catch basins located along Long Island Avenue to the north of the site are connected to storm sewers that convey flow to the northwest and ultimately discharge to Sag Harbor Cove. There are no naturally occurring or manmade surface water bodies within the Sag Harbor former MGP site. Three saline surface water bodies, which include Sag Harbor Bay, Sag Harbor Cove and Upper Sag Harbor Cove, are located within a half mile of the site.

Groundwater at the site ranges in depth from approximately 0.5 to 1.6 feet below ground surface (bgs). Groundwater flow is tidally influenced within the site as well as in areas to the north and northwest. Groundwater flow is predominantly to the northwest within the site and off-site to the north and northwest. However, within the southern portion of the site, groundwater appears to flow to the south and also to the west. An easterly component of flow also exists in the intermediate depth zone in the extreme eastern portion of the site.

Historical records indicate that the Sag Harbor area consisted of large tracts of marshland which have been filled in since the 1730s to allow for development (Bill Bleyer, LI History.com; Sag Harbor Express, July, 1998). As a result, the site and surrounding properties are directly underlain by fill material consisting primarily of sand and silt along with varying amounts of clay, cobbles, brick, coal, ash and wood. The fill material is between 4 and 8 feet in thickness and rests directly on a peat deposit in most locations. The peat deposit consists of a highly organic material containing plant fibers and roots and occurs in conjunction with a fine-grained inorganic silt/clay sediment that is collectively referred to as the peat/silt/clay unit. The peat/silt/clay unit is found throughout the majority of the site, as well as areas to the south. It has an observed thickness of 0.5 to 14 feet. The unit appears to be absent in off-site areas to the north and northwest and appears to be absent or relatively thin within a portion of the site centered near former Gas Holder No. 3. Where present, the peat/silt/clay unit appears to act as a confining layer, limiting the vertical flow of groundwater, as well as the vertical migration of chemical constituents. Below the peat/silt/clay unit exists the shallow sand unit, which consists of fairly well sorted fine to medium grained quartz sand characteristic of highly permeable glacial sands found throughout much of the south fork of Long Island. The shallow sand unit contains a number of discontinuous fine-sand/silt lenses. Due to their discontinuous nature, the fine-sand/silt lenses do not represent an effective confining layer.

Site History

Detailed historical information regarding the operation of the former MGP site is limited. The following discussion is based on information provided by KeySpan. The property was purchased by Captain David Cogden in 1859, and it is said to have been used to manufacture gas from coal or rosin. The Lowe Carbureted Water Gas Process was utilized on-site from 1892 to 1930. Gas was manufactured, either intermittently or continuously, on the site by successor companies. The original service area was the Village and environs of Sag Harbor as well as small, seasonal communities at the eastern end of Long Island. In 1916, the Long Island Gas Corporation took control and increased production capacity, and in 1929 the Long Island Lighting Company (LILCO) purchased the site. After acquisition, LILCO linked the company’s gas distribution system in eastern Long Island to Bay Shore. With the shift to serving as a distribution link in 1929, production at the Sag Harbor site ceased, and gas storage capacity was increased significantly, including the construction of aboveground storage tanks. The facilities for gas manufacturing were dismantled and removed from the site sometime after 1929. Based on a review of historic site plans and Sanborn (fire insurance) maps, the property included four gas storage tanks, three purifying houses, several oil tanks, a tar separator and several other production buildings.

Previous Investigations

Between 1988 and 1997, several environmental investigations were completed at and in the vicinity of the site, including:

- 1988 Preliminary Assessment, the NUS Corporation Superfund Division.
- 1989 Screening Site Investigation, the NUS Corporation Superfund Division.
- 1989 Listing Site Inspection, the NUS Corporation Superfund Division.
- 1993 Preliminary Site Assessment, Engineering-Science, Inc.
- 1997 Phase I Site Investigation Report, Fluor Daniel GTI.

The results of these investigations indicated that chemical constituents were present in soil and groundwater on-site and in the area, and that the former MGP operations conducted at the site was a contributing source of these chemical constituents. Additional details regarding the investigations completed between 1988 and 1997 are presented in the June 2002 RI report.

Remedial Investigation

Based on the findings of these historical studies, KeySpan entered into 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 (RI) at the former manufactured gas plant (MGP) site. An initial field investigation was completed by KeySpan in the Spring of 2000, the results of which are documented in the report entitled, “Sag Harbor Former MGP Site Remedial Investigation Report,” dated June 2002. Based on KeySpan’s assessment of data presented in this report and discussions with the NYSDEC and the New York State Department of Health Services (NYSDOH), it was determined that additional data was needed to further define the nature and extent of MGP-related chemical compounds and residuals present in the subsurface environment, and to develop a remedial strategy for the site and off-site areas. Therefore, a supplemental field investigation scope of work was developed and completed.

The objectives of the remedial investigation, Qualitative Human Exposure Assessment (QHEA) and Fish and Wildlife Resources Impact Analysis (FWRIA) were to:

- Sufficiently characterize the site to achieve an understanding of the nature and extent and migration of chemical constituents in the environment;

- Identify 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; 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 programs 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
- Tap water sampling
- Pore water sampling
- Surface water and surface water sediment sampling
- Ambient air and indoor air sampling
- Surveying and mapping
- Private well and basement survey
- Perimeter and location-specific air monitoring

Remedial Investigation Findings

The following discussion presents a summary of the findings associated with the remedial investigation field programs undertaken at the former MGP site.

Surface Soil

During the sampling activities conducted in support of the initial field program, surface soil on-site was found to exhibit polycyclic aromatic hydrocarbons (PAHs). However, the entire site is fenced and covered with approximately 6 to 8 inches of crushed stone, virtually eliminating the potential for direct contact with the underlying "surface" soil. Off-site surface soil samples collected in various different land use areas during the supplemental field program generally did not exhibit chemical constituents at elevated concentrations, with the exception of PAHs in the 0 to 6-inch interval of a surface soil sample collected immediately adjacent to the southwestern corner of the site. However, the concentration of PAHs detected at this location (24 mg/kg) was significantly less than the concentrations detected on-site (up to 950 mg/kg).

Subsurface Soil

Subsurface soil was found to exhibit benzene, toluene, ethylbenzene and xylene (BTEX) and PAHs in on-site locations, as well as within a limited distance beyond the northern, western and southern site boundaries. The highest levels of BTEX and PAHs were found in the eastern and central portions of the site, at or near the locations of former MGP structures. A number of subsurface soil samples collected within these areas also contained nonaqueous phase liquid (NAPL) at saturated levels. However, NAPL did not extend beyond a depth of 12 feet below ground surface (bgs) at most boring/probe locations, indicating that the peat/silt/clay unit, which is found approximately 8 feet bgs limits the vertical migration of NAPL, as well as BTEX and PAHs. In source areas, such as the location of former MGP structures, where the peat/silt/clay unit is thin or absent, evidence of a dense nonaqueous phase liquid (DNAPL) was observed at deeper depths in isolated locations. The most notable occurrence of DNAPL at greater depths was at the location of the former Tar Separating Tank, where DNAPL was observed to 90 feet bgs. However, based on deep subsurface soil sampling conducted during the supplemental field program, this appears to be an isolated, localized occurrence in this area of the site. BTEX and PAH concentrations appear to rapidly decrease with increasing depth even in areas exhibiting DNAPL.

Groundwater

A number of groundwater samples collected from probe locations exhibited sheens and tar droplets or blebs. The majority of these samples were collected from the eastern and central portions of the site. However, monitoring wells exhibited little evidence of any measurable separate-phase NAPL, with the exception of on-site shallow well MW-05, which exhibited less than 0.1-foot of LNAPL, and on-site monitoring well MW-02, which exhibited less than 0.2-foot of DNAPL. Note that MW-02 does not have a sump for DNAPL collection.

The highest concentrations of BTEX and PAHs in groundwater were generally detected in the shallow groundwater zone (i.e., above the peat/silt/clay unit) in the eastern and central portions of the site. In source areas where the peat/silt/clay unit is thin or absent, elevated levels of BTEX and PAHs were also found in deeper groundwater.

A diffuse off-site zone of shallow groundwater containing BTEX and PAH compounds exists primarily to the northwest, west and south of the site. BTEX and PAH compounds do not appear to have appreciably migrated off-site in shallow groundwater to the northeast and east of the site. The predominate western direction of plume migration corresponds to the western component of groundwater flow. In this direction, BTEX and PAH compounds approach Sag Harbor Cove. Based on the proximity to Sag Harbor Cove of some of the sampling points that exhibited BTEX and PAHs, it is likely that groundwater containing BTEX and PAHs is discharging to this water body to some degree. However, the sampling undertaken within Sag Harbor Cove did not reveal the presence of BTEX and PAH compounds at significant concentrations in the pore water and surface water samples collected from the cove (see discussion below).

BTEX and PAH migration in intermediate depth groundwater is similar to the trends found in shallow groundwater, and is generally less significant, with the exception of the area to the north of the eastern portion of the site. Deep groundwater sampling was also conducted in areas to the north, west and south of the site, where BTEX and/or PAHs were present in intermediate depth groundwater. BTEX and PAH compounds were not found at elevated concentrations in any of the off-site deep groundwater sampling locations.

Sag Harbor Cove

In order to evaluate whether chemical constituents from the site have adversely impacted Sag Harbor Cove, surface water, pore water and sediment sampling was conducted in areas of the cove located to the northwest and west of the site (the primary directions of BTEX and PAH migration). Although sediment samples were found to contain PAHs at concentrations up to 46.76 mg/kg, this may be attributable to the extensive use of the cove by motorized watercraft and/or from storm water runoff from surrounding streets and parking lots discharged to this surface water body. Two sediment samples collected from Sag Harbor Cove to assess background conditions exhibited total PAH concentrations of 2.22 mg/kg and 4.04 mg/kg. Furthermore, surface water and pore water samples collected from the cove exhibited relatively low concentrations of BTEX and PAH compounds. In surface water samples, total BTEX concentrations did not exceed 1 ug/l, and PAHs were not detected at concentrations above method detection limits. In pore water samples, total BTEX concentrations were not detected above method detection limits, and total PAH concentrations did not exceed 4 ug/l. As a result, it does not appear that the site has had a significant adverse impact on Sag Harbor Cove.

Private Water Supply Wells

Based on the findings of a private water supply well survey, one inactive and two active private water supply wells were identified within the study area. Tap water samples collected from the two active wells showed no detectable concentrations of SVOCs. VOCs, RCRA metals and cyanide were also not detected with the exception of chloroform, barium and lead, which were all detected at concentrations well below New York State Department of Health (NYSDOH) drinking water standards/action levels. Additional information concerning the private well survey and sampling activities is provided below (Qualitative Human Exposure Assessment Findings).

Indoor Air Sampling

Indoor air sampling for volatile organic compounds and naphthalene was conducted at 17 off-site locations where access was granted by property owners/occupants. Results of this sampling indicate that the majority of volatile organic compounds were reported as non-detect, and the compounds that were detected were either detected within the range of background concentrations as reported by the NYSDOH, were orders of magnitude below occupational standards, and/or were generally those not typically associated with MGP impacts. Additionally, naphthalene, the compound most commonly associated with potential MGP impacts, was not detected in any of the samples. The analytical results were reviewed by the NYSDOH and the results did not suggest site-related impacts to indoor air in the homes and businesses where samples were collected. Additional information concerning the indoor air sampling activities is provided below (Qualitative Human Exposure Assessment Findings).

Qualitative Human Exposure Assessment Findings

Under current and future site use conditions, the potentially exposed populations (i.e., potential receptors) are those that might come into contact with site chemicals of potential concern (COPCs). These receptor populations and the potential exposure pathways associated with each population are summarized in **Table 2-2** of **Appendix E** (the Qualitative Human Exposure Assessment).

Under current site use conditions, potential receptors include: the trespasser and the KeySpan worker. On-site exposure for trespassers is limited to surface soil via the ingestion (oral), dermal, and inhalation routes. On-site KeySpan workers are those individuals currently engaged in activities required for the function and maintenance of those portions of the site devoted to KeySpan operations (i.e., compressor station maintenance). These individuals may spend time both outdoors and indoors and, consequently, may potentially be exposed to chemicals in surface and subsurface soil via ingestion, dermal contact and inhalation during outdoor activities and also to COPCs in indoor air (via inhalation during indoor activities).

Potential exposure to surface soil is unlikely under current site conditions given that the site is covered with crushed stone.

Under future site use conditions, potential receptors include: construction workers, commercial workers, and adult and child visitors to commercial establishments, if the site were converted to commercial use. Potential on-site exposure media for the construction worker include surface and subsurface soil (via ingestion and dermal contact), inhalation of soil particulates, dermal contact with groundwater, and volatilization of chemicals from soil and groundwater into ambient air during construction trenching activities. The possibility exists that the site may be used in the future for commercial purposes. Thus, exposures for adult commercial workers, and adult and child visitors to a future commercial establishment may exist absent remedial action. These individuals may be exposed to chemicals in indoor air that have volatilized out of the groundwater and subsurface soil underneath the commercial structure. It is expected that future on-site land use may be deed restricted to prevent residential development; however, because deed restrictions are not yet in place, a future on-site residential scenario is included here. Potential on-site exposure media for these future on-site residents includes surface and subsurface soil via ingestion and dermal contact, groundwater via dermal contact, ingestion and inhalation of volatiles while showering if an on-site well was installed for domestic use, and ambient and indoor air. It is likely, however, that if the site were converted to residential use, part of the redevelopment plans would include connection to the municipal water supply. Additionally, available data suggests that this would not likely be an exposure pathway of concern.

Relevant current off-site receptor populations include: adult commercial workers; adult and child visitors to those commercial establishments; adult and child residents of the Harbor Close Condominium complex located to the southwest of the site; and commercial workers, visitors, and adult and child residents of properties located to the north of the site. Indoor air exposure to chemicals volatilizing from groundwater and subsurface soil underneath structures may occur for these receptor populations. Potential exposure to chemicals in surface soil may be possible for these off-site residents. Additionally, potential inhalation exposure to wind-borne particulates from excavations is possible for off-site human populations; however, it is anticipated that this potential exposure would be short-term and if warranted, controlling measures would be used to further reduce potential exposure. Inhalation of site-related wind-borne particulates also is possible for these off-site populations; however, the potential for this exposure is considered limited given that the site is currently covered with bluestone, thereby reducing the potential for exposure. Additionally, given the high water table at Sag Harbor, direct contact with groundwater as well as subsurface soil by off-site residents is possible if they were to access the subsurface in their yards.

Construction workers and nearby off-site utility workers are considered a potential off-site receptor population under future land use conditions. Off-site construction worker exposure to areas surrounding the site is possible in the event of future off-site redevelopment. Chemical exposures for nearby, off-site utility workers could be expected because of the presence of subsurface utility lines in areas adjacent to the site. Like the on-site construction worker, potential exposure pathways for off-site construction workers and nearby off-site utility workers include ingestion of and dermal contact with surface and subsurface soil, inhalation of soil particulates, dermal contact with groundwater, and volatilization of chemicals from soil and groundwater into ambient air during trenching activities.

As mentioned above, persons residing or working in the vicinity of the site may be exposed to chemicals originating from subsurface soil or groundwater via inhalation of vapors in indoor air. Indoor air sampling has been performed at several properties in the vicinity of the site. Results of this sampling indicate that while the majority of volatile organic compounds were reported as non-detect, the compounds that were detected were either detected within the range of background concentrations as reported by the NYSDOH, are orders of magnitude below occupational standards, and/or are generally those not typically associated with MGP impacts.

A private well and basement survey was performed of properties in the vicinity of the site. The survey area was identified by agreement between KeySpan and NYSDEC on April 3, 2002. Results of the 39 questionnaires completed thus far indicate that, at a very small number of properties, the potential for indoor air exposure exists. The owners of these properties were contacted and appropriate courses of action were taken. This survey information, coupled with results of the indoor air sampling performed to date, indicates that potential exposures to site-related chemicals via inhalation of indoor air in the vicinity of the site are minimal.

Three of the 39 survey respondents reported the presence of a groundwater well on their property. Sampling of two of the wells was performed. Barium and lead were detected in samples from both wells. Chloroform, a trihalomethane that is commonly detected in treated water, was detected in a sample collected from one of the wells. All three chemicals were present at concentrations that achieve NYSDOH public water standards/action levels. The third well is not used according to information supplied by the respondent. The information collected to date indicates that the potential for exposure to site-related chemicals in groundwater is minimal.

A summary of the potential exposure pathways, by receptor and medium, is presented in **Table 2-2** of **Appendix E** (the Qualitative Human Exposure Assessment). **Table 2-3** (**Appendix E**) provides context, in qualitative terms, of the potential for the exposures discussed above to actually occur. For example, the potential for on-site trespasser exposure to site-related chemicals in surface soil at the site is considered minimal because access to the site is restricted by a gated fence that is maintained closed and locked.

Fish and Wildlife Resources Impact Analysis Findings

Following the Appendix 1C Decision Key in NYSDEC's Fish and Wildlife Resources Impact Analysis (FWRIA) guidance, a FWRIA was deemed required. The analysis indicates that several COPECs were detected at concentrations greater than applicable toxicological benchmarks. While this finding suggests that site-related chemicals may pose a risk to wildlife, the potential risk from COPECs is not significant for several reasons. The low exposure frequency, low chemical concentrations (especially within six inches of the ground surface), indirect mechanism of exposure and low duration of exposure suggests that the risk to wildlife is low. The site and immediate surrounding area are residential or commercial properties. The commercial areas have minimal habitat in the form of "weedy" patches that would not support a wildlife population. The residential areas are comprised of single-family and multi-unit properties surrounded primarily by maintained lawns. These areas experience constant physical disturbance preventing the development of significant wildlife populations. Because only transient species and a few individual animals would use this area, the frequency and duration of exposure is limited. The future use of the site is expected to be of a type that will not provide a significant wildlife habitat. Thus, the observed MGP-related chemicals do not pose a current risk for impact, nor is any expected in the future.

Several COPECs in Sag Harbor Cove sediment were detected at concentrations greater than the toxicological screening benchmark values. However, only one COPEC, phenanthrene, was detected in surface water above water quality criteria. These data suggest that while some COPECs may pose a risk to the aquatic environment, the potential effects are considered to have minimal ecological significance. Furthermore, these COPECs may be also attributable to the extensive use of the cove by motorized watercraft and/or from storm water runoff from surrounding streets, and parking lots that discharge to this surface water body. Based on these results, the Peconic Estuary and Sag Harbor Cove are not currently impacted by site-related constituents.

1.0 INTRODUCTION

KeySpan Corporation (KeySpan) entered into 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 (RI) at the former manufactured gas plant (MGP) site located in Sag Harbor, Suffolk County, New York. The initial field program was completed in the Spring of 2000, and is documented in the report entitled, "Sag Harbor Former Manufactured Gas Plant Site Remedial Investigation Report", dated June 2002 (herein referred to as the June 2002 RI Report). Based on the findings of the completed field program, additional sampling activities were recommended. As a result, a supplemental field investigation was subsequently completed in accordance with the scope of work presented in the Revised Supplemental Field Investigation Work Plan for the Sag Harbor former MGP site, dated February 15, 2002. This Final Remedial Investigation Report (Final RI Report) presents the findings of the supplemental field program, which is based upon the understanding of the site gained through the completion of the initial field program. This Final RI Report includes:

- Background information related to the site;
- A summary of the findings associated with the initial field program completed in 2000;
- The objectives of the supplemental field program;
- The geology and hydrogeology of the investigation area;
- The findings of the supplemental field program;
- A summary discussion as to the nature and extent of MGP-related chemical compounds and residuals based on all data collected as part of the initial and supplemental field programs.
- A Final Qualitative Human Exposure Assessment (QHEA) and Fish and Wildlife Resources Impact Analysis (FWRIA) that has been updated to reflect the findings of the supplemental field program.

1.1 Supplemental Field Program Objectives

Based on KeySpan's assessment of the existing data as summarized in **Section 1.4** and discussions with the NYSDEC and New York State Department of Health (NYSDOH), it was determined that additional data was needed to further refine understanding of the nature and extent of MGP-related chemical compounds and residuals present in the subsurface environment, and to support the development of a remedial strategy for the site and surrounding areas. Therefore, a supplemental field program scope of work was developed by KeySpan and approved by the NYSDEC and NYSDOH. The objectives of the supplemental field program included:

- Delineate the extent of site-related constituents in subsurface soil in the vicinity of the former Tar Separating Tank on-site;
- Delineate the off-site extent of site-related constituents in subsurface soil;
- Delineate off-site migration of site-related constituents present in shallow and intermediate groundwater;
- Determine if Sag Harbor Cove has been impacted;
- Determine if unregistered private water supply wells exist within close proximity of the site; and
- Determine if ambient indoor air has been impacted in the structures adjacent to the site.

1.2 Overview of Report Organization

This Final RI Report is organized as follows:

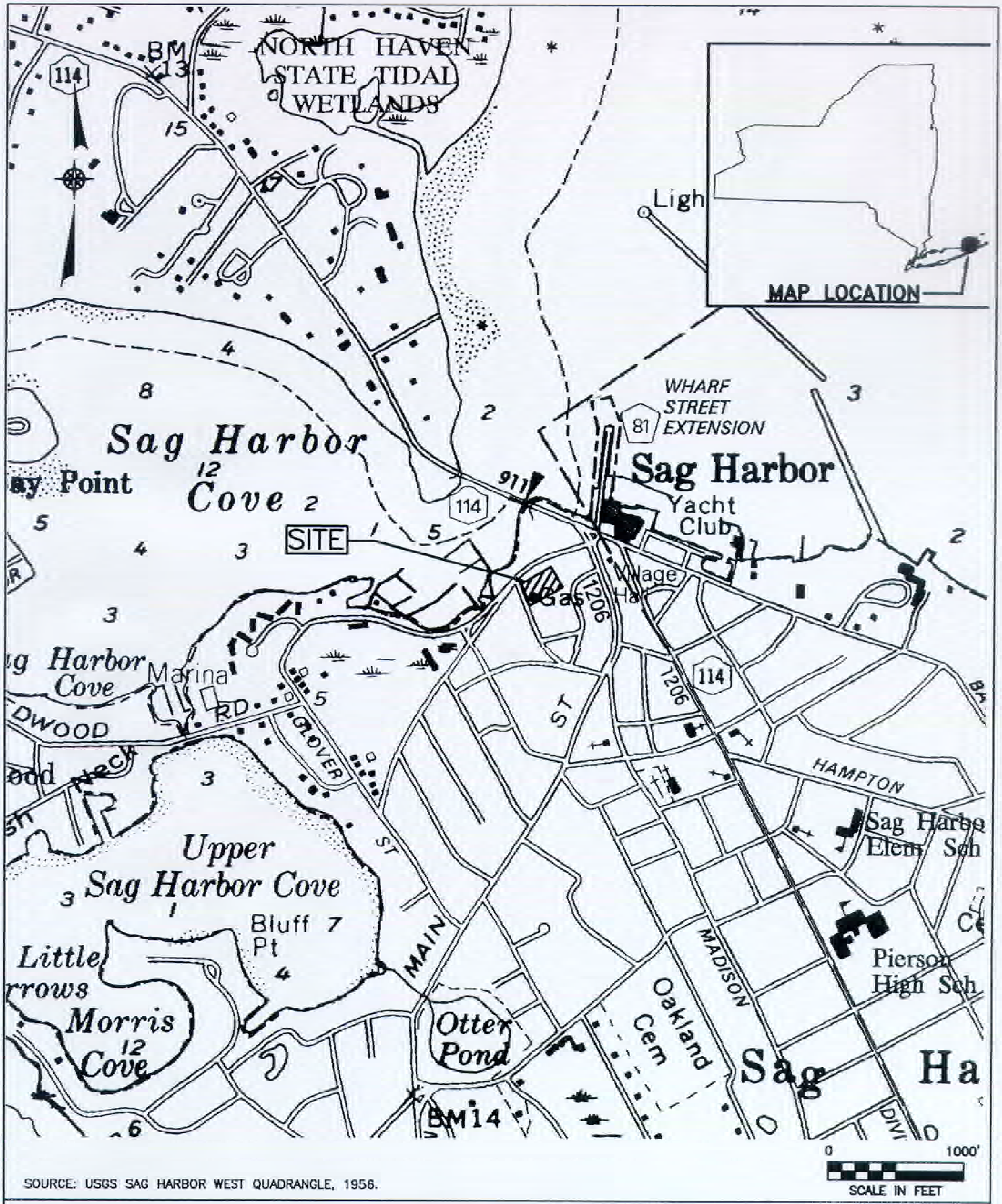
- **Executive Summary:** Summarizes and provides an overview of the findings of all the data collected as part of the initial field program and the supplemental field program.
- **Section 1.0 - Introduction:** Presents background information and a description of the physical setting of the site and its surroundings. This section also provides a

summary of the initial field program and the specific objectives of the supplemental field program.

- **Section 2.0 – Field Investigation Program:** Provides an overview of the field activities associated with the supplemental field program. Additionally, it discusses data management and chemical data validation/usability.
- **Section 3.0 – Site Geology and Hydrogeology:** Presents a discussion of the geology and hydrogeology of the site and immediately surrounding study area based on geologic data collected as part of the initial and supplemental field programs. However, the discussion focuses on those aspects of site/area geology and hydrogeology that have been clarified based on the findings of the supplemental field program.
- **Section 4.0 - Findings:** This section provides a discussion of the chemical compounds and other MGP residuals identified in on-site and off-site areas based on the supplemental field program. Where appropriate, data from the initial field program as well as historical data has been used in conjunction with supplemental field program data to provide a better understanding as to the nature and extent of MGP-related chemical compounds and residuals associated with the site.
- **Section 5.0 – Conclusions:** Provides conclusions based on the findings of **Section 4.0** in conjunction with the **Section 3.0** findings.
- **Section 6.0 – Conceptual Summary:** This section provides an overall summary of the chemical and physical data collected as part of the supplemental field program in addition to the initial field program. This section summarizes the nature and extent of MGP-related chemical compounds and residuals, the fate and transport of these chemicals and materials, and the identification of potential exposure pathways.
- **Section 7.0 - References:** Lists all documents and other sources of information utilized in the preparation of this report.

1.3 Site Description and History

The Sag Harbor former MGP site is located on the east end of Long Island in the Village of Sag Harbor, Suffolk County, New York (see **Figure 1-1**). It is located on the north shore of the south fork of Long Island, on the east side of Bridge Street at its intersection with West Water Street and Long Island Avenue, approximately 200 feet inland (south) of the confluence of Sag Harbor Bay with Sag Harbor Cove. The site is approximately 0.8 acres in area. The site is bordered by Long Island Avenue and a commercial development consisting of small stores, a residence and residential condominiums to the north, a commercial building to the south, Bridge



SOURCE: USGS SAG HARBOR WEST QUADRANGLE, 1956.

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

Dvirka
and
Bartilucci
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SITE LOCATION MAP

FIGURE 1-1

F:\1620\SAG HARBOR\SAGH-MAP.dwg, 12/03/02 09:09:38 AM, LGlubiak

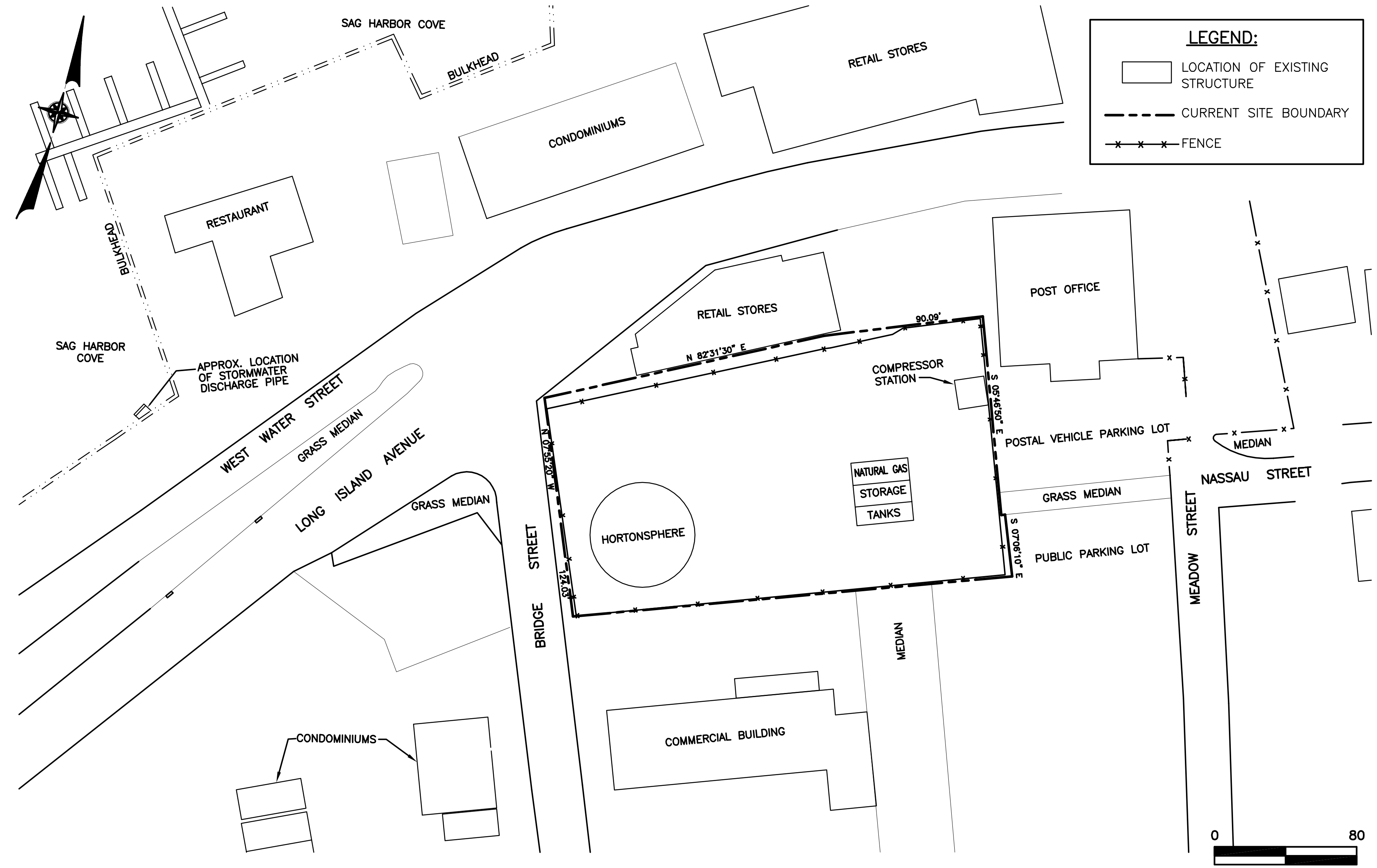
Street and residential condominiums to the west and a post office, bank, laundromat and a parking lot to the east. The area surrounding the Sag Harbor former MGP site includes a variety of land uses including residential, commercial, industrial and recreational. A site map showing the site and surrounding areas, current structures, and other relevant site features is provided in **Figure 1-2**.

Operational History

The site was initially developed in 1859, and it is said to have been used to manufacture gas from coal or rosin. The Lowe Carbureted Water Gas Process was utilized on-site from 1892 to 1930. Gas was manufactured either intermittently or continuously on the site by several successor companies. These companies included the Sag Harbor Gas Light Company (by 1862), UGI of Philadelphia (by 1885) and the Sag Harbor Light Company (by 1914). In 1918, the Long Island Gas Corporation took control of the operation and increased production capacity. In 1929, the Long Island Lighting Company (LILCO) purchased the site and the function of the site shifted from gas manufacturing to serving as a "link" in the gas distribution system. As a result, gas production at the Sag Harbor site ceased and storage capacity at the site was greatly increased. Structures that had been used for the manufacture of gas were later dismantled and removed from the site. In 1998, KeySpan acquired the former MGP property through a merger with LILCO. Additional details regarding the history of the site are provided in the June 2002 RI Report.

Current Site Conditions

An active 100,000-cubic foot spherical gas storage tank (referred to as a Hortonsphere) is currently located on the southwest corner of the site. Gas lines from a regulator located in the northeastern area of the site traverse the northern and central portions of the site and convey natural gas to the Hortonsphere. A compressor station building is located to the east of the regulator. Three natural gas storage tanks that are set on concrete cradles are located to the southwest of the compressor station building. The surface of the site is covered with bluestone, and is fully enclosed and secured by an 8-foot high chain-link fence.



SOURCE: BASE MAP SITE SURVEY DATA PROVIDED BY KEYSPAN ENERGY SURVEY DIVISION

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

SITE MAP

FIGURE 1-2

Dvirka
and
Bartilucci
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Physical Setting and Hydrogeology

Topography at the Sag Harbor former MGP site is relatively flat; however, there are low points where storm water accumulates during heavy rain, particularly in the southwestern portion of the site. Site elevation ranges from approximately 3.5 feet above mean sea level (msl) in the southwestern portion of the site to about 5.5 feet above msl in the northeastern corner of the site. Storm water runoff across the site generally flows southwest. Storm water catch basins located along Long Island Avenue to the north of the site are connected to storm sewers that convey flow to the northwest and ultimately discharge to Sag Harbor Cove. There are no naturally occurring or manmade surface water bodies within the Sag Harbor former MGP site. Three saline surface water bodies, which include Sag Harbor Bay, Sag Harbor Cove and Upper Sag Harbor Cove, are located within a half mile of the site.

Groundwater at the site ranges in depth from approximately 0.5 to 1.6 feet below ground surface (bgs). Groundwater flow is tidally influenced within the site as well as in areas to the north and northwest. Groundwater flow is predominantly to the northwest within the site and off-site to the north and northwest. However, within the southern portion of the site, groundwater appears to flow to the south and also to the west. An easterly component of flow also exists in the intermediate depth zone in the extreme eastern portion of the site.

Additional details regarding the physical setting and hydrogeology of the site are provided in the June 2002 RI Report.

1.4 Previous Site Investigations

Between 1988 and 1997, several environmental investigations were completed at and in the vicinity of the site. The results of these investigations indicated that chemical constituents were present in soil and groundwater on-site and in the area. The results of these investigations also indicated that the former MGP operations conducted at the site were a contributing source of these chemical constituents. Additional details regarding previously completed investigations are presented in the June 2002 RI Report.

An initial field program was completed by KeySpan in the Spring of 2000, the results of which are documented in the report entitled, “Sag Harbor Former MGP Site Remedial Investigation Report”, dated June 2002. The following discussion presents a summary of findings related to the initial field program, which are discussed in greater detail in the June 2002 RI Report.

Initial Field Program Findings

Surface soil on-site was found to contain elevated concentrations of polycyclic aromatic hydrocarbons (PAHs). However, the entire site is fenced and covered with approximately 6 to 8 inches of bluestone, virtually eliminating the potential for direct contact with the underlying “surface” soil. Subsurface soil contained elevated concentrations of benzene, toluene, ethylbenzene, xylene (BTEX) and PAHs, with the highest levels found in the eastern and central portions of the site at or near the locations of former MGP structures. A number of subsurface soil samples collected within these areas also exhibited evidence of nonaqueous phase liquid (NAPL). Evidence of NAPL did not extend beyond a depth of 12 feet below ground surface (bgs) at most boring/probe locations, indicating that the peat/silt/clay unit which is found approximately 8 feet bgs in most portions of the site has limited the vertical migration of NAPL, as well as BTEX and PAHs. In source areas, such as the location of some of the former MGP structures, where the peat/silt/clay unit is thin or absent, evidence of a dense nonaqueous phase liquid (DNAPL) was observed to a maximum depth of 90 feet bgs. However, BTEX and PAH concentrations appear to rapidly decrease with increasing depth, even in areas exhibiting DNAPL.

Evidence of NAPL was observed in several on-site and off-site subsurface soil samples. A number of groundwater samples collected from probe locations exhibited evidence of NAPL such as the presence of sheens and tar droplets or blebs. The majority of these samples were collected from the eastern and central portions of the site. However, monitoring wells exhibited little evidence of any measurable separate-phase NAPL, with the exception of on-site shallow well MW-05, which exhibited 0.1-foot of LNAPL. This indicates that while NAPL is present in subsurface soil, it appears to be currently in a relatively immobile residual saturation state, trapped within subsurface soil. As a result, continued off-site migration of NAPL beyond its current state is unlikely. However, intrusive groundwork or other activities which create heavy ground vibrations could potentially mobilize DNAPLs in the subsurface.

The highest concentrations of BTEX and PAHs in groundwater were generally detected in the shallow groundwater zone (i.e.: above the peat/silt/clay unit) in the eastern and central portions of the site. In source areas where the peat/silt/clay unit is thin or absent, elevated levels of BTEX and PAHs were also found in deeper groundwater; however, all groundwater samples collected below a depth of 35 feet bgs exhibited relatively low concentrations of BTEX and PAHs.

Qualitative Human Exposure Assessment Findings

Current On-site Receptors

Under current site use conditions, potential on-site receptors include: the adolescent trespasser and the KeySpan worker. On-site exposure for trespassers is limited to surface soil via the ingestion (oral), dermal, and inhalation routes. On-site KeySpan workers are those individuals currently engaged in activities required for the function and maintenance of those portions of the site devoted to KeySpan operations (i.e., compressor station maintenance). These individuals are assumed to spend time both outdoors and indoors and, consequently, are assumed to be exposed to chemicals in surface soil and subsurface soil via ingestion, dermal contact and inhalation during outdoor activities and also to COPCs in indoor air (via inhalation during indoor activities).

Future On-site Receptors

Under future site use conditions, potential on-site receptors include construction workers, commercial workers, adult and child visitors to commercial establishments, if the site were converted to commercial use; and adult and child residents. It is expected that future residential development will be prevented through the use of deed restrictions; however, because deed restrictions are not yet in place, a future on-site residential scenario was included in this assessment. Potential on-site exposure media for the construction worker include surface and subsurface soil (via ingestion and dermal contact), inhalation of soil particulates, dermal contact with groundwater, and volatilization of chemicals from soil and groundwater into ambient air during construction trenching activities. The possibility exists that the site may be used in the future for commercial purposes. Thus, exposures for adult commercial workers and adult and child visitors to a future commercial establishment may exist. These individuals may be exposed to chemicals in indoor air that have volatilized out of the groundwater and subsurface soil underneath the commercial structure. Potential exposure media for future on-site residents includes surface and subsurface soil (via dermal contact and ingestion), groundwater (via dermal contact, ingestion, and inhalation of volatiles while showering), and inhalation of vapors in ambient and indoor air.

Current Off-site Receptors

Relevant current off-site receptor populations include adult commercial workers; adult and child visitors to those commercial establishments; adult and child residents of the Harbor Close Condominium complex located to the southwest of the site; and adult and child residents of homes and condominiums located to the north of the site. Indoor air exposure to chemicals volatilizing from groundwater and subsurface soil beneath structures may occur for these populations. Potential exposure to chemicals in surface soil may be possible for off-site residents. Additionally, potential inhalation exposure to wind-borne particulates from excavation activities is possible for off-site human populations; however, it is anticipated that this potential exposure would be short-term and, if warranted, mitigative measures would be employed to further reduce potential exposure. Inhalation of site-related wind-borne particulates also is possible for these off-site populations; however, the potential for this exposure is considered limited given that the site is currently covered with bluestone; thereby reducing the potential for exposure. Potential exposure to groundwater via dermal contact, ingestion, and inhalation of volatiles while showering (for off-site residents) was also included as potential exposure pathways pending results of the private well survey completed as part of the supplemental field program. Additionally, given the high water table at the site, dermal contact with groundwater, as well as subsurface soil, by off-site residents is possible if they were to access the subsurface in their yards. This exposure pathway was not fully evaluated in support of the initial field program, but has been evaluated further in the updated Qualitative Human Exposure Assessment prepared as part of the Final RI Report.

Future Off-site Receptors

Construction workers and nearby off-site utility workers are considered a potential off-site receptor population under future land use conditions. Off-site construction worker exposure to environmental media in areas surrounding the site is possible in the event of future off-site redevelopment. Chemical exposures for nearby, off-site utility workers could be expected because of the presence of subsurface utility lines in areas adjacent to the site. Like the on-site construction worker, potential exposure pathways for off-site construction workers and nearby off-site utility workers include ingestion of and dermal contact with surface and subsurface soil, inhalation of soil particulates, dermal contact with groundwater, and volatilization of chemicals from soil and groundwater into ambient air during trenching activities.

Fish and Wildlife Resources Impact Analysis Findings

Following the Appendix 1C Decision Key in NYSDEC's FWRIA guidance, a FWRIA was deemed required. Based on the findings of the initial field program, the analysis indicated that several chemicals of potential ecological concern (COPECs) were detected in soil at concentrations greater than applicable toxicological benchmarks. While this finding suggests that site-related chemicals may pose a risk to wildlife, the potential risk from COPECs is not significant for several reasons. Exposure frequency, chemical concentration (especially within six inches of the ground surface), mechanism of exposure, and duration of exposure determines risk of impact. The site and immediate surrounding area are residential, commercial or industrial properties. The commercial and industrial areas have minimal habitat in the form of "weedy" patches that would not support a wildlife population. The residential areas are comprised of single-family and multi-unit properties surrounded primarily by maintained lawns. These areas experience constant physical disturbance preventing development of significant wildlife populations. Because only transient species and a few individual animals would use this area, the frequency and duration of exposure is limited. The future use of the site is expected to be of a type that will not provide a significant wildlife habitat. Data collected under the supplemental field program was also evaluated further in the updated FWRIA to determine if remedial activities specific to wildlife are warranted.

2.0 FIELD INVESTIGATION PROGRAM

This section provides an overview of the field activities associated with the supplemental field program. In addition, this section provides information on data management, and chemical data validation and usability.

2.1 Organization and Overview of Field Program Activities

Consistent with the initial field program, environmental samples collected as part of the supplemental field program from on-site locations have been grouped into what is referred to as the On-site Field Investigation Program, and samples collected from off-site locations have been grouped into what is referred to as the Off-site Field Investigation Program.

The field investigation was conducted in order to meet the objectives defined in **Section 1.1** and included:

- Conductivity/resistivity probing;
- Surface soil sampling;
- Subsurface soil sampling;
- Groundwater probe installation and sampling;
- Groundwater monitoring well installation and sampling;
- Pore water sampling;
- Surface water and sediment sampling;
- Tap water sampling;
- Ambient air sampling;
- Perimeter and location-specific air monitoring; and
- Surveying and mapping.

In addition, the supplemental field program included a private well and basement survey that was completed by KeySpan within populated residential and commercial areas surrounding the Sag Harbor former MGP Site.

Environmental samples collected as part of the supplemental field 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**. On-site and off-site sample locations are depicted on **Drawing 2**, provided in the map pocket at the end of this section.

2.2 Field Methods/Procedures

Drilling and sampling methodologies and procedures are described in this section. Additional detailed descriptions of methodologies and procedures are provided in the Generic Work Plan for the project entitled, “Remedial Investigation/Feasibility Study Work Plan for the Sag Harbor former MGP site,” dated February 2000.

Conductivity/Resistivity Probing

Conductivity/resistivity probes were advanced utilizing a Geoprobe equipped with direct sensing and data logging capabilities. Real time monitoring of conductivity/resistivity was conducted to evaluate for the presence of a saltwater/freshwater interface.

Surface Soil Sampling

Surface soil samples were collected from a depth of 0 to 2 inches or 0 to 6 inches below the soil surface utilizing a dedicated polyethylene scoop or a tongue depressor and placed into laboratory provided glass bottles. All samples were screened utilizing a photoionization detector (PID) for the presence of volatile organic compounds (VOCs).

TABLE 2-1
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SAMPLE MEDIA, CHEMICAL CONSTITUENTS AND ANALYTICAL METHODS

Chemical Constituents	SAMPLE MEDIA AND ANALYTICAL METHOD		
	Soil/Sediment	**Groundwater/Surface Water/Pore Water**	**Air**
BTEX	USEPA Method 8020	USEPA Method 8020	--
MTBE	--	USEPA Method 8020	--
VOCs and Naphthalene	--	--	USEPA Modified Method T0-14
PAHs	USEPA Method 8270	USEPA Method 8270	--
VOCs	--	USEPA Method 8260	--
SVOCs	--	USEPA Method 8270	--
RCRA Metals	USEPA Methods 6010/7471	USEPA Methods 6010/7471	--
Lead	USEPA Method 6010	USEPA Method 6010	--
Total Cyanide	USEPA Method 9012	USEPA Method 9012	--
Free Cyanide	--	Method SM4500-CN1	--
Pesticides/PCBs	USEPA Method 8082	--	--
Full NYSDEC TCL Organics	USEPA Methods 8260, 8270 and 8080	--	--
Full NYSDEC TAL Metals	USEPA Methods 6010/7471	--	--
Total Dissolved Solids	--	Method SM2540_TDS	
Iron	--	USEPA Method 6010	--
Sodium	--	USEPA Method 6010	--
Chloride	--	USEPA Method 325.3	--
Calcium	--	USEPA Method 6010	--
Bicarbonate	--	USEPA Method 310.1	--
Total Organic Carbon (TOC)	USEPA SW-846 Method 9060	--	--
Grain Size	ASTM Method D422-63	--	--
Moisture Content	ASTM Method D2216-92	--	--

Note:

-- : Not sampled/analyzed.

Subsurface Soil Sampling

Subsurface soil samples were collected using either a hollow stem auger (HSA) with a decontaminated split spoon sampler (on-site borings) or a direct push (Geoprobe) sampling technique with a decontaminated probe sampler (off-site samples). The samples were screened for VOCs utilizing a PID; inspected for staining, discoloration, nonaqueous phase liquid (NAPL), ash, tar and other MGP-residuals; checked for odors; and logged by a geologist using the Unified Soil Classification system. Boring logs are included in **Appendix A**.

Before commencement of probing activities at probe locations, all “down-hole” probing equipment (i.e., augers, split spoon samplers, probe rods, etc.) was decontaminated using a steam cleaner pressure washer and/or alconox and water at the decontamination pad. Soil probe 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. All liquids generated from the decontamination process were pumped into an on-site storage tank for subsequent off-site disposal by KeySpan.

During soil probe/boring installation, a PID was used to monitor VOCs in the breathing zone and at the probe holes and bore holes. 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 instrument calibration log.

Upon completion, recovered sample material that was not retained for laboratory analysis was placed into a lined roll-off container for off-site disposal by KeySpan, and each probe hole was pressure grouted. All probe holes were restored at grade with the same material that was originally in place. For example, asphalt areas were restored with asphalt, concrete areas were restored with concrete and grass and soil areas were restored with grass and soil.

Groundwater Probes

Groundwater probe samples were collected by driving a probe 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 purged either with a peristaltic pump or manually oscillated until approximately three casing volumes of groundwater had been discharged. 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 in the field utilizing a calibrated Horiba U-22 multiple parameter instrument equipped with a flow cell. Additionally, any evidence of odors, sheens or the presence of free product, was noted. Groundwater samples were then collected from the tubing/check valve assembly into laboratory supplied glass bottles at a flow rate of less than one-quarter gallon per minute.

Upon completion, all probe holes were pressure-grouted to grade. All probe holes were restored at grade with the same material that was originally in place as described previously. Purge water that was generated during the sampling process was pumped into an on-site storage tank for subsequent off-site disposal by KeySpan.

Groundwater Monitoring Well Installation

The total number, depth and location of monitoring wells installed as part of this investigation was 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. Monitoring wells were installed at two general depth intervals, including:

> *Shallow Groundwater*
>
> Shallow monitoring wells were installed above the peat/silt/clay unit that is described in **Section 3.2** of this report. Screens were set at varying intervals based on the depth of the peat/silt/clay unit, but did not exceed 15 feet below grade surface (bgs). Groundwater above this peat/silt/clay geologic unit is under water table conditions and is classified as shallow groundwater for the purpose of this investigation. The objective of the shallow wells was to collect and analyze representative samples in

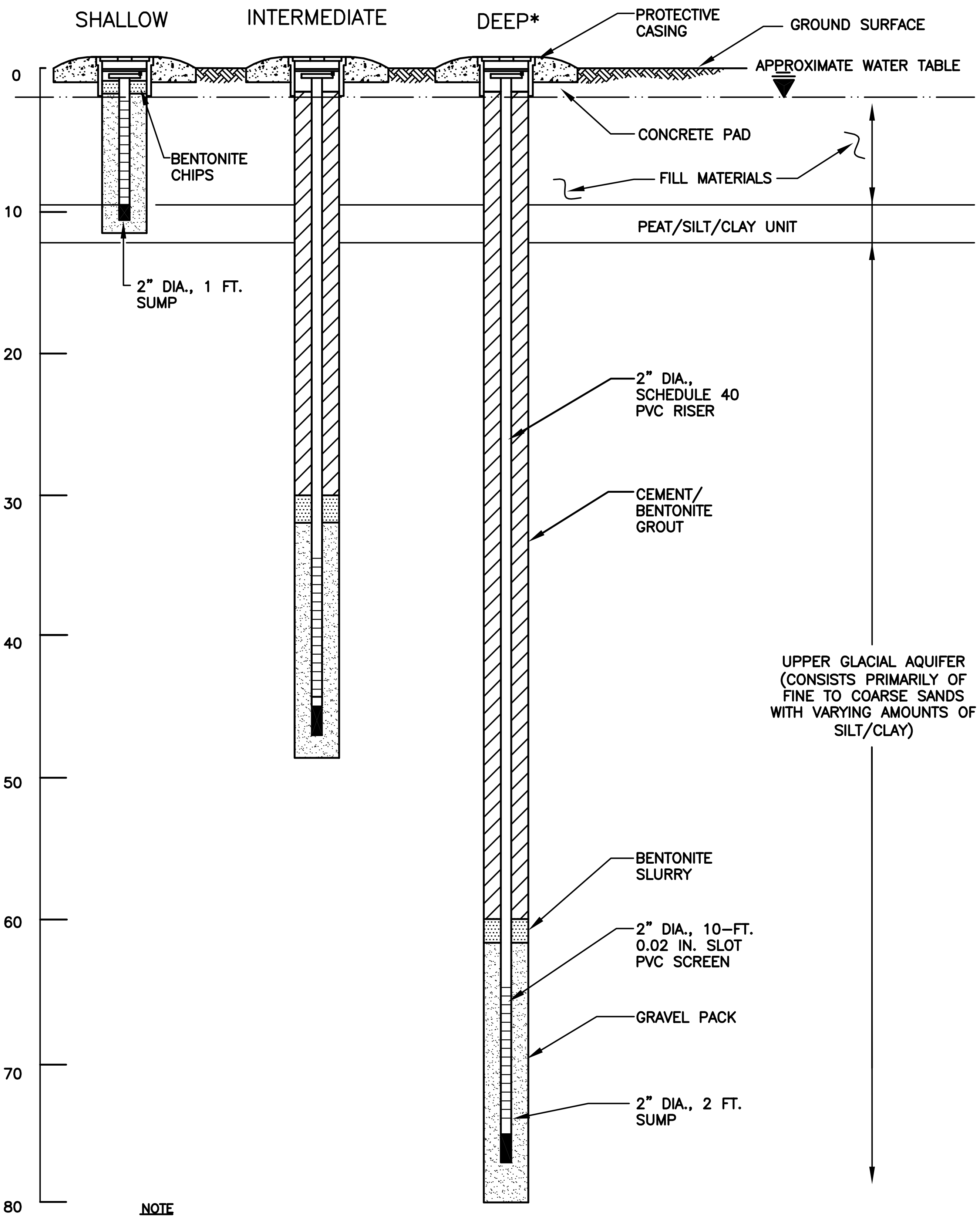
order to characterize the quality of the shallow groundwater zone and, secondly, to obtain water table elevation data needed to determine flow patterns above the peat/silt/clay unit.

Intermediate Groundwater

Intermediate monitoring wells were installed below the peat/silt/clay unit with the screens set between 35 and 45 feet bgs except for SHMW-10I whose screen was set between 35.5 and 45.5 feet bgs. Groundwater located below this peat/silt/clay geologic unit is under partial confining conditions. For the purpose of this investigation, intermediate groundwater is considered groundwater that is located below the peat/silt/clay unit up to a depth of 45 feet bgs. The objective of the intermediate wells was to collect and analyze representative samples in order to characterize the quality of the intermediate groundwater zone and, secondly, to obtain potentiometric head elevations needed to determine flow patterns below the peat/silt/clay unit.

Before commencement of drilling activities and between well locations, all “down-hole” drilling equipment (i.e., augers, rods, core barrel samplers, etc.) was decontaminated using a steam cleaner pressure washer at the decontamination pad. Core barrel 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, 0.020-inch slot screens and threaded flush joint PVC casing. Well screens were generally 10 feet long, with the exception that shorter screens were utilized in some shallow wells that were installed in locations where the peat/silt/clay layer was present to prevent penetration of this geologic unit. All monitoring wells were fitted with flush-mounted locking steel protective casings. **Figure 2-1** shows the typical construction of a monitoring well cluster installed as part of this field program. **Table 2-2** summarizes the completed well construction details. Note that **Table 2-2** summarizes the monitoring wells installed during the entire RI, including both the initial and supplemental field programs. In addition, the boring logs for the monitoring wells installed during the supplemental field program are included in **Appendix A**. The boring logs for wells installed during the initial field program are provided in the June 2002 RI report.



NOTE
* ONE DEEP WELL WAS INSTALLED IN SUPPORT OF THE INITIAL FIELD PROGRAM

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TYPICAL CONSTRUCTION OF NEW MONITORING WELL CLUSTERS

FIGURE 2-1

TABLE 2-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

MONITORING WELL CONSTRUCTION SUMMARY

MONITORING WELL *	WELL DEPTH (feet bgs)	TOTAL DEPTH (feet bgs)	GROUND SURFACE ELEVATION (feet)	MEASURING POINT ELEVATION (feet) **	CASING DIAMETER (inches)	SCREEN DEPTHS (feet bgs)		ANNULAR FILLS (feet bgs)		
						INTERVAL	DESCRIPTION	INTERVAL	TYPE	MATERIALS
MW-01	7.32	7.50	5.09	4.88	2.00	1.50-7.32	Slotted PVC	0.00-0.25	Seal	Well Pad
								0.25-0.50	Seal	Bentonite
								0.50-7.32	Filter	Sand Pack
MW-02	7.25	7.30	4.48	4.21	2.00	0.50-7.25	Slotted PVC	0.00-0.25	Seal	Well Pad
								0.25-0.50	Seal	Bentonite
								0.50-7.30	Filter	Sand Pack
MW-03	10.17	12.00	4.59	4.30	2.00	2.17-10.17	Slotted PVC	0.00-1.17	Seal	Well Pad
								1.17-2.17	Seal	Bentonite
								2.17-12.00	Filter	Sand Pack
MW-04	6.81	6.85	4.13	3.98	2.00	1.25-6.81	Slotted PVC	0.00-0.33	Seal	Well Pad
								0.33-0.66	Seal	Bentonite
								0.66-6.85	Filter	Sand Pack
MW-05	7.46	7.50	5.07	4.58	2.00	2.46-7.46	Slotted PVC	0.00-0.75	Seal	Well Pad
								0.75-1.00	Seal	Bentonite
								1.00-7.46	Filter	Sand Pack
MW-06	7.47	11.00	5.38	5.18	2.00	2.47-7.47	Slotted PVC	0.00-0.50	Seal	Well Pad
								0.50-0.75	Seal	Bentonite
								0.75-7.47	Filter	Sand Pack
SHMW-01S ***	8.00	8.00	4.50	5.13	2.00	1.00-6.00	Slotted Schedule 40 PVC	0.00-0.50	Seal	Neat Cement/Bent Chips
								0.50-8.00	Filter	#2 Gravel Sand Pack
SHMW-01I	48.00	48.00	4.45	4.12	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-31.00	Backfill	Cement Bentonite Grout
								31.00-48.00	Filter	#2 Gravel Sand Pack
								31.00-31.00	Seal	Bentonite Slurry
SHMW-02I	48.00	48.00	5.22	4.63	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-31.00	Backfill	Cement Bentonite Grout
								31.00-48.00	Filter	#2 Gravel Sand Pack
								31.00-31.00	Seal	Bentonite Slurry
SHMW-02D	80.00	90.00	5.19	4.66	2.00	65.00-75.00	Slotted Schedule 40 PVC	0.00-62.00	Backfill	Cement Bentonite Grout
								62.00-80.00	Filter	#2 Gravel Sand Pack
								62.00-62.00	Seal	Bentonite Slurry
SHMW-03S	14.00	14.00	5.23	4.60	2.00	2.00-12.00	Slotted Schedule 40 PVC	1.00-1.50	Seal	Bentonite Chips/Neat Cement
								1.50-14.00	Filter	#2 Gravel Sand Pack
SHMW-03I	48.00	48.00	5.27	4.77	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-28.00	Backfill	Cement Bentonite Grout
								28.00-32.00	Seal	Bentonite Slurry
								32.00-48.00	Filter	#2 Gravel Sand Pack
SHMW-04S	13.00	13.00	5.58	5.13	2.00	2.00-12.00	Slotted Schedule 40 PVC	0.00-1.35	Seal	Bentonite Pellets
								1.35-13.00	Filter	#1 Gravel Sand Pack
SHMW-04I	47.50	47.50	5.60	5.02	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-33.00	Backfill	Cement Bentonite Grout
								33.00-47.50	Filter	#2 Gravel Sand Pack
								33.00-33.00	Seal	Bentonite Slurry
SHMW-05S	13.00	13.00	6.23	5.79	2.00	2.00-12.00	Slotted Schedule 40 PVC	0.00-1.20	Seal	Bentonite Pellets
								1.20-13.00	Filter	#1 Gravel Sand Pack
SHMW-05I	48.00	48.00	6.14	5.60	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-32.00	Backfill	Cement Bentonite
								32.00-48.00	Filter	#2 Gravel Sand Pack
								32.00-32.00	Seal	Bentonite
SHMW-06S	8.00	8.00	4.44	4.16	2.00	2.00-6.00	Slotted Schedule 40 PVC	0.50-1.00	Seal	Bentonite Chips
								1.00-8.00	Filter	#1 Gravel Sand Pack
SHMW-06I	48.00	48.00	4.43	4.15	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-28.00	Backfill	Cement Bentonite Grout
								28.00-31.00	Seal	Bentonite Slurry
								31.00-48.00	Filter	#2 Gravel Sand Pack
SHMW-07S	12.00	12.00	5.05	4.63	2.00	1.00-11.00	Perforated Schedule 40 PVC	0.00-0.66	Seal	Bentonite Pellets
								0.66-12.00	Filter	#1 Grade Sand Pack
SHMW-07I	48.00	48.00	5.00	4.72	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-32.33	Backfill	Cement Bentonite Grout
								32.33-48.00	Filter	#2 Grade Sand Pack
								32.33-32.33	Seal	Bentonite Seal
SHMW-08S	12.00	12.00	5.26	4.93	2.00	1.00-7.00	Slotted Schedule 40 PVC	0.00-0.50	Seal	Bentonite Chips
								0.50-12.00	Filter	#1 Gravel Sand Pack
SHMW-08I	48.00	48.00	5.08	4.85	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-30.00	Backfill	Cement Bentonite Grout
								30.00-33.00	Seal	Bentonite Slurry
								33.00-48.00	Filter	#2 Gravel Sand Pack

TABLE 2-2 (continued)
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

MONITORING WELL CONSTRUCTION SUMMARY

MONITORING WELL *	WELL DEPTH (feet bgs)	TOTAL DEPTH (feet bgs)	GROUND SURFACE ELEVATION (feet)	MEASURING POINT ELEVATION (feet) **	CASING DIAMETER (inches)	SCREEN DEPTHS (feet bgs)		ANNULAR FILLS (feet bgs)		
						INTERVAL	DESCRIPTION	INTERVAL	TYPE	MATERIALS
SHMW-09S	14.00	14.00	4.36	4.03	2.00	2.00-12.00	Slotted Schedule 40 PVC	0.50-1.50	Seal	Bentonite Chips
								1.50-14.00	Filter	#1 Gravel Sand Pack
SHMW-09I	48.00	48.00	4.41	3.72	2.00	35.00-45.00	Slotted Schedule 40 PVC	0.00-29.00	Backfill	Cement Bentonite Grout
								29.00-32.00	Seal	Bentonite Slurry
								32.00-48.00	Filter	#2 Gravel Sand Pack
SHMW-10S	15.00	17.00	5.91	5.69	1.00	5.00-15.00	Pre-Packed 20/40 mesh	0.00-2.00	Seal	Bentonite
								2.00-3.00	Seal	Bentonite Chips
								3.00-5.00	Filter	On-Morie Sand #1
								5.00-15.00	Filter	Pre-Packed Sand #00
SHMW-10I	45.50	47.50	5.89	5.69	1.00	35.50-45.50	Pre-Packed 20/40 mesh	0.00-28.00	Backfill	Cement Bentonite Grout
								28.00-30.00	Seal	Bentonite Chips
								30.00-35.50	Filter	On-Morie Sand #1
								35.50-45.50	Filter	Pre-Packed Sand #00
SHMW-11S	13.50	15.50	5.74	5.51	1.00	3.50-13.50	Pre-Packed 20/40 mesh	0.00-2.00	Seal	Bentonite Chips
								2.00-3.50	Filter	On-Morie Sand #1
								3.50-13.50	Filter	Pre-Packed Sand #00
SHMW-11I	45.00	47.00	5.79	5.57	1.00	35.00-45.00	Pre-Packed 20/40 mesh	0.00-31.00	Backfill	Cement Bentonite Grout
								31.00-33.00	Seal	Bentonite Chips
								33.00-35.00	Filter	On-Morie Sand #1
								35.00-45.00	Filter	Pre-Packed Sand #00
SHMW-12S	6.50	6.50	3.42	3.10	1.00	1.50-6.50	Pre-Packed 20/40 mesh	0.00-1.00	Seal	Cement Bentonite Grout
								1.00-1.50	Filter	On-Morie Sand #1
								1.50-6.50	Filter	Pre-Packed Sand #00
SHMW-12I	45.00	47.00	3.29	2.88	1.00	35.00-45.00	Pre-Packed 20/40 mesh	0.00-30.00	Backfill	Cement Bentonite Grout
								30.00-32.00	Seal	Bentonite Pellets
								32.00-35.00	Filter	On-Morie Sand #1
								35.00-45.00	Filter	Pre-Packed Sand #00
SHMW-13S	6.50	6.50	4.68	4.43	1.00	1.50-6.50	Pre-Packed 20/40 mesh	0.00-1.00	Seal	Cement Bentonite Grout
								1.00-1.50	Filter	On-Morie Sand #1
								1.50-6.50	Filter	Pre-Packed Sand #00
SHMW-13I	45.00	46.70	4.70	4.47	1.00	35.00-45.00	Pre-Packed 20/40 mesh	0.00-30.00	Backfill	Cement Bentonite Grout
								30.00-33.00	Seal	Bentonite
								33.00-35.00	Filter	On-Morie Sand #1
								35.00-45.00	Filter	Pre-Packed Sand #00

Notes

* Construction details for MW-01 through MW-06 taken from Fluor Daniel GTI report,
monitoring well clusters SHMW-01 through SHMW-09 installed during initial field program,
and monitoring well clusters SHMW-10 through SHMW-13 installed during supplemental field program.

** Top of casing elevation

*** Ground and/or casing elevation not valid (i.e. Flush mounted well)

A number 1 or 2 graded gravel was set from about 1 foot below the bottom of the monitoring well sump to a point about 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 intermediate groundwater monitoring wells, a cement and bentonite mix was pumped via tremie pipe into the annulus from the top of the bentonite seal to the surface. For the shallow monitoring wells, the gravel was packed up to only a few feet from the top of the well before bentonite chips were packed to the ground 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 groundwater monitoring wells was placed into a covered roll-off container for subsequent off-site disposal by KeySpan.

The new groundwater monitoring wells were developed after their installation. The development process consisted of pumping the wells with a peristaltic pump and dedicated polyethylene tubing while monitoring the flow rate, pH, conductivity, turbidity, dissolved oxygen, temperature, salinity and depth to water. During the development process, the dedicated polyethylene tubing was rapidly moved up and down in the groundwater column. This surging action loosens up any fine material 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 Nephelometric Turbidity Units (NTUs) or less and stabilization of the measured field parameters was achieved. The dedicated polyethylene tubing for the peristaltic pump was discarded after each use and a new length was used prior to development of the next monitoring well. All development water was temporarily containerized on-site in an aboveground storage tank. After waste characterization, all containerized liquids were removed from the site for proper off-site disposal by KeySpan.

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 in order to estimate purge volumes. An oil/water interface probe was used to determine if any nonaqueous phase liquid (NAPL) was present within each well.

Each well was purged using a peristaltic pump. During purging, groundwater was pumped through a 4-inch diameter flow cell, which was used in connection with a Horiba U-22 water meter. The groundwater entered through a tube near the bottom of the flow cell and exited through a tube near the top. The probes from the Horiba U-22 were located in the flow cell so that the parameters for pH, specific conductance, temperature, turbidity, dissolved oxygen, ORP and salinity could be monitored and recorded in the field. All purge water was temporarily containerized on-site in an aboveground storage tank for subsequent off-site disposal by KeySpan. Monitoring wells were sampled using disposable plastic bailers after purging the equivalent of three to five well volumes of groundwater from each well. Groundwater was carefully poured from the bailers into laboratory-supplied glass bottles. After completing sampling activities, the weighted bailer used in sampling the monitoring well was slowly lowered into the bottom of the well in an effort to determine if DNAPL has accumulated within the well sump.

Pore Water Sampling

Pore water samples were collected by advancing a 6-inch stainless steel well screen attached to a 1-inch threaded steel pipe into the sand deposits immediately underlying the cove sediment. Dedicated polyethylene tubing was then connected to the well screen and the pore water was purged from the screen zone using a peristaltic pump with flow rates not exceeding 80 milliliters per minute. Conductivity, pH, temperature, dissolved oxygen and salinity of the pore water was monitored during the purging process. After the field parameters stabilized, the pore water was collected directly from the discharge tubing into laboratory supplied bottles.

Surface Water and Sediment Sampling

At each sampling location, two surface water samples were collected; one at a depth of 12 inches above the cove bottom and one at the sediment/water interface. Similarly, two sediment samples were collected at each location; one at a depth of 0 to 6 inches below the cove bottom and one at a depth of 6 to 12 inches below the cove bottom. Two additional sediment samples were collected at two additional sampling locations at a depth of 0 to 6 inches below the cove bottom. Surface water samples were collected by slowly immersing the laboratory supplied sample containers into the surface water body being careful not to disturb the surface water sediment. Water quality parameters including pH, specific conductance, turbidity, dissolved oxygen, temperature and salinity were measured in the field utilizing a calibrated Horiba U-22 multiple parameter instrument. All samples were collected during dry conditions (i.e., no precipitation within the prior 3 days) in order to sample surface water at or near base flow conditions and to minimize any possible influence of storm water runoff on the chemical quality of the surface water.

Tap Water Sampling

Tap water samples were collected from residences with private water supply wells that were identified during a private well survey. At locations where private water supply wells were identified, the presence of treatment systems were identified and if present, sample locations were selected upstream and downstream of this system. Upstream screens and/or purification systems were removed and cold water was allowed to run for approximately five minutes in order to adequately flush the line. The sample was then collected into laboratory supplied bottles and the screen and/or purification system was reassembled.

Air Sampling

Air samples were collected in Summa canisters as either 8-hour or 1-hour composites under low atmospheric pressure conditions. 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 (-30 inches Hg) to ensure that the canister remained free of contaminants prior to use. The following atmospheric conditions/parameters were generally recorded/measured during sample collection: barometric pressure, temperature, relative humidity and wind direction and speed.

2.3 On-site Field Investigation Program

The investigation activities completed as part of the On-site Field Investigation Program are summarized in **Table 2-3**. The on-site sample locations are shown on **Drawing 2,** presented in the map pocket at the end of this section.

Subsurface Soil

A total of three soil borings were advanced on-site and sampled continuously to 100 feet bgs using the hollow stem auger method. Boring logs are included in **Appendix A**. These borings were located downgradient, with respect to the predominate direction of groundwater flow, of the former Gas Holder No. 1, the former Gas Holder No. 3 and the former Tar Separator in order to further define the extent of chemical constituent migration in the vicinity of monitoring well SHMW-02D. Four samples were selected from each boring for laboratory analysis. The analytical results of soil samples collected from these on-site soil borings are presented and discussed in **Section 4.2.1**.

Groundwater Monitoring Wells

New on-site groundwater monitoring wells were not deemed necessary to support the supplemental field program. However, samples were collected for laboratory analysis from existing monitoring wells MW-01 through MW-06, SHMW-01S,I and SHMW-02I,D. In addition, these wells were inspected for NAPL and DNAPL. The findings of these monitoring activities and the associated analytical results are presented and discussed in **Section 4.2.2.**

Conductivity\Resistivity Probe Sampling

In order to evaluate the presence of a saltwater/freshwater interface, three conductivity/ resistivity probes were advanced on-site to a depth of 100 feet bgs. The findings of these activities are presented and discussed in **Section 3.3.**

TABLE 2-3

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF ON-SITE FIELD INVESTIGATION PROGRAM

		QUANTITY					ANALYTICAL PARAMETERS																	
ACTIVITY	SAMPLE MEDIA	PROPOSED	ACTUAL	SITE ID	DEPTH	SAMPLE ID	BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	Iron & Manganese	VOCs	Chlorinated VOCs	SVOCs	Full TCL/TAL	TOC	BTEX and Naphthalene	TDS & Chloride	Grain Size	Geochemical Analysis
Subsurface Soil Borings	--	3	3	SHSB-20	101'	SHSB-20 (9-11)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
Subsurface Soil Boring Samples	Soil	12	19			SHSB-20 (13-15)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--
						SHSB-20 (31-33)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-20 (59-61)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--
						SHSB-20 (77-79)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--
						SHSB-20 (79-81)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-20 (99-101)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-21	101'	SHSB-21 (7-9)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--		--
						SHSB-21 (11-13)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--
						SHSB-21 (15-17)	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--	--
						SHSB-21 (49-51)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--
						SHSB-21 (71-73)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-21 (95-97)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-22	100'	SHSB-22 (6-7)	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--	--
						SHSB-22 (14-16)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--
						SHSB-22 (20-22)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-22 (52-54)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-22 (64-66)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--
						SHSB-22 (98-100)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
Existing Groundwater Monitoring Well Sampling	Groundwater	6	6	MW-01	7.50'	MW-01	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
				MW-02	7.30'	MW-02	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
				MW-03	12.00'	MW-03	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
				MW-04	6.85'	MW-04	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
				MW-05	7.50'	MW-05	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
				MW-06	11.00'	MW-06	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
Monitoring Well Sampling	Groundwater	4	4	SHMW-01	8'	SHMW-01 S	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
					48'	SHMW-01 I	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
				SHMW-02	48'	SHMW-02 I	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
					90'	SHMW-02 D	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■

2.4 Off-site Field Investigation Program

The investigation activities that were completed as part of the Off-site Field Investigation Program are summarized in **Table 2-4**. The majority of the off-site sample locations are shown on **Drawing 2**, presented in a map pocket at the end of this section. Additional sample locations also exist beyond the area shown on this drawing. These sample locations are presented on **Figures 2-2** through **2-5**.

Surface Soil

A total of six surface soil samples were collected from off-site locations within approximately one-half mile of the site. The objective of this sampling effort was to establish a range of background conditions in the vicinity of the site, as well as to evaluate whether storm water runoff had adversely impacted surface soil off the southwest corner of the site. Surface soil sample locations were selected in consultation with the NYSDEC and NYSDOH from a variety of land use areas. The 0 to 2 inch interval below the soil surface was analyzed from all five sampling locations. In addition, the 0 to 6 inch interval below the soil surface was also analyzed from the sampling location immediately adjacent to the southwest corner of the site. All samples were collected using disposable plastic scoops and tongue depressors. The analytical results associated with the surface soil sampling activities are presented and discussed in **Section 4.3.1**.

Subsurface Soil

A total of twenty-four soil probes were installed on adjacent and nearby properties surrounding the site, and sampled continuously using the Geoprobe system. Boring logs are presented in **Appendix A**. In general, probes were installed to approximate depths of 30 feet bgs (i.e., intermediate) or 60 feet bgs (i.e., deep). Two shallow probes were also installed to a depth of approximately 2 feet bgs. The samples were characterized for stratigraphy, presence of NAPL and related MGP residuals. In general, based on field observations, one sample was selected from each shallow probe location, two samples were selected from each intermediate probe location and four samples were selected from each deep probe location for laboratory analysis.

TABLE 2-4

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

		QUANTITY					ANALYTICAL PARAMETERS																	
ACTIVITY	SAMPLE MEDIA	PROPOSED	ACTUAL	SITE ID	DEPTH	SAMPLE ID	BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	Iron & Manganese	VOCs	Chlorinated VOCs	SVOCs	Full TCL/TAL	TOC	BTEX and Naphthalene	TDS & Chloride	Grain Size	Geochemical Analysis
Surface Soil Sampling	Soil	2	6	SHSS-14	2"	SHSS-14	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
					6"	SHSS-14	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSS-15	2"	SHSS-15	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSS-16	2"	SHSS-16	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSS-17	2"	SHSS-17	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSS-18	2"	SHSS-18	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
Subsurface Soil Borings	--	16	24	SHSB-23	60'	SHSB-23 (8-10)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
Subsurface Soil Boring Samples	Soil	44	61			SHSB-23 (17-19)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-23 (37-39)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-23 (58-60)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-24	60'	SHSB-24 (12-14)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■	--
						SHSB-24 (20-22)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-24 (40-42)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-24 (56-58)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-25	60'	SHSB-25 (6-8)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-25 (21-23)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-25 (42-44)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-25 (57-59)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-26	60'	SHSB-26 (5-6)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-26 (16-18)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-26 (40-42)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-26 (58-60)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-27	32'	SHSB-27 (5-7)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-27 (28-30)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-28	60'	SHSB-28 (10-12)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-28 (20-22)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-28 (38-40)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-28 (58-60)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-29	60'	SHSB-29 (5-7)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-29 (12-14)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-29 (30-32)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-29 (58-60)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-30	30'	SHSB-30 (5-6)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-30 (28-30)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-31	30'	SHSB-31 (4-6)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-31 (16-18)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-31 (28-30)	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-32	32'	SHSB-32 (5-7)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-32 (16-20)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-33	32'	SHSB-33 (5.5-7.5)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-33 (12-14)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-34	30'	SHSB-34 (8-10)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-34(28-30)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-35	32'	SHSB-35 (8-10)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-35 (28-30)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-36	30'	SHSB-36 (8-10)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-36 (14-16)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-37	32'	SHSB-37 (6-8)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-37 (10-12)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-37 (14-16)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2-4 (continued)
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

		QUANTITY					ANALYTICAL PARAMETERS																
ACTIVITY	SAMPLE MEDIA	PROPOSED	ACTUAL	SITE ID	DEPTH	SAMPLE ID	BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	Iron & Manganese	VOCs	Chlorinated VOCs	SVOCs	Full TCL/TAL	TOC	BTEX and Naphthalene	TDS & Chloride	Grain Size	Geochemical Analysis
Subsurface Soil Boring Samples (continued)				SHSB-38	32'	SHSB-38 (8-10)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-38 (12-14)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-38 (22-24)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-39	30'	SHSB-39 (8-10)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-39 (16-18)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-40	32'	SHSB-40 (8-9)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-40 (13-15)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-41	32'	SHSB-41 (9-11)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-41 (16-18)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-42	32'	SHSB-42 (8-10)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■	--
						SHSB-42 (20-22)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-43	32'	SHSB-43 (8-10)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■	--
						SHSB-43 (16-18)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-44	32'	SHSB-44 (6-8)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSB-44 (28-30)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-45	2'	SHSB-45 (0-2)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSB-46	2.25'	SHSB-46 (1.25-2.25)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--
Groundwater Probes	--	12	29	SHGP-31	34'	SHGP-31 (4-8)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Groundwater Probe Samples	Groundwater	24	65			SHGP-31 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-32	34'	SHGP-32 (6.5-10.5)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-32 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-33	34'	SHGP-33 (4-8)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-33 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-34	75'	SHGP-34 (4-8)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-34 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-34 (41-45)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-34 (56-60)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-34 (71-75)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-35	34'	SHGP-35 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-35 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-36	34'	SHGP-36 (4-8)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-36 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-37	34'	SHGP-37 (2-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-37 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-38	34'	SHGP-38 (2-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-38 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-39	34'	SHGP-39 (4-8)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-39 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-40	34'	SHGP-40 (5-9)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-40 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-41	34'	SHGP-41 (6-10)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-41 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-42	34'	SHGP-42 (2-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-42 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-43	34'	SHGP-43 (2-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-43 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-44	34'	SHGP-44 (4-8)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-44 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-45	34'	SHGP-45 (2-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-45 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-46	34'	SHGP-46 (2-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-46 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2-4 (continued)
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

		QUANTITY					ANALYTICAL PARAMETERS																	
ACTIVITY	SAMPLE MEDIA	PROPOSED	ACTUAL	SITE ID	DEPTH	SAMPLE ID	BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	Iron & Manganese	VOCs	Chlorinated VOCs	SVOCs	Full TCL/TAL	TOC	BTEX and Naphthalene	TDS & Chloride	Grain Size	Geochemical Analysis
Groundwater Probe Samples (continued)				SHGP-47	34'	SHGP-47 (4-8)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-47 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-48	34'	SHGP-48 (7.5-11.5)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-48 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-49	34'	SHGP-49 (2-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-49 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-50	34'	SHGP-50 (4-8)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-50 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-51	34'	SHGP-51 (4-8)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-51 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-52	75'	SHGP-52 (41-45)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-52 (56-60)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-52 (71-75)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-53	50'	SHGP-53 (6-10)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-53 (30-34)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-53 (46-50)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-54	34'	SHGP-54 (4-8)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-54 (30-34)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-55	34'	SHGP-55 (4-8)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-55 (30-34)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-56	34'	SHGP-56 (2.5-6.5)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-56 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-57	34'	SHGP-57 (5-9)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-57 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-58	50'	SHGP-58 (8-12)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-58 (30-34)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-58 (46-50)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-59	50'	SHGP-59 (7-11)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-59 (30-34)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-59 (46-50)	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Monitoring Well Sampling	Groundwater	22	22	SHMW-03	14'	SHMW-03 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
					48'	SHMW-03 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
				SHMW-04	13'	SHMW-04 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
					47.5'	SHMW-04 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
				SHMW-05	13'	SHMW-05 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
					48'	SHMW-05 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
				SHMW-06	8'	SHMW-06 S	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
					48'	SHMW-06 I	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
				SHMW-07	12'	SHMW-07 S	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
					48'	SHMW-07 I	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
				SHMW-08	12'	SHMW-08 S	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
					48'	SHMW-08 I	■	--	■	■	■	--	--	--	--	--	--	--	--	--	--	--	--	■
				SHMW-09	14'	SHMW-09 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
					48'	SHMW-09 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
				SHMW-10	17'	SHMW-10 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
					47.5'	SHMW-10 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
				SHMW-11	15.5'	SHMW-11 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
					47'	SHMW-11 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
				SHMW-12	6.5'	SHMW-12 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
					47'	SHMW-12 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
				SHMW-13	6.5'	SHMW-13 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■
					46.5'	SHMW-13 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	--	--	--	■

TABLE 2-4 (continued)

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

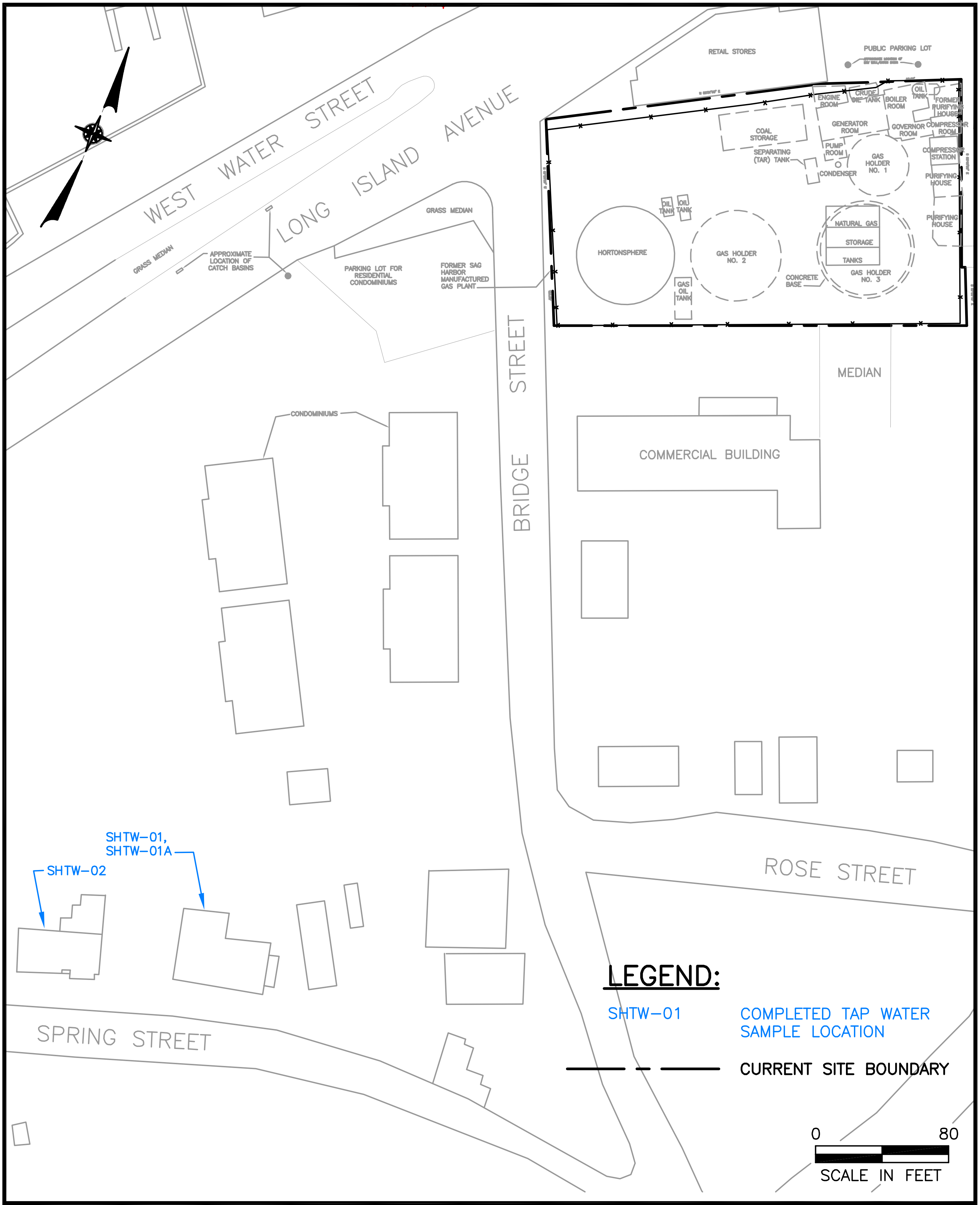
		QUANTITY					ANALYTICAL PARAMETERS																	
ACTIVITY	SAMPLE MEDIA	PROPOSED	ACTUAL	SITE ID	DEPTH	SAMPLE ID	BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	Iron & Manganese	VOCs	Chlorinated VOCs	SVOCs	Full TCL/TAL	TOC	BTEX and Naphthalene	TDS & Chloride	Grain Size	Geochemical Analysis
Ambient Air Sampling	Air	19	35	SHAA-03		SHAA-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-04		SHAA-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-05		SHAA-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-06		SHAA-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-07		SHAA-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-08		SHAA-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-09		SHAA-09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-10		SHAA-10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-11		SHAA-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-12		SHAA-12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-13		SHAA-13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-14		SHAA-14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-15		SHAA-15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-16		SHAA-16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-17		SHAA-17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-18		SHAA-18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-19		SHAA-19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-20		SHAA-20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-21		SHAA-21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-22		SHAA-22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-23		SHAA-23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-24		SHAA-24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-25		SHAA-25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-26		SHAA-26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-27		SHAA-27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-28		SHAA-28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-29		SHAA-29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-30		SHAA-30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-31		SHAA-31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-32		SHAA-32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-33		SHAA-33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-34		SHAA-34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-35		SHAA-35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-36		SHAA-36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
				SHAA-37		SHAA-37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--	--
Pore Water Sampling	Water	8	8	SHPW-01		SHPW-01	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHPW-02		SHPW-02	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHPW-03		SHPW-03	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHPW-04		SHPW-04	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHPW-05		SHPW-05	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHPW-06		SHPW-06	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHPW-07		SHPW-07	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHPW-08		SHPW-08	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Surface Water Sampling	Water	16	16	SHSW-01	B	SHSW-01 (B)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSW-01 (B-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSW-02	B	SHSW-02 (B)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSW-02 (B-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSW-03	B	SHSW-03 (B)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSW-03 (B-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSW-04	B	SHSW-04 (B)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSW-04 (B-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2-4 (continued)

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

		QUANTITY					ANALYTICAL PARAMETERS																	
ACTIVITY	SAMPLE MEDIA	PROPOSED	ACTUAL	SITE ID	DEPTH	SAMPLE ID	BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	Iron & Manganese	VOCs	Chlorinated VOCs	SVOCs	Full TCL/TAL	TOC	BTEX and Naphthalene	TDS & Chloride	Grain Size	Geochemical Analysis
Surface Water Sampling (continued)				SHSW-05	B	SHSW-05 (B)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSW-05 (B-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSW-06	B	SHSW-06 (B)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSW-06 (B-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSW-07	B	SHSW-07 (B)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSW-07 (B-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSW-08	B	SHSW-08 (B)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHSW-08 (B-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sediment Sampling	Soil	16	18	SHSD-01	12"	SHSD-01 (0-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
						SHSD-01 (6-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
				SHSD-02	12"	SHSD-02 (0-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
						SHSD-02 (6-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
				SHSD-03	12"	SHSD-03 (0-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
						SHSD-03 (6-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
				SHSD-04	12"	SHSD-04 (0-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
						SHSD-04 (6-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
				SHSD-05	12"	SHSD-05 (0-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
						SHSD-05 (6-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
				SHSD-06	12"	SHSD-06 (0-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
						SHSD-06 (6-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
				SHSD-07	12"	SHSD-07 (0-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
						SHSD-07 (6-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
				SHSD-08	12"	SHSD-08 (0-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
						SHSD-08 (6-12)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
				SHSD-09	6"	SHSD-09 (0-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
				SHSD-10	6"	SHSD-10 (0-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	■	--	--	--	--
Tap Water Sampling	Water	0	3	SHTW-01	--	SHTW-01	--	--	--	■	■	--	--	--	--	■	--	■	--	--	--	--	--	--
				SHTW-01A	--	SHTW-01A	--	--	--	■	■	--	--	--	--	■	--	■	--	--	--	--	--	--
				SHTW-02	--	SHTW-02	--	--	--	■	■	--	--	--	--	■	--	■	--	--	--	--	--	--
Rose Street Sampling	Water	0	1	SHROSE-01	--	SHROSE-01	--	--	--	--	--	--	--	--	--	■	--	■	--	--	--	--	--	--



SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

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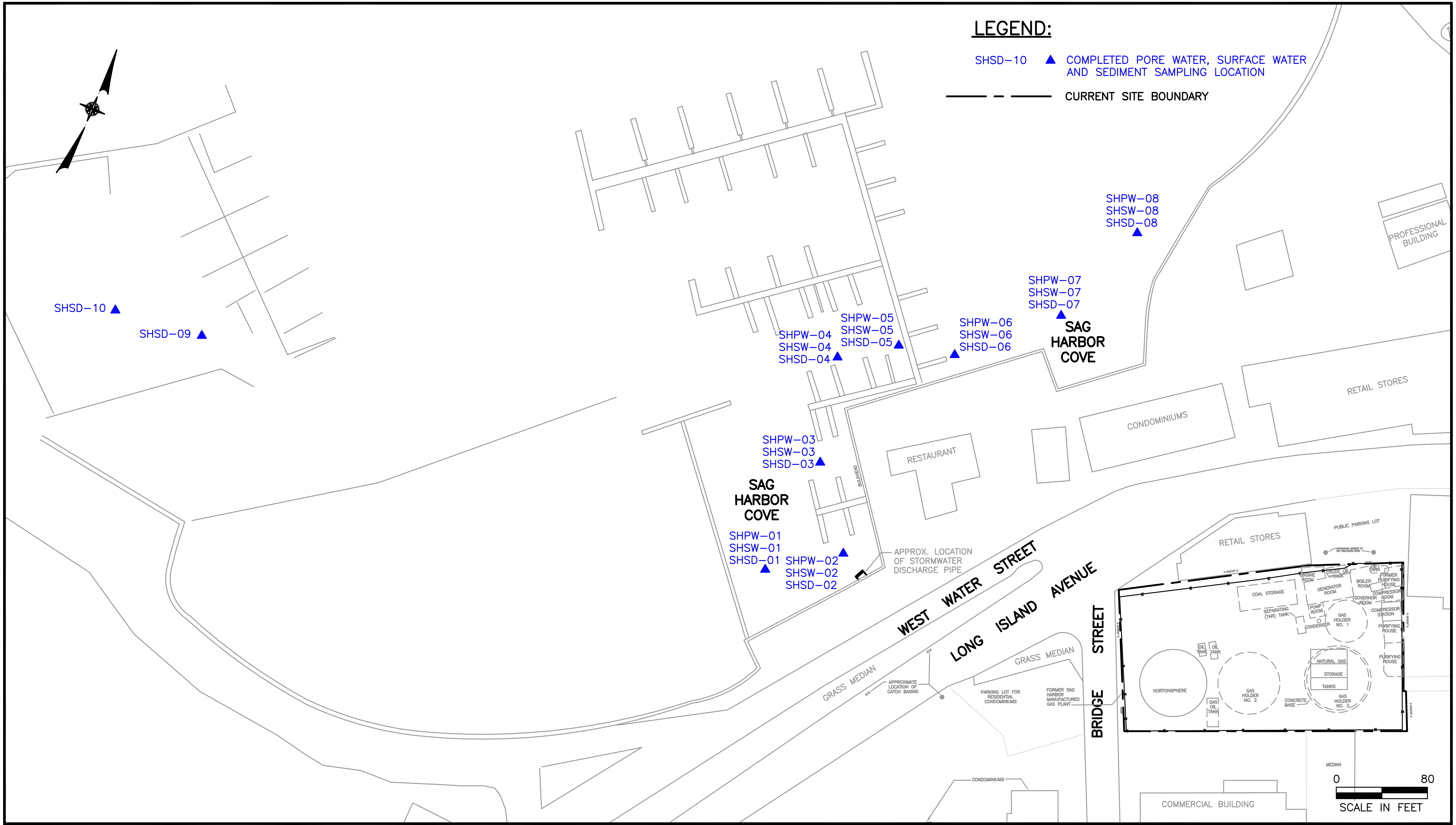
TAP WATER SAMPLE LOCATION

FIGURE 2-2

F:\1620\SAG HARBOR\D8D\1620-D8D-6A.dwg, 12/24/03 12:51:45 PM, ACaniano



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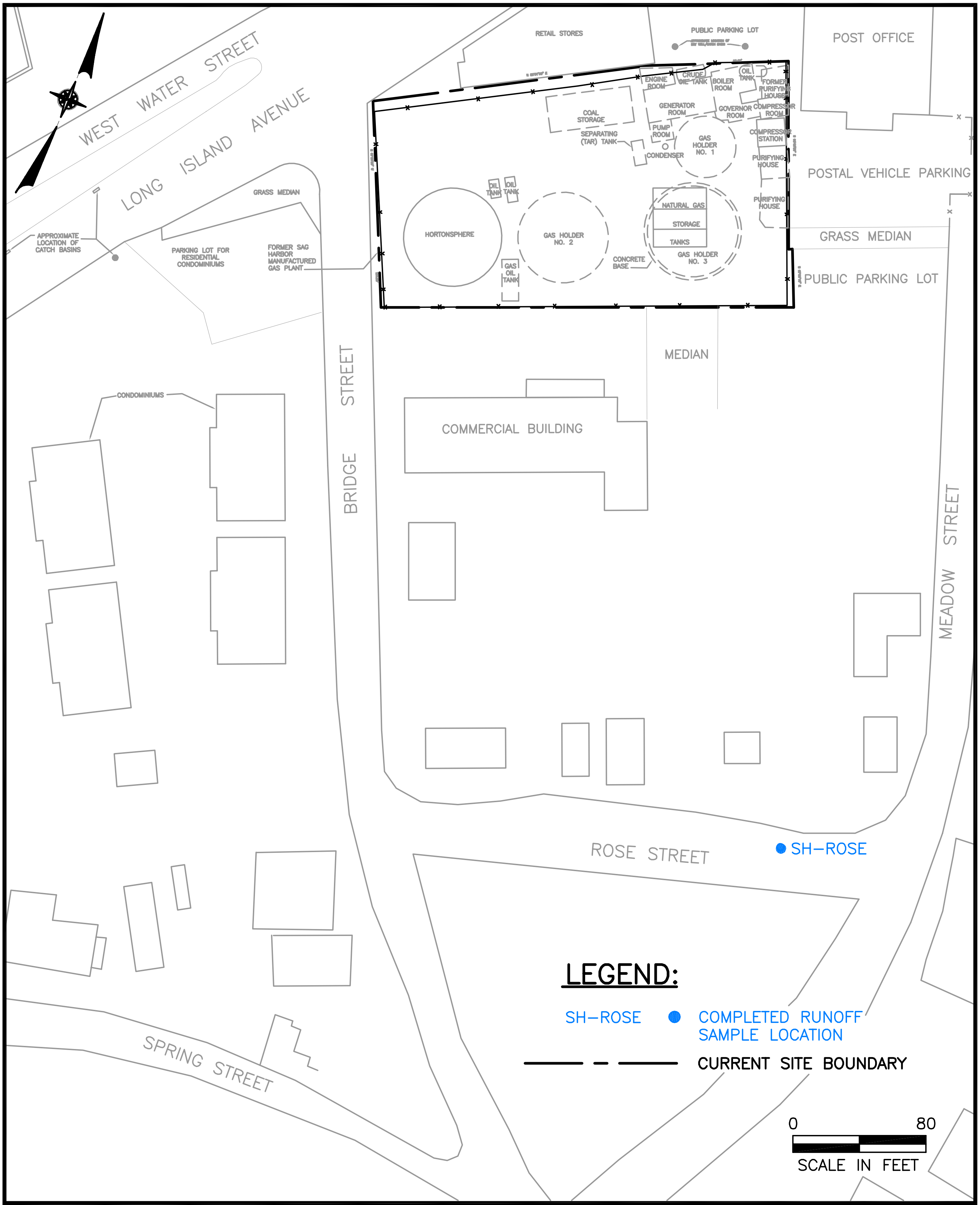
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

PORE WATER, SURFACE WATER AND SEDIMENT SAMPLE LOCATION MAP

FIGURE 2-3



SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
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GROUNDWATER SEEP SAMPLE LOCATION MAP

FIGURE 2-4

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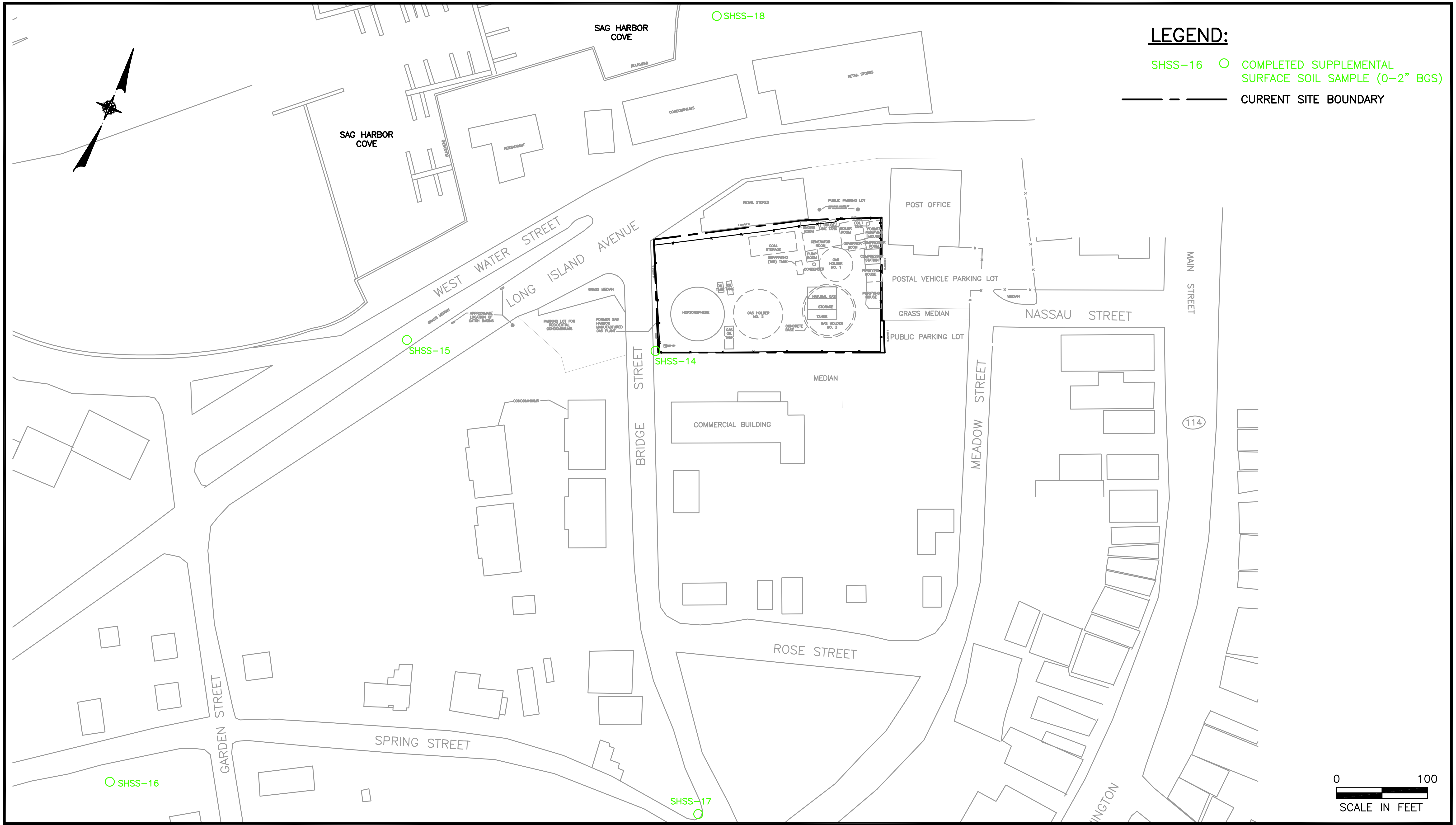

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SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

SURFACE SOIL SAMPLE LOCATION MAP

FIGURE 2-5

The analytical results associated with the subsurface soil sampling activities are presented and discussed in **Section 4.3.2**.

Groundwater Probes

A total of 29 groundwater probes were advanced off-site. The approved work plan called for the installation of 12 off-site groundwater probes (one north of the site, two northwest of the site, two west of the site, three south of the site, and four southeast of the site). However, based on preliminary analytical results from the initial 12 groundwater probes, it was determined in consultation with the NYSDEC that 17 additional groundwater probes were warranted in various locations to further define the extent of off-site migration of chemical constituents. These additional groundwater probes included six placed to the north of the site, four placed to the west of the site, one placed southwest of the site, two placed south of the site, three placed southeast of the site and one placed east of the site.

In general, depending on topography, drilling conditions and the depth to the water table, the probes were initially advanced to target depths just below the groundwater interface (shallow groundwater zone) and approximately 30 feet below the interface (intermediate groundwater zone). However, based on preliminary groundwater data, selected probes were also advanced to deeper groundwater zones. A total of 65 groundwater probe samples were selected for analysis. The analytical results associated with the groundwater probe sampling activities conducted off-site are presented and discussed in **Section 4.3.3.**

Groundwater Monitoring Wells

In order to further characterize off-site groundwater conditions, a total of eight monitoring wells were installed in four well cluster locations (SHMW-10S,I through SHMW-13S,I). The depth of the shallow wells depended upon topography, depth to the water table, and on the presence of low permeability materials. Shallow wells were installed to depths ranging from 6.5 to 15 feet bgs. Intermediate wells were installed to approximately 45 feet bgs. Subsurface soil sampling was conducted in monitoring well boreholes in order to characterize subsurface conditions in locations that had not previously been characterized. Boring logs for the monitoring wells are included in **Appendix A**. The new monitoring wells, as well as all of the existing off-site monitoring wells, were sampled as part of the off-site monitoring well sampling program. The analytical results associated with the groundwater samples are presented and discussed in **Section 4.3.3.**

Pore Water Samples

Eight pore water samples were collected from Sag Harbor Cove in order to evaluate the area as a potential receptor of chemical constituents. Samples were collected approximately during low tide. The analytical results associated with these samples are presented and discussed in **Section 4.3.4.**

Surface Water and Sediment Samples

Sixteen surface water samples and eighteen sediment samples were collected from Sag Harbor Cove. Surface water and sediment samples were generally taken from the same locations as pore water samples, with the exception of two additional sediment samples (SHSD-09 and SHSD-10) that were taken at locations further southwest in Sag Harbor Cove to further define background conditions. The analytical results associated with surface water and sediment samples are presented and discussed in **Section 4.3.5** and **Section 4.3.6**, respectively**.**

Groundwater Seep Sampling

Rose Street, located to the south of the former MGP site, is known to routinely have flooding and groundwater seeps in relation to high groundwater conditions. In consultation with the NYSDEC, one “groundwater” sample (SHROSE-01) was collected from a depression adjacent to the north side of Rose Street that had accumulated surface water associated with groundwater seeps from the area. The analytical results associated with this sample are presented and discussed in **Section 4.3.7**.

Air Sampling

Twenty-five indoor ambient air samples and ten outdoor ambient air samples were collected from private residences and businesses along Long Island Avenue, Bridge Street, Meadow Street and Rose Street. One-hour composite samples were typically collected from each structure. However, 8-hour composite samples were collected where feasible based on access considerations. At least one outdoor composite ambient air sample was collected during each day that indoor air sampling was conducted. All samples were analyzed for volatile organic compounds (VOCs) and naphthalene. The analytical results associated with the ambient air samples are presented and discussed in **Section 4.3.8**.

Tap Water Sampling

In consultation with the NYSDEC and NYSDOH, KeySpan conducted a private water supply well and basement survey within an area approximately bounded by Spring Street to the south, Garden Street to the west, Sag Harbor Cove to the north, and Main Street to the east. Based on the findings of this survey, it was determined that two residences were utilizing private water supply wells. As a result, in consultation with the NYSDEC and NYSDOH, tap water sampling activities were conducted at these two residences. A filtration device was in use at one of the residences. Therefore, samples were taken upstream (SHTW-01) and downstream (SHTW-01A) of the device. The analytical results associated with the tap water sampling activities are presented and discussed in **Section 4.3.9.**

2.5 Air Monitoring

During the completion of on-site hollow stem auger drilling 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 100-foot intervals around the site perimeter and recorded in a project field book.

During field activities that utilized the hollow stem auger drilling method, calibrated air monitoring instruments were also employed to monitor for potential releases of VOCs and/or dust related to these operations. Upwind and downwind air monitoring stations were established at each drilling location. 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 quantitatively measure any VOCs emanating 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 have been retained in the project files. All data from the stationary air monitoring stations were electronically downloaded to the on-site computer station at the conclusion of the day's work. This information is also available in the project files.

2.6 Private Well and Basement Survey

As previously mentioned in **Section 2.4**, a private water supply well and basement survey was conducted in the vicinity of the former MGP site. In consultation with the NYSDEC and NYSDOH, the survey was conducted within an area approximately bounded by Spring Street to the south, Garden Street to the west, Sag Harbor Cove to the north, and Main Street to the east. The purpose of the survey was to identify the presence of any unregistered private water supply wells in the vicinity of the site, as well as to identify the extent to which groundwater may be infiltrating the basements of the structures in close proximity to the former MGP site. The findings of the private water supply well and basement survey are discussed in **Section 5.2**.

2.7 Water Level Measurements

Groundwater level measurements were recorded from monitoring wells on three different occasions. Measurements were taken at a notch in the inner casing or from a point on the northernmost side of the inner casing of each monitoring well. Water level measurements were recorded at surveyed measuring points using a Solinst TM water level indicator to an accuracy of 0.01 foot. Water level data is summarized in **Table 2-5**.

2.8 Surveying and Mapping

All existing and newly installed monitoring wells, soil probes/borings, groundwater probes and surface soil locations were surveyed by a licensed surveyor and located on a base map. Top of casing measurements for well locations were surveyed and utilized in determining water table elevations. Surveyed locations are shown on **Drawing 2**, presented in the map pocket at the end of this section, as well as on **Figure 2-2** through **Figure 2-5**.

2.9 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 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.

Analytical data for soil and water samples was transmitted by the laboratory, Mitkem Corporation, in both hard copy and electronic disk deliverable (EDD) format. The EDD was submitted in a database file (dbf) format for direct import into GIS/Key. Analytical data for air samples was also transmitted by the laboratory, Air Toxics Ltd., in both hard copy and electronic disk deliverable (EDD) format. However, the EDD was submitted in portable document format (pdf) and the data was manually entered into GIS/Key. Once the data was imported into

TABLE 2-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
GROUNDWATER MEASUREMENTS AND CALCULATED ELEVATIONS

MONITORING WELL ID	DATE OF MEASUREMENT	TIDE	MEASURING POINT ELEVATION (feet above MSL)	DEPTH TO WATER (feet)	WATER ELEVATION (feet above MSL)
MW-01	5/16/02	HIGH	4.88	1.08	3.80
	5/16/02	LOW		1.18	3.70
	5/17/02	HIGH		1.10	3.78
	5/20/02	LOW		0.94	3.94
MW-02	5/16/02	HIGH	4.21	0.19	4.02
	5/16/02	LOW		0.33	3.88
	5/17/02	HIGH		0.20	4.01
	5/20/02	LOW		0.09	4.12
MW-03	5/16/02	HIGH	4.30	1.54	2.76
	5/16/02	LOW		1.54	2.76
	5/17/02	HIGH		1.58	2.72
	5/20/02	LOW		1.27	3.03
MW-04	5/16/02	HIGH	3.98	0.14	3.84
	5/16/02	LOW		0.16	3.82
	5/17/02	HIGH		0.17	3.81
	5/20/02	LOW		0.09	3.89
MW-05	5/16/02	HIGH	4.58	1.56	3.02
	5/16/02	LOW		1.24	3.34
	5/17/02	HIGH		1.30	3.28
	5/20/02	LOW		0.87	3.71
MW-06	5/16/02	HIGH	5.18	1.34	3.84
	5/16/02	LOW		1.35	3.83
	5/17/02	HIGH		1.45	3.73
	5/20/02	LOW		0.97	4.21
SHMW-01S	5/16/02	HIGH	4.09	1.04	3.05
	5/16/02	LOW		1.88	2.21
	5/17/02	HIGH		1.10	2.99
	5/20/02	LOW		0.96	3.13
SHMW-01I	5/16/02	HIGH	4.13	1.91	2.22
	5/16/02	LOW		2.17	1.96
	5/17/02	HIGH		1.85	2.28
	5/20/02	LOW		2.38	1.75
SHMW-02I	5/16/02	HIGH	4.63	2.04	2.59
	5/16/02	LOW		2.85	1.78
	5/17/02	HIGH		2.02	2.61
	5/20/02	LOW		2.51	2.12
SHMW-02D	5/16/02	HIGH	4.66	2.32	2.34
	5/16/02	LOW		3.05	1.61
	5/17/02	HIGH		2.26	2.40
	5/20/02	LOW		2.71	1.95

TABLE 2-5 (continued)
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

GROUNDWATER MEASUREMENTS AND CALCULATED ELEVATIONS

MONITORING WELL ID	DATE OF MEASUREMENT	TIDE	MEASURING POINT ELEVATION (feet above MSL)	DEPTH TO WATER (feet)	WATER ELEVATION (feet above MSL)
SHMW-03S	5/16/02	HIGH	4.80	2.86	1.94
	5/16/02	LOW		3.58	1.22
	5/17/02	HIGH		2.81	1.99
	5/20/02	LOW		3.33	1.47
SHMW-03I	5/16/02	HIGH	4.87	3.46	1.41
	5/16/02	LOW		3.62	1.25
	5/17/02	HIGH		3.49	1.38
	5/20/02	LOW		3.36	1.51
SHMW-04S	5/16/02	HIGH	5.27	4.70	0.57
	5/16/02	LOW		3.81	1.46
	5/20/02	LOW		3.49	1.78
SHMW-04I	5/16/02	HIGH	5.13	3.05	2.08
	5/16/02	LOW		3.80	1.33
	5/20/02	LOW		3.51	1.62
SHMW-05S	5/16/02	HIGH	5.79	3.94	1.85
	5/16/02	LOW		3.85	1.94
	5/17/02	HIGH		3.91	1.88
	5/20/02	LOW		3.44	2.35
SHMW-05I	5/16/02	HIGH	5.60	3.61	1.99
	5/16/02	LOW		4.08	1.52
	5/17/02	HIGH		3.56	2.04
	5/20/02	LOW		3.46	2.14
SHMW-06S	5/16/02	HIGH	4.16	0.55	3.61
	5/16/02	LOW		0.80	3.36
	5/17/02	HIGH		0.57	3.59
	5/20/02	LOW		0.45	3.71
SHMW-06I	5/16/02	HIGH	4.15	1.85	2.30
	5/16/02	LOW		2.45	1.70
	5/17/02	HIGH		1.81	2.34
	5/20/02	LOW		2.13	2.02
SHMW-07S	5/16/02	HIGH	4.63	0.63	4.00
	5/16/02	LOW		0.70	3.93
SHMW-07I	5/16/02	HIGH	4.72	2.26	2.46
	5/16/02	LOW		2.80	1.92
SHMW-08S	5/16/02	HIGH	4.93	0.62	4.31
	5/16/02	LOW		0.73	4.20
	5/17/02	HIGH		0.65	4.28
	5/20/02	LOW		0.37	4.56

TABLE 2-5 (continued)

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

GROUNDWATER MEASUREMENTS AND CALCULATED ELEVATIONS

MONITORING WELL ID	DATE OF MEASUREMENT	TIDE	MEASURING POINT ELEVATION (feet above MSL)	DEPTH TO WATER (feet)	WATER ELEVATION (feet above MSL)
SHMW-08I	5/16/02	HIGH	4.15	2.36	1.79
	5/16/02	LOW		3.02	1.13
	5/17/02	HIGH		2.28	1.87
	5/20/02	LOW		2.58	1.57
SHMW-09S	5/16/02	HIGH	4.03	1.61	2.42
	5/16/02	LOW		1.60	2.43
	5/17/02	HIGH		1.68	2.35
SHMW-09I	5/16/02	HIGH	3.72	1.80	1.92
	5/16/02	LOW		2.28	1.44
	5/17/02	HIGH		1.81	1.91
	5/20/02	LOW		1.96	1.76
SHMW-10S	5/16/02	HIGH	5.69	4.61	1.08
	5/16/02	LOW		5.51	0.18
	5/17/02	HIGH		4.56	1.13
	5/20/02	LOW		5.26	0.43
SHMW-10I	5/16/02	HIGH	5.69	4.34	1.35
	5/16/02	LOW		5.76	-0.07
	5/17/02	HIGH		4.08	1.61
	5/20/02	LOW		5.38	0.31
SHMW-11S	5/16/02	HIGH	5.51	5.58	-0.07
	5/16/02	LOW		6.19	-0.68
	5/17/02	HIGH		5.56	-0.05
	5/20/02	LOW		6.01	-0.50
SHMW-11I	5/16/02	HIGH	5.57	5.51	0.06
	5/16/02	LOW		6.58	-1.01
	5/17/02	HIGH		5.39	0.18
	5/20/02	LOW		6.30	-0.73
SHMW-12S	5/16/02	HIGH	3.10	-0.14	3.24
	5/16/02	LOW		-0.14	3.24
	5/17/02	HIGH		-0.04	3.14
	5/20/02	LOW		-0.29	3.39
SHMW-12I	5/16/02	HIGH	2.88	0.13	2.75
	5/17/02	HIGH		0.48	2.40
	5/20/02	LOW		0.79	2.09
SHMW-13S	5/16/02	HIGH	4.43	0.15	4.28
	5/16/02	LOW		0.68	3.75
	5/17/02	HIGH		0.72	3.71
	5/20/02	LOW		0.75	3.68
SHMW-13I	5/16/02	HIGH	4.47	1.80	2.67
	5/16/02	LOW		2.31	2.16
	5/17/02	HIGH		1.77	2.70
	5/20/02	LOW		2.02	2.45

GIS/Key, reports were generated and checked against the hard copy data packages to ensure data integrity and completeness.

2.10 Data Validation/Data Usability

All analytical data packages submitted by both laboratories, Mitkem Corporation Inc., and Air Toxics Ltd, were validated in accordance with New York State Department of Environmental Conservation (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 meets the qualifications required by the New York State Department of Environmental Conservation to perform data validation.

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

2.10.1 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, pore water, surface water, and sediment samples. Sample collection was performed in accordance with the procedures set forth in the approved Work Plans. 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 Plans as well as NYSDEC ASP QA/QC requirements. The ambient air samples were analyzed by Air Toxics Ltd, a subcontractor to D&B, in accordance with a modified EPA Method TO-14 in order to include naphthalene in the compound list. Mitkem and Air Toxics are New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified for all analyses performed as part of this project, as well as NYSDOH Contract Laboratory Program (CLP) certified.

A summary of the analytical sampling program was previously presented on **Table 2-3** and **Table 2-4**. The environmental samples were primarily analyzed for the following parameters:

Sample Type	**Analytical Parameters**
Geoprobe Groundwater	BTEX, PAHs
Monitoring Well Groundwater	BTEX, PAHs, RCRA metals, TCN and FCN
Soil Borings (Subsurface Soil)	BTEX, PAHs, RCRA metals and TCN
Surface Soil	BTEX, PAHs, RCRA metals and TCN
Ambient Air	Volatile organics and naphthalene
Tap Water	VOA, SVOA, RCRA metals and TCN
Groundwater Seep	VOA and SVOA
Surface Water, Pore Water, Sediment	BTEX and PAHs, TOC for sediment samples

In addition to the above analyses, several of the monitoring well samples were also analyzed for dissolved gases and wet chemistry parameters. Several subsurface soil samples were also analyzed for the full TCL and TAL parameters. Analytical methods and detection limits are presented in **Appendix B**.

2.10.2 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 in support of site characterization, as well as the future evaluation of appropriate remedial alternatives. The data was also utilized to monitor for the health and safety of workers at the site and potential receptors off-site during the field program. This objective was achieved by designing a sampling program to encompass the entire site and surrounding area. The laboratories selected for analysis needed to be both NYSDOH ELAP-certified for organic and inorganic parameters and NYSDOH CLP-certified. As discussed previously, both laboratories, Mitkem and Air Toxics, were properly 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 that 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.).

2.10.3 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 the reports are maintained in the project files.

All environmental samples results, as well as QA/QC results, were reviewed to yield a “100% validation” as required by the work plan.

Overall, the quality of the data was good and the results were deemed usable for environmental assessment purposes. The findings of the validation process are summarized below.

General Findings

Sample analyses were performed within the NYSDEC 10/95 ASP specified holding times, with the exception of the extraction of the PAH fraction of sample SHSB-37 (14-16). The

PAH analysis of this sample was originally placed on hold and the authorization to proceed with the sample analysis was not given until after the holding times had expired. PAH results for this sample have been qualified as estimated.

All calibrations (initial and continuing) were run in accordance with the specified methods.

Several samples had surrogate recoveries outside QC limits. The samples were reanalyzed as required by the NYSDEC ASP. 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 best set of results have been included in the data summary tables.

Several of the monitoring well samples required free cyanide analysis, however if the total cyanide result was non-detect than the free cyanide analysis was not performed.

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

LEGEND:

MW-01	⊞	EXISTING PIEZOMETER/WELL LOCATION FROM PREVIOUS INVESTIGATION
SHSB-01	●	EXISTING SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING)
SHSS-01	○	EXISTING SURFACE SOIL SAMPLING LOCATION
SHMW-01S	⊕	EXISTING GROUNDWATER MONITORING WELL LOCATION (SHALLOW ZONE)
SHMW-01I	⊕	EXISTING GROUNDWATER MONITORING WELL LOCATION (INTERMEDIATE ZONE)
SHMW-01D	⊕	EXISTING GROUNDWATER MONITORING WELL LOCATION (DEEP ZONE)
SHGP-01S	⌖	EXISTING GROUNDWATER PROBE LOCATION (SHALLOW ZONE)
SHGP-01I	⌖	EXISTING GROUNDWATER PROBE LOCATION (INTERMEDIATE ZONE)
SHGP-01D	⌖	EXISTING GROUNDWATER PROBE LOCATION (DEEP ZONE)
SHSV-01	✚	EXISTING SOIL VAPOR/GAS PROBE LOCATION
SHAA-01	◇	EXISTING AMBIENT AIR SAMPLING LOCATION
SHAA-03	◇	APPROXIMATE LOCATION OF SUPPLEMENTAL INDOOR AIR SAMPLE
SHMW-10S	⊕	COMPLETED SUPPLEMENTAL GROUNDWATER MONITORING WELL LOCATION (SHALLOW ZONE)
SHMW-10I	⊕	COMPLETED SUPPLEMENTAL GROUNDWATER MONITORING WELL LOCATION (INTERMEDIATE ZONE)
SHGP-31S	⌖	COMPLETED SUPPLEMENTAL GROUNDWATER PROBE LOCATION (SHALLOW ZONE)
SHGP-31I	⌖	COMPLETED SUPPLEMENTAL GROUNDWATER PROBE LOCATION (INTERMEDIATE ZONE)
SHGP-34 D1,D2,D3	⌖	COMPLETED SUPPLEMENTAL GROUNDWATER PROBE LOCATION (DEEP ZONES)
SHSB-20	●	COMPLETED SUPPLEMENTAL SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING)
SHSS-14	○	COMPLETED SUPPLEMENTAL SURFACE SOIL SAMPLE (0-2" BGS)
SHPW-01 SHSW-01 SHSD-01	▲	COMPLETED PORE WATER, SURFACE WATER AND SEDIMENT SAMPLING LOCATION
SHCR-01	⌖	COMPLETED GROUNDWATER CONDUCTIVITY/RESISTIVITY PROBE LOCATION
SHSV-06		SURVEY DATA NOT AVAILABLE (LOCATION APPROXIMATE)
	⬚	APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
	▭	LOCATION OF EXISTING STRUCTURE
	— – —	CURRENT SITE BOUNDARY
	—x—x—x—	FENCE

SOURCE: BASE MAP SITE SURVEY DATA PROVIDED BY KEYSPAN ENERGY SURVEY DIVISION. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON: 1916 SITE PLAN (DWG. 2907); 1915 SURVEY BY THE TITLE GUARANTEE & TRUST CO. OF N.Y. (DWG. 2290); AND SANBORN MAPS.

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

OTHER SAMPLE LOCATIONS ALSO EXIST BEYOND THE AREA DEPICTED ON THIS MAP. THESE SAMPLE LOCATIONS HAVE BEEN INCORPORATED ONTO OTHER FIGURES.

NO.	DATE	REVISION	INT.

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.

PROJECT ENGINEER: T.F.	DRAWN BY: L.V.G.
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SAG HARBOR FORMER MGP SITE
FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

SAMPLE LOCATION MAP

PROJECT NO.: 1620-D8
DATE: DECEMBER 2003
SCALE: 1"=40'
DRAWING NO.: 2

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3.0 SITE GEOLOGY AND HYDROGEOLOGY

3.1 Introduction

The following section presents the findings as well as a discussion and interpretation of the geologic and hydrogeologic data collected as part of the initial and supplemental field programs. However, the discussion presented in this section focuses particularly on those aspects of site hydrogeology that have been clarified based on the supplemental field program. Data generated from the field programs that are utilized in this evaluation include the following:

- Logs from completed probes, borings and monitoring wells
- Geotechnical analysis of selected soil samples
- Hydraulic head measurements from existing and newly installed monitoring wells
- Water level measurements obtained during a 48-hour tidal survey
- Data from groundwater conductivity/resistivity probes

This data was evaluated and interpreted in conjunction with the characterization of the geology/hydrogeology of the study area and surrounding environs as presented in June 2002 RI Report.

Based on geologic information collected during the initial and supplemental field programs, four geologic cross-sections of the Sag Harbor site and adjacent areas were generated which are provided as **Drawings 3A** and **3B** located in map pockets at the end of this section. **Drawing 3A** includes two southwest-northeast trending cross sections, which are generally perpendicular to the predominant shallow groundwater flow direction from southeast to northwest. **Drawing 3B** includes two southeast-northwest trending cross sections, generally parallel to the predominant shallow groundwater flow direction through the site.

The locations of the probes, borings and monitoring wells referenced in this section are shown on **Drawing 2,** which was presented in the map pocket at the end of **Section 2.0**. Logs for borings completed during the supplemental field program are included in **Appendix A** of this report. Boring logs completed during the initial field program were provided in **Appendix C** of the June 2002 RI Report.

3.2 Site Stratigraphy

Fill Deposits

As discussed in the June 2002 RI Report, the Sag Harbor area consisted of tidal marshland which was filled in the 1730s to allow for development. As a result, the site and surrounding area contains a shallow layer of fill material typically overlaying marsh deposits of peat and silt/clay which are discussed below. In areas where the marsh deposits are absent, the fill material rests directly upon sand more typical of beach and/or glaciofluvial sediments.

The fill material encountered throughout the Sag Harbor site is highly variable in character and thickness but, as illustrated on **Drawings 3A** and **3B,** is generally present throughout the site and is approximately 5 to 8 feet thick. Off-site, the fill material, where present, ranges from approximately 4 to 8 feet in thickness. The initial field program found that the fill consists primarily of sand but also includes varying amounts of silt, clay, gravel and cobbles. Also present were anthropogenic (of human origin) material including varying amounts of coal, cinder, coal clinker, crushed rock (bluestone fragments), brick and wood. Organic material, such as decayed wood and roots were also present. Observations of the fill material from borings completed as part of the supplemental field program are consistent with these findings.

Staining, naphthalene/hydrocarbon-like odors and oily sheens were also commonly observed in the fill material within and adjacent to the site during the initial field program. Of the three borings completed on-site during the supplemental field program, only fill material in SHSB-20 exhibited a slight hydrocarbon-like odor with very light staining. Of the borings completed off-site during the supplemental field program, only fill material in SHSB-42, located north of the northeastern portion of the site, exhibited staining and a slight hydrocarbon-like odor.

Two shallow soil samples, SHMW-01S (0.5 to 1.5 feet) and SHMW-02D (1 to 3 feet), were collected during the initial field program in order to characterize the geotechnical properties of the fill. The total organic carbon (TOC) of the fill samples was relatively high at 3.4 percent and 10.8 percent, respectively. The fraction of organic content within soil is the dominant characteristic affecting the adsorption capacity of nonionic organic compounds such as BTEX and PAHs onto the soil matrix (S.S. Suthersan, 1997). Soil with a very low fraction of organic content will have a limited ability to adsorb and immobilize such organic contaminants. Higher organic content indicates increased capacity for adsorption and immobilization of organic compounds. Results of the TOC analysis suggest the fill would have a relatively high adsorption capacity for BTEX and PAHs.

Furthermore, grain size analysis conducted on these samples found that the fill material contains appreciable amounts of silt and finer material, indicating a low to moderate hydraulic conductivity.

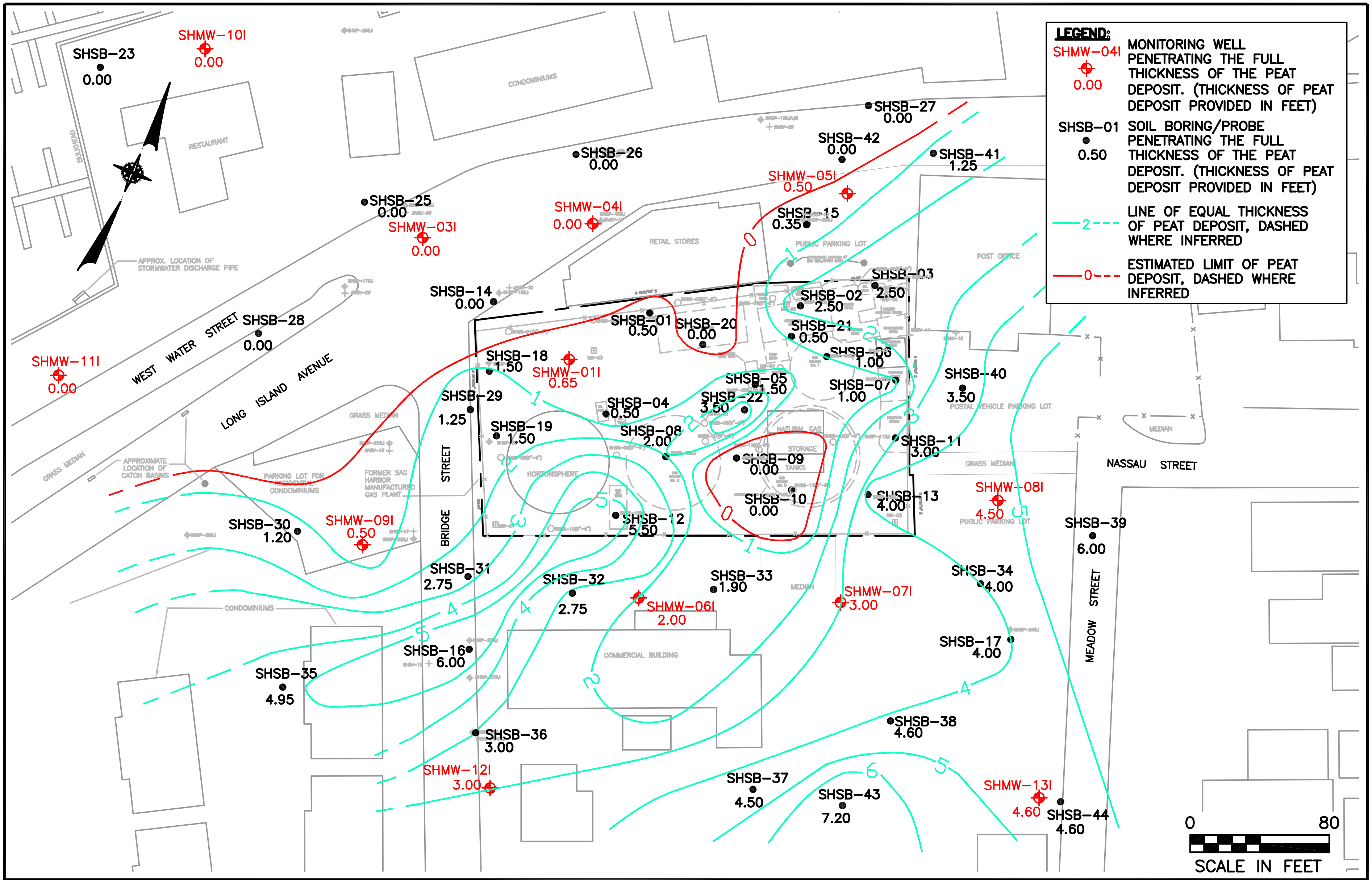
Peat/Silt/Clay Unit

A fairly continuous peat deposit which generally occurs in conjunction with fine-grained inorganic sediments consisting of silt, sandy silt, silty sand, clayey sand and clay (herein referred to as the silt/clay unit) underlies the fill unit throughout the majority of the site and much of the surrounding area. Collectively, the peat deposit and the silt/clay unit are known as the peat/silt/clay unit. The peat deposit was generally observed during the initial field program as a brown to black clay rich peat with a distinctive marsh-like or hydrogen sulfide-like odor. The top of the peat deposit was generally found between 7 and 8 feet bgs. The peat deposit as observed during the supplemental field program is generally consistent with the above description, but an occasional sand rich peat, such as at soil boring SHSB-44, as well as clay rich peat, was also noted. **Figure 3-1** presents a contour map depicting the estimated total thickness and extent of the peat deposit based on soil borings completed during the initial and supplemental field programs.

As indicated by the figure and consistent with the findings of the initial field program, the peat deposit appears to be thickest in the vicinity of the southwest corner of the site, such as at on-site soil boring SHSB-12 (5.5 feet) and off-site soil borings SHSB-16 (6.0 feet) and SHSB-35 (4.95 feet). As observed during the initial field program, it also appears to be fairly thick in the southeastern portion of the site, such as at on-site soil boring SHSB-13 (4.0 feet) and off-site soil borings SHSB-17 (4.0 feet), SHSB-34 (4.0 feet) and SHSB-39 (6.0 feet). The peat deposit appears to be thinnest or absent in the northern portions of the site, such as at initial field program soil borings SHSB-04 (0.5 foot) and SHMW-01 (0.65 foot). Furthermore, supplemental field program soil boring SHSB-20 indicates no evidence of a peat layer, however, the lack of recovery from 7 to 9 feet bgs makes such a determination inconclusive. The peat deposit also appears to be absent at initial field program soil probe locations SHSB-09 and SHSB-10, within the general vicinity of the former Gas Holder No. 3 in the southeastern portion of the site; again however, the recovery of soil samples at the intervals where the peat deposit would be expected was poor, making a determination as to the presence or absence of the peat deposit in this area inconclusive. Additionally, supplemental field program soil boring SHSB-22 exhibited 3.5 feet of peat, slightly to the northwest of the former Gas Holder No. 3.

As shown on **Figure 3-1** and consistent with the findings of the initial field program, the peat deposit appears to be absent to the north of the site, as indicated by soil borings SHMW-03I, SHMW-04I, SHMW-10I, SHSB-14, SHSB-25, SHSB-26 and SHSB-27. South of the site, the peat layer appears quite continuous with a thickness generally ranging from approximately 2 to 5 feet, reaching a maximum thickness of 7.2 feet at supplemental field program soil boring SHSB-43 located approximately 160 feet south of the site.

As mentioned earlier, the peat deposit generally transitions directly into the silt/clay unit, where the percent of peat and other organic materials decreases with depth. **Figure 3-2** is a contour map depicting the estimated total thickness and extent of the silt/clay unit. The initial field program identified the silt/clay unit as a generally brown silty fine sand with clay



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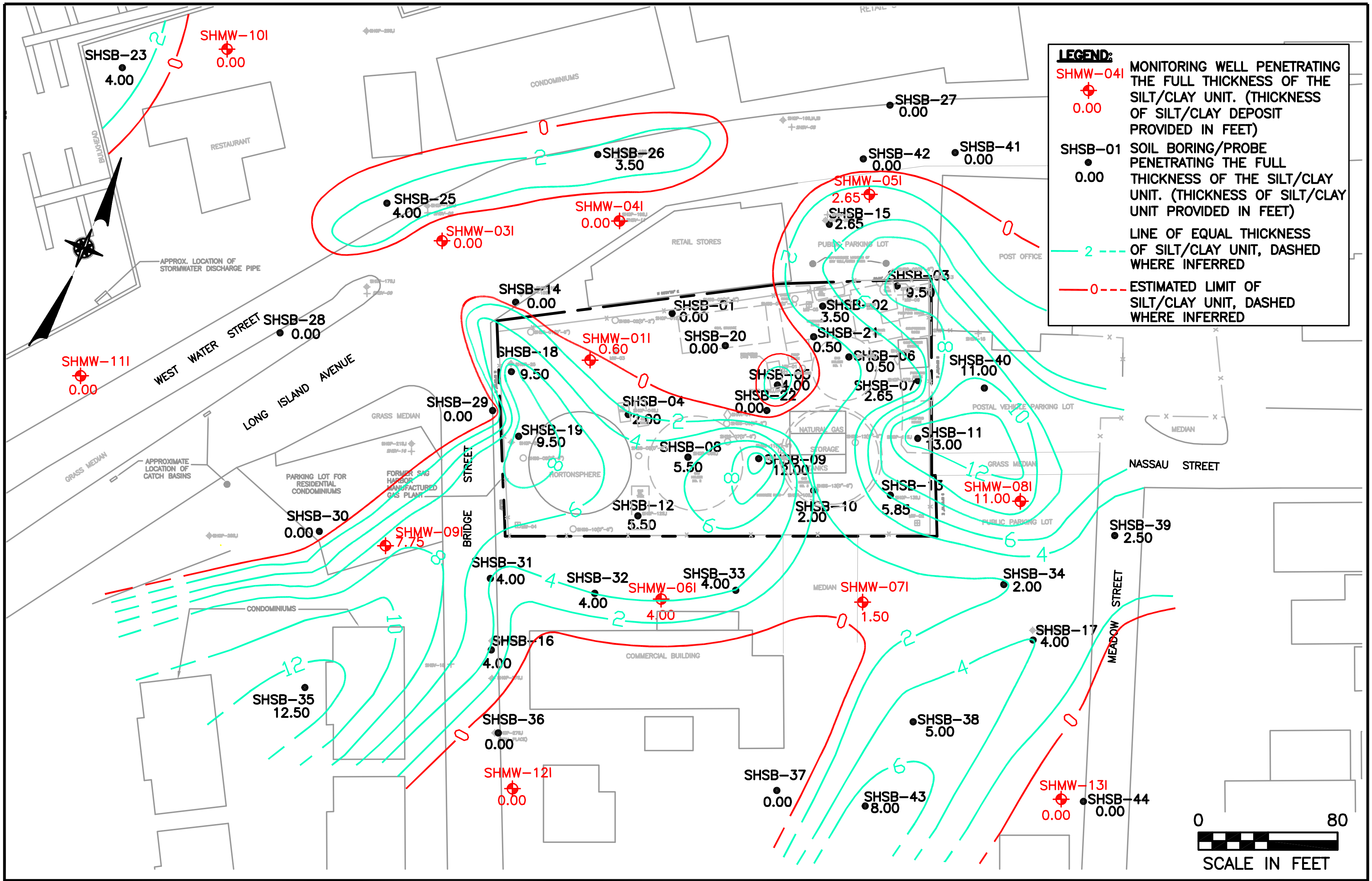
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

THICKNESS AND EXTENT OF THE PEAT DEPOSIT

FIGURE 3-1



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THICKNESS AND EXTENT OF THE SILT/CLAY UNIT

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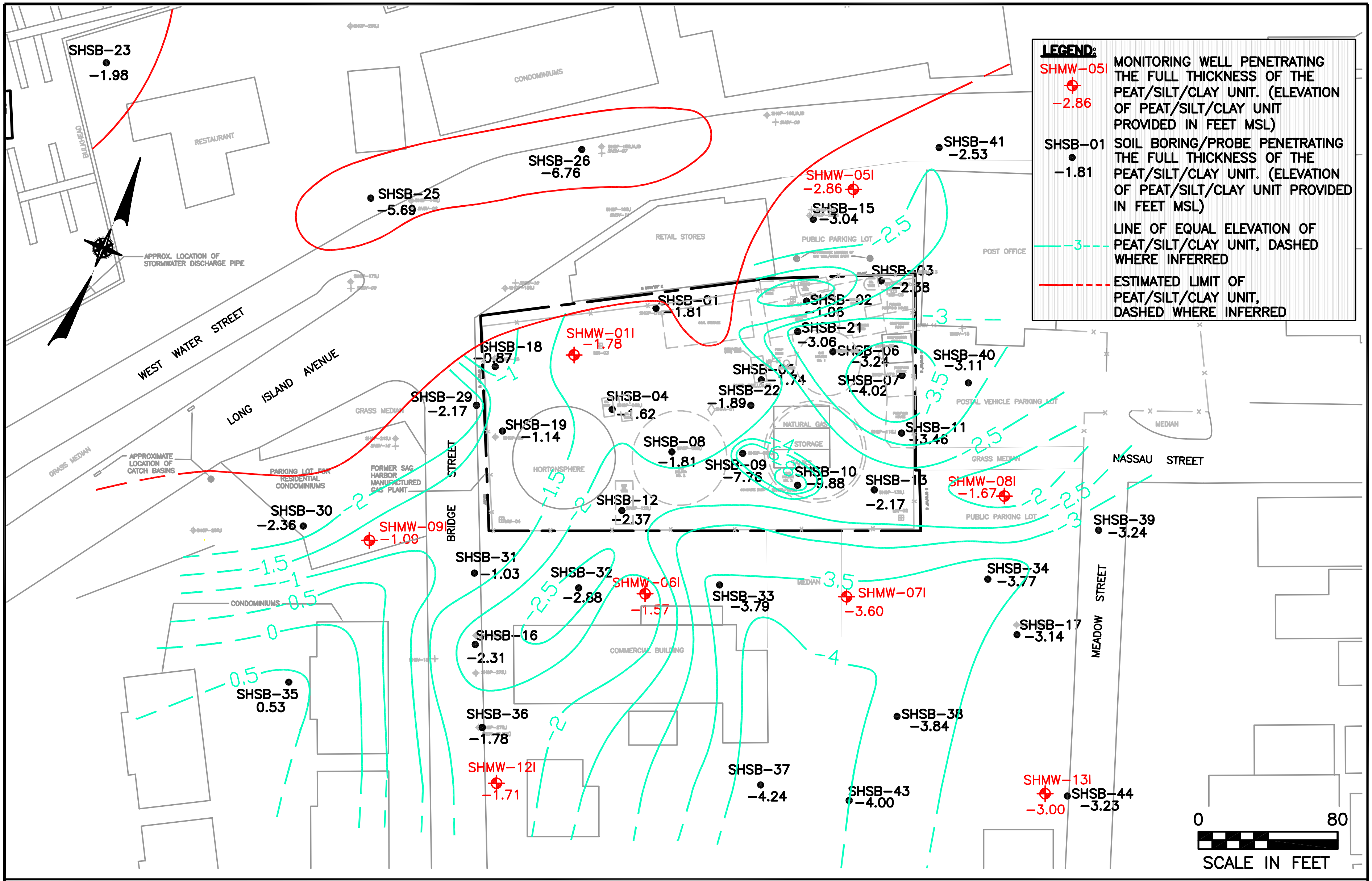
FIGURE 3-2

containing varying amounts of coarse sand and gravel, or as a dark brown silt being soft to slightly plastic in consistency, indicating a high percentage of clay. The silt/clay unit was observed in supplemental field program borings to be consistent with the above descriptions. However, a wider array of color variations was observed, including tan and reddish brown.

The thickness and extent of the silt/clay unit as presented in **Figure 3-2** is generally consistent with the findings of the initial field program. The thickness of the unit varies considerably across the site but appears to be thickest in the western and southern portions of the site, such as at SHSB-09 (12 feet) and SHSB-19 (9.50 feet), as well as off-site to the southwest. Furthermore, as indicated by SHSB-03 (9.50 feet), SHSB-11 (13 feet), SHSB-40 (11 feet) and SHMW-08I (11 feet), the silt/clay unit is also quite thick along the extreme eastern boundary of the site and off-site to the east.

Consistent with the initial field program, data suggests that the silt/clay unit appears to be less than 1-foot thick or possibly absent along the northwestern portion of the site, as indicated by SHSB-01, SHMW-01I and SHSB-20, as well as off-site to the northwest as indicated by SHSB-14, SHMW-03I and SHMW-04I. However, up to 4 feet of the silt/clay unit was observed at off-site supplemental field program soil borings SHSB-25 and SHSB-26, located on the north side of Long Island Avenue, and at SHSB-23, located north of West Water Street adjacent to Sag Harbor Cove. Consistent with the findings of the initial field program, the silt/clay unit appears to be fairly thin within and in the vicinity of former Gas Holder No. 1, as defined by soil borings SHSB-06 (0.5 foot) and SHSB-21 (0.5 foot), as well as former Gas Holder No. 3, as defined by soil borings SHSB-10 (2.0 feet) and SHSB-22 (0.0 feet). Where present, the silt/clay unit may act as a confining unit, limiting the vertical migration of MGP-related constituents.

A contour map depicting the surface elevation and extent of the collective peat/silt/clay unit is included as **Figure 3-3**. It should be noted that the elevation of the top of the peat/silt/clay unit appears to slope to the south from the southern portion of the site. In the southeastern portion of the site, in the former location of Gas Holder No. 3, the top of the peat layer appears to exist at approximately 2.2 feet below mean sea level. In the location of SHSB-38, to the east of the former Long Island Fisherman site, the top of the peat layer appears to exist at approximately



SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

ELEVATION OF THE PEAT/SILT/CLAY UNIT

FIGURE 3-3

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3.8 feet below mean sea level. As a result, this approximate 1.6 feet elevation change along the top of the peat layer, which acts as a confining unit when present in significant thicknesses, could influence fate and transport mechanisms. Similar conditions exist at SHSB-12 and SHSB-33, located south of the site and just north of the building on the former Long Island Fisherman site. Note that a trench appears to be present in the unit at SHSB-09 and SHSB-10. However, this is due mainly to the absence of the peat deposit at these locations, which, as described earlier, may be due to the lack of recovery at the intervals where the peat deposit would be expected.

Shallow Sand Unit

A deposit of fairly well sorted brown, fine to medium grained, quartz sand characteristic of the highly permeable glacial sands found throughout much of Long Island underlies the silt/clay unit. One sample, SHMW-02I (35 to 36 feet), was collected from the shallow sand unit during the initial field program for geotechnical analysis. The sample was found to be relatively low in organic matter, with a TOC content of only 0.20 percent, typical of Long Island glacial sand deposits. In addition, the sample exhibited very few silt/clay grains and an effective grain size (d_{10}) of 0.20 mm, indicating 90 percent of the sample consisted of grains larger than fine sand. Geotechnical analysis results for samples collected during the supplemental field program are presented on **Table 3-1**. As indicated by soil samples from the shallow sand unit, such as SHSB-42 (8 to 10 feet), SHSB-21 (11 to 13 feet) and SHSB-21 (49 to 51 feet), d_{10} values are between approximately 0.10 to 0.20 mm which is generally consistent with the values from the initial field program. Some exceptions are SHSB-20 (13 to 15 feet) and SHSB-20 (59 to 61 feet), which demonstrate few silt/clay grains but likely include greater proportions of fine and very fine sand. This data suggests that the shallow sand unit has relatively good water-transmitting properties, typical of glacial sand deposits found on Long Island. Average hydraulic conductivities for glacial sand deposits within the South Fork of Long Island range from 159 feet/day to 350 feet/day (USGS Water Supply Paper 2073).

As detailed in the June 2002 RI Report, the shallow sand unit, which extends to a depth of about 55 to 60 feet bgs, contains a series of fine sand and silt lenses encountered throughout its vertical extent. The presence of the fine sand/silt lenses interbedded with coarser sand is

TABLE 3-1

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

GEOTECHNICAL ANALYSIS RESULTS FOR SELECTED SOIL SAMPLES

Sample Identification		SHSB-24	SHSB-42	SHSB-43	SHSB-20	SHSB-20	SHSB-20	SHSB-21	SHSB-21	SHSB-22	SHSB-22
Depth (feet)		12-14	8-10	8-10	13-15	59-61	77-79	11-13	49-51	14-16	64-66
Date		4/16/02	4/15/02	4/16/02	3/21/02	3/22/02	3/25/02	3/27/02	3/28/02	4/1/02	4/2/02
CHARACTERISTIC	UNIT										
Sieve	%	1.95	1.35	3.11	9	7	1	5	3	6	2
Hyd (2 μ)	%	N/A	N/A	N/A	<1	<1	<1	1	<1	1	<1
d_{10}	mm	0.11	0.18	0.15	0.078	0.089	0.27	0.135	0.205	0.12	N/A

NOTES:

Sieve -	% sample particles passing 200 sieve (0.074 mm)
Hyd -	% sample particles finer than 2 μ as determined through hydrometer analysis
d_{10} -	Effective grain size : diameter at which 10% of sample particles are finer and 90% are coarser
% -	Percent
mm -	Millimeters
μ -	Micron
N/A -	Not analyzed
* -	d_{10} finer than endpoint of grain size analysis

consistent with the glacial stratigraphy of the Sag Harbor area. The fine sand/silt lenses vary from brown to tan silty fine sand to an almost pure silt deposit that is described as being soft to slightly plastic. Several fine sand/silt lenses are described as also containing clay. Additionally, a thin layer of peat was encountered at approximately 22 feet bgs at SHMW-07. Analysis conducted during the initial field program on SHMW-01I (36 to 38 feet), a soil sample characteristic of the majority of fine sand/silt lenses encountered at the site, indicated a relatively low TOC content of 0.4 percent and a d_{10} of less than 0.073 mm. These results indicate a relatively lower hydraulic conductivity when compared to the more sand-rich zones that comprise the majority of the shallow sand unit.

The initial field program found that the fine sand/silt lenses are most prevalent south and southwest of the site, and that the north-central and northeastern portions of the site appeared to be relatively free of the fine sand/silt lenses, as did the areas off-site to the northwest. However, stratigraphic data was limited in this off-site area during the initial field program. A review of the geologic cross sections on **Drawings 3A** and **3B** and the boring logs provided in **Appendix A** indicates that the sand/silt lenses are generally spread evenly around the study area. The sand/silt lenses are found on-site at approximately 55 feet bgs at soil borings SHSB-20 and SHSB-21. Furthermore, off-site soil borings northwest of the site, such as SHSB-23 through 26, indicate significant zones of silt and silt with sand, with as much as 19 feet of silt at SHSB-23.

While a number of fine sand/silt lenses were encountered, they appear to be generally thin, with the majority being 5 feet or less in thickness. There is little correlation between the thickness and the elevation of the encountered fine sand/silt lenses, suggesting that the majority are discontinuous throughout the site and surrounding area. However, as illustrated in cross-sections B-B' and C-C', a fairly continuous fine sand/silt lens appears to be present within the south-central portion of the site, at approximately 27 to 36 feet bgs. Furthermore, as mentioned above, and as illustrated in cross section C-C', there also appears to be a thick silt zone, occasionally observed to contain some sand, at approximately 40 feet bgs to the northwest of the site.

Although the fine sand/silt lenses do not likely represent a continuous effective confining unit with regard to the vertical movement of groundwater and/or MGP-related constituents throughout the site and surrounding areas, these more silt-rich lenses would have a lower hydraulic conductivity and may serve as "traps" for dense nonaqueous phase liquids (DNAPLs) that may have been released to the subsurface environment.

Deep Sand Unit

The majority of completed borings were terminated at or near 45 feet bgs during the initial field program, and at or near target depths of either 30 or 60 feet bgs during the supplemental field program. Therefore, the majority of completed borings did not penetrate into the deep sand unit, located below a depth of 55 to 60 feet bgs. However, one deep boring (SHMW-02D) was completed to a depth of 90 feet bgs within the central portion of the site during the initial field program, and three deep borings (SHSB-20, SHSB-21 and SHSB-22) were completed to depths of approximately 100 feet bgs in locations surrounding SHMW-02D during the supplemental field program. All on-site sample locations are displayed on **Drawing 2**. Based on these deep borings, the deep sand unit is similar in character to the shallow sand unit, generally consisting of a brown fine to coarse sand with no silt to a trace of silt. Fine sand/silt lenses were generally not encountered, although a number of slight very fine sand/silt lenses were encountered at approximately 87 feet bgs at soil boring SHSB-22.

Geotechnical analysis of soil samples from the deep sand unit (SHMW-02D [65 to 67 feet] and SHMW-02D [69 to 71 feet]) collected during the initial field program indicated only 2 to 4 percent of the samples consisted of grains finer than the openings on a number 200 sieve (0.074 mm), suggesting that the deep sand unit contains very few fines and has good water-transmitting properties. As indicated on **Table 3-1**, analysis of soil samples from the deep sand unit (SHSB-20 [77 to 79 feet] and SHSB-22 [64 to 66 feet]) collected during the supplemental field program shows strong agreement, with only 1 and 2 percent of the samples consisting of grains finer than 0.074 mm, respectively. TOC analysis of the initial field program samples indicated a relatively large variation in TOC from 2.4 percent at SHMW-02D (65 to 67 feet) to only 0.9 percent at SHMW-02D (69 to 71 feet). Glacial sand deposits found on Long Island contain relatively low TOC, typically less than 1.0 percent.

3.3 Groundwater Flow and Hydraulic Gradients

Based on depth to groundwater measurements collected during the supplemental field program, and consistent with results from the initial field program, groundwater within the Sag Harbor former MGP site is encountered at relatively shallow depths ranging from less than 0.5 foot bgs at monitoring wells MW-04 and MW-02, located in the extreme southwestern and southeastern corners of the site, respectively, to a maximum of 1.58 feet at MW-03, located in the northwest quadrant of the site. Surface water commonly ponds within the southwest corner, as well as areas along Bridge Street during and after periods of rainfall, which is further evidence of a shallow water table within the site and surrounding area.

Off-site to the north and northeast, depth to water levels increase to approximately 3.5 to 4.0 feet, partly due to a slight increase in ground elevation at these off-site locations, but also due to the fact that they are located in paved areas where precipitation is diverted to storm drains before infiltrating into the subsurface. Off-site monitoring wells to the south and southwest (i.e., SHMW-06S and SHMW-07S) indicate a relatively shallow water table, with depth to water levels ranging from 0.45 to 0.80 feet bgs in this area. In fact, the water level in monitoring well SHMW-12S was found to be above the top of the well casing, but below the ground surface at both low and high tide. Groundwater elevations were determined at SHMW-12S by measuring the distance from the top of the casing to the water level.

In addition to ground surface elevation and the amount of direct infiltration an area receives, another controlling factor influencing the depth to groundwater in a given area appears to be the presence or absence of the peat and/or silt/clay units described in **Section 3.2**. Where these units are present, such as in various on-site areas and in off-site areas to the south, groundwater drainage appears to be poor resulting in a high water table. In areas where the peat and/or silt/clay units are generally thin or absent, such as to the northwest, drainage is improved resulting in a lower water table.

The shallow groundwater zone located within and above the peat and silt/clay units is considered to be under unconfined water table conditions. However, due to the low permeable nature of this strata, the intermediate groundwater zone located below the units is considered to be under partial confining conditions.

In order to verify groundwater flow patterns and the influence of tidal actions on such patterns as determined during the initial field program, four groundwater contour maps were generated during high and low tide using synoptic water levels collected from the groundwater monitoring network. The water level data is summarized on **Table 2-5**. Additionally, conductivity/resistivity probing was completed at three on-site locations in order to identify the possible existence and depth of a saltwater/freshwater interface.

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: 1) the tidal range of the surface water; 2) the degree to which the aquifer is in hydraulic communication with the surface water; 3) the thickness and hydraulic conductivity of the aquifer; 4) the net prevailing hydraulic gradient at the seepage face; and 5) the configuration of the shoreline (M.E. Serfes, 1987).

A detailed discussion of a tidal survey completed as part of the initial field program is presented in the June 2002 RI report. In summary, the survey found that:

- Sag Harbor Cove has a tidal range of approximately 2 1/2 feet within the site.
- Tidal influences appear to be greatest in intermediate and deep monitoring wells screened below the peat and silt/clay units.

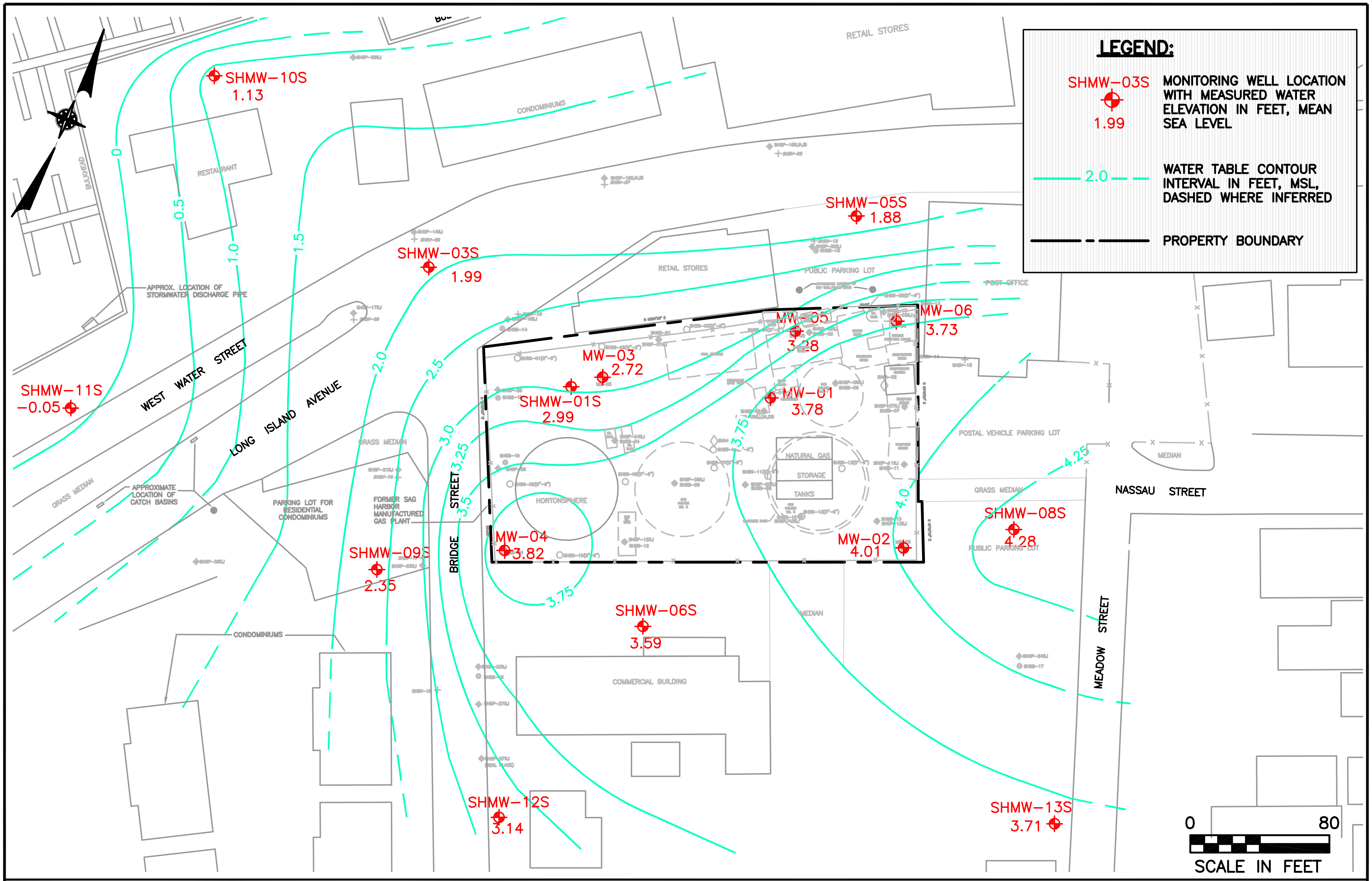
- Shallow groundwater exhibits the greatest tidal fluctuations in monitoring wells located closest to Sag Harbor Cove and in areas where the peat and silt/clay units are absent.
- Shallow groundwater located further inland and above the peat and silt/clay units exhibits virtually no tidal influence. The lack of tidal influence on shallow groundwater in areas containing the peat and silt/clay units is likely due in part to the low permeable nature of this strata.

Horizontal Groundwater Flow Patterns

Based on synoptic water level measurements, four groundwater contour maps were created, with two water table maps based on measurements from 16 shallow water table wells, and two intermediate zone (potentiometric surface) maps based on measurements from 12 intermediate wells. The wells represent the same monitoring well network measured during the initial field program with the addition of four new monitoring well clusters, SHMW-10 through 14 (see **Drawing 2** for locations). In general, the water table maps represent the shallow groundwater zone which is located within and above the peat and silt/clay units. The intermediate zone potentiometric surface maps represent the intermediate groundwater zone located below the peat and silt/clay units to a depth of approximately 45 feet bgs.

Groundwater Flow at High Tide

Two high tide groundwater contour maps were produced using data collected on May 17, 2002, with **Figure 3-4** presenting a water table contour map and **Figure 3-5** presenting a potentiometric surface map for the intermediate groundwater zone. Both maps reflect wet conditions where approximately 2 inches of rain fell in the previous 4 days according to rainfall data collected by the on-site weather station. The initial field program found that shallow groundwater appears to flow primarily in a west to northwesterly direction within the site and in off-site areas to the west and northwest. Also noted was a southwesterly component of flow in the southern portion of the site and a more northerly flow component of shallow groundwater in the northern half of the site. As indicated on **Figure 3-4**, the supplemental high tide water table contour map is quite consistent with these observations, but adds particular emphasis on the general flow towards Sag Harbor Cove and the southwesterly component of flow in the southern



SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

WATER TABLE CONTOUR MAP

HIGH TIDE - MAY 17, 2002

FIGURE 3-4

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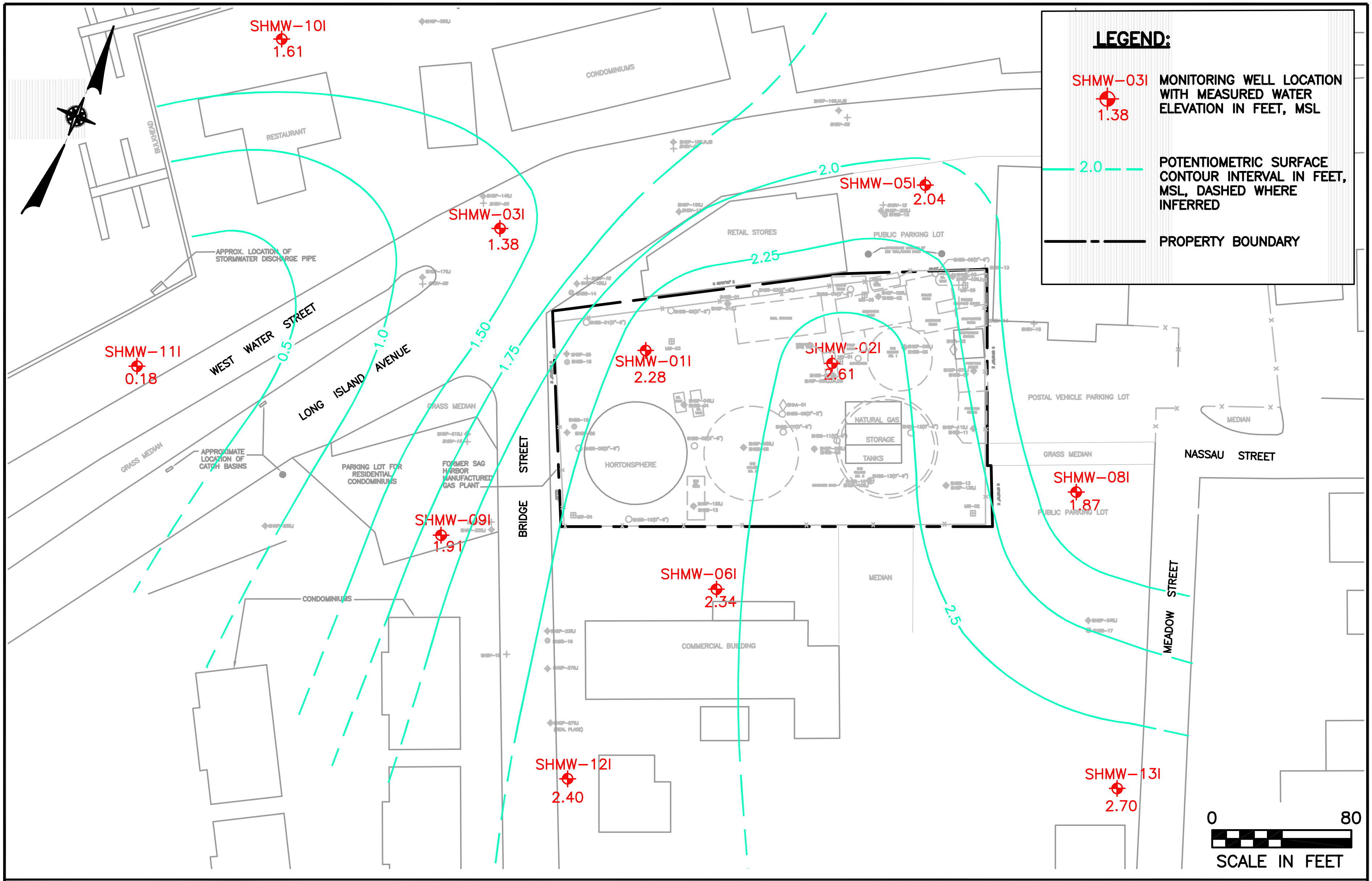

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SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

POTENTIOMETRIC SURFACE OF INTERMEDIATE GROUNDWATER ZONE

HIGH TIDE - MAY 17, 2002

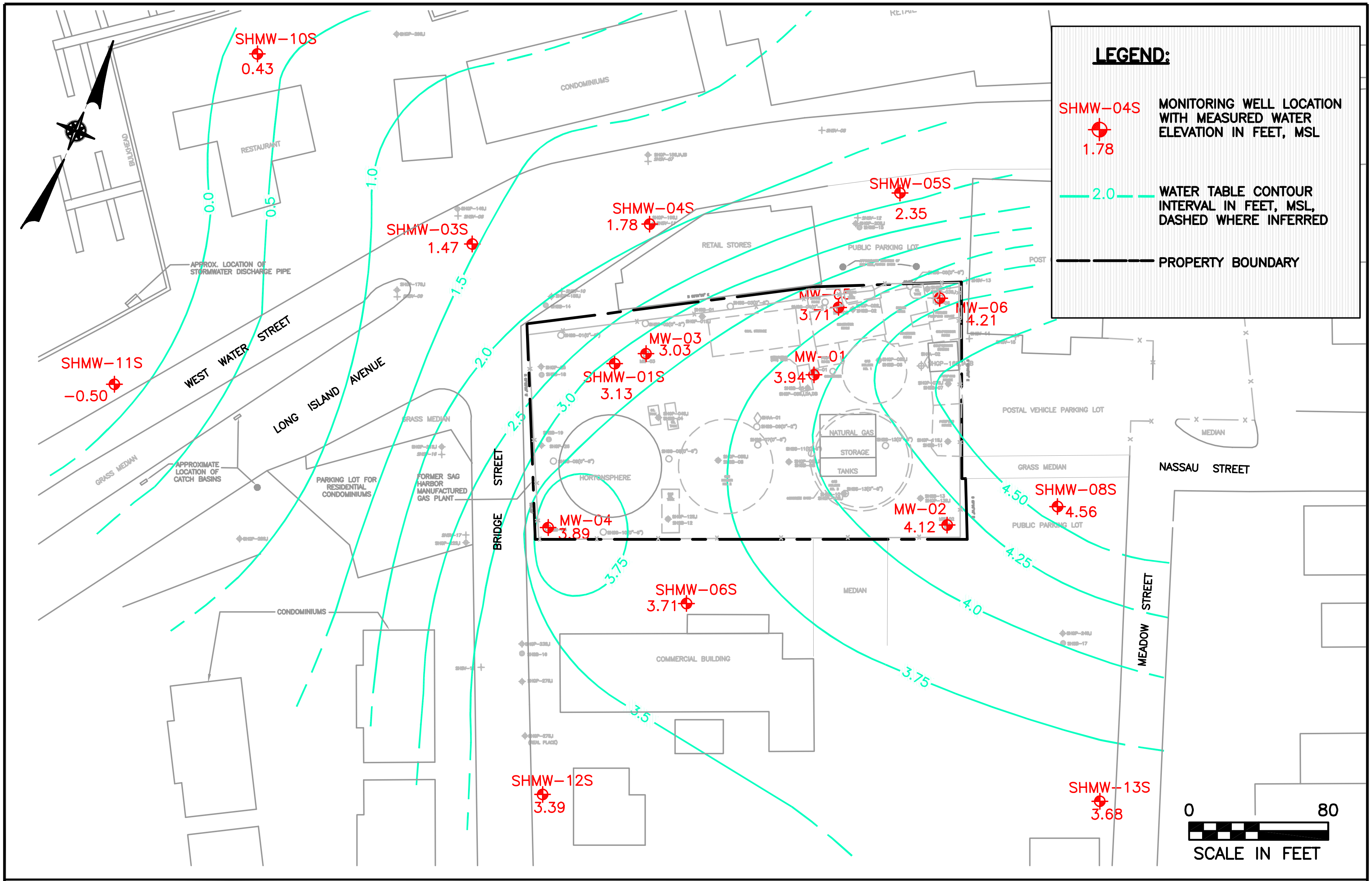
FIGURE 3-5

portion of the site and off-site to the south. The map also indicates mounding within the southwestern corner of the site, a location where storm water regularly ponds after a rain event. As observed during the initial field program, water table gradients on the southern and eastern portions of the site are relatively flat, but increase on the northern and western portions of the site and off-site to the northwest in the direction of Sag Harbor Cove.

The initial field program found that groundwater flow is primarily to the west and northwest within the intermediate zone, with a suggestion of an easterly component of flow within the in the extreme eastern portion of the site. As indicated on **Figure 3-5**, the supplemental contour map is generally consistent with the above observations. However, the tidal fluctuation at monitoring well location SHMW-10I (1.3 feet) is significantly greater than the nearest well locations, SHMW-03I (-0.13 foot) and SHMW-11I (0.91 foot), indicating that well location SHMW-10I is in greater hydraulic communication with Sag Harbor Cove than SHMW-03I or SHMW-11I. As a result, there is intermediate groundwater flow from SHMW-10I southeast towards SHMW-03I and especially south towards SHMW-11I. Overall, as observed during the initial field program, hydraulic gradients within the intermediate zone appear to be relatively flat on-site, but increase off-site to the northwest and north.

Groundwater Flow at Low Tide

Two low tide groundwater contour maps were produced using data collected on May 20, 2002, with **Figure 3-6** presenting a water table contour map and **Figure 3-7** presenting a potentiometric surface map for the intermediate groundwater zone. This period reflects a relatively wet period where a total of 4.33 inches of rain fell in the 2 days prior to the collection of measurements according to rainfall data collected by the on-site weather station. The initial field program found that, in general, shallow groundwater flow directions at low tide were predominantly to the northwest, towards Sag Harbor Cove, with the suggestion of a westerly and southwesterly component of flow in the eastern and southern portions of the site. The low tide water table contour map generated in support of the supplemental field program generally agrees with the above observations. However, the westerly and southwesterly components are more pronounced with a nearly southerly flow in the off-site area to the southeast between monitoring



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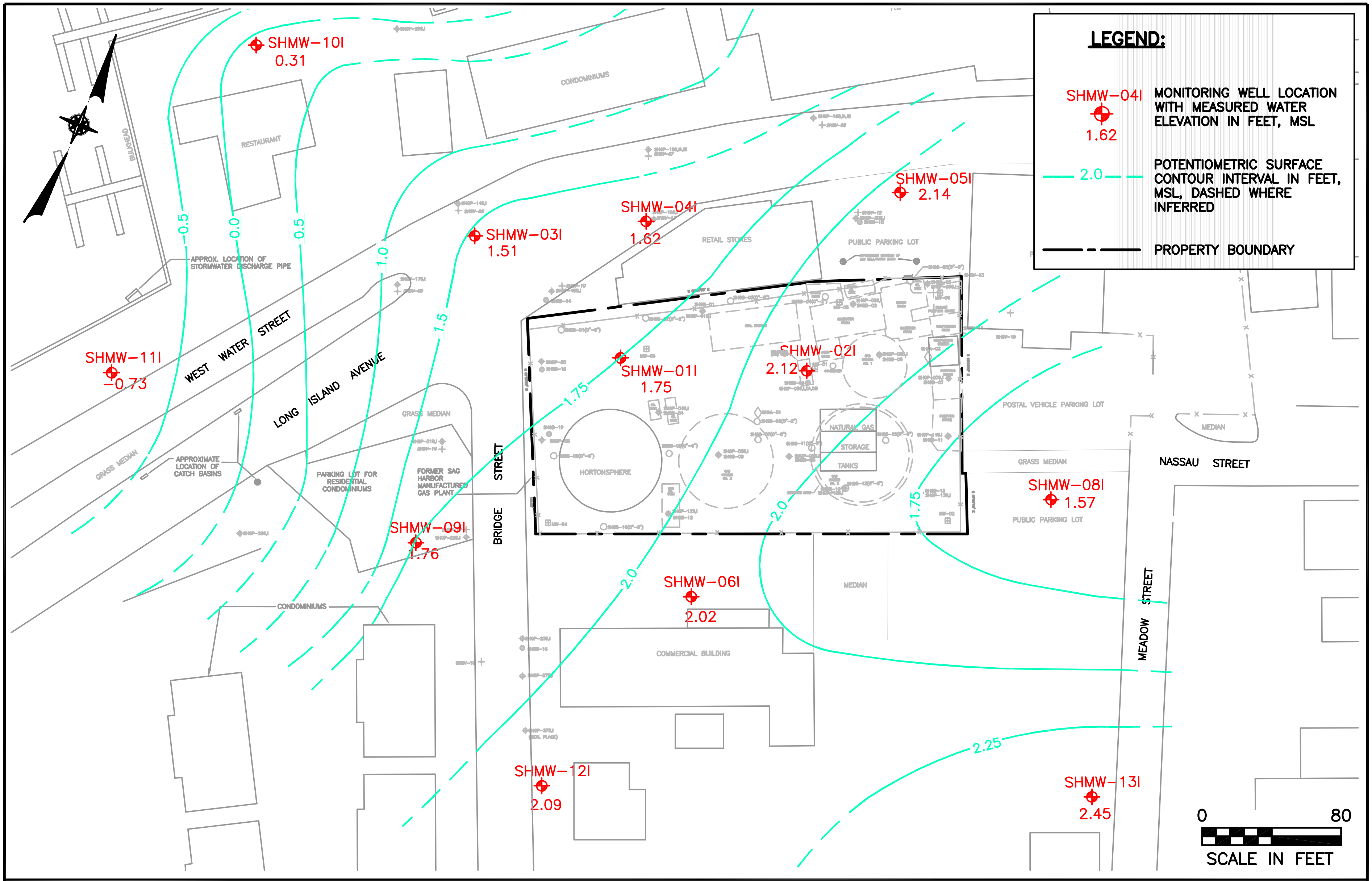
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

WATER TABLE CONTOUR MAP

LOW TIDE - MAY 20, 2002

FIGURE 3-6



SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

POTENTIOMETRIC SURFACE OF INTERMEDIATE GROUNDWATER ZONE

LOW TIDE - MAY 20, 2002

FIGURE 3-7

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F:\1620\SAG HARBOR\SH-02I\1620-SH2.dwg, 12/24/03 12:58:49 PM, ACaniano wells SHMW-08S and SHMW-13S. This may be caused by mounding at SHMW-08S due to the recent heavy rains, storm water dry wells located in the vicinity of the well cluster and the 15.5 foot thick zone of peat and silt/clay at this location.

The initial field program also found mounding within the southwestern corner of the site after a rain event where storm water regularly ponds, as well as a relatively strong hydraulic gradient within the northeast corner of the site, which also may have been associated with a localized mounding of the water table in this area. **Figure 3-6**, the low tide water table contour map developed from the supplemental field program, is consistent with these observations. The initial field program found that groundwater flow is primarily to the west and northwest within the intermediate zone with, as in the high tide intermediate zone, a suggestion of a possible easterly component of flow within the extreme eastern portion of the site. As indicated on **Figure 3-7**, the supplemental contour map is consistent with the above observations. Overall as seen during the initial field program, on-site hydraulic gradients are slightly greater for both low tide maps when compared to high tide maps. However, off-site to the northwest, where the peat and/or silt/clay units are generally absent, the low tide contour maps indicate relatively strong hydraulic gradients in the direction of Sag Harbor Cove. Additionally, hydraulic gradients offsite to the northwest towards Sag Harbor Cove during low tide are typically steeper than during high tide due to the general increase in tidal fluctuation closer to the cove.

Vertical Groundwater Flow

Water elevations measured in on-site and off-site monitoring wells (summarized on **Table 2-5)** were evaluated to confirm the findings of the initial field program as to the vertical hydraulic gradients between shallow, intermediate and deep groundwater zones. As with horizontal gradients, tidal fluctuations as well as precipitation events appear to influence vertical hydraulic gradients. Additionally, the presence and/or absence of the peat and/or silt/clay units appears to be another factor influencing vertical gradients. The initial field program found that on-site well clusters indicated a downward vertical gradient between shallow and intermediate wells during high tide and low tide periods with the greatest downward gradients observed during low tide periods after heavy precipitation. As indicated on **Table 2-5**, water elevations measured during the supplemental field program are in general agreement with these observations. Note that the intermediate wells are strongly influenced by tidal actions whereas on-site shallow wells are not. Additionally, shallow water levels appear to be more influenced by infiltration of precipitation compared to intermediate wells.

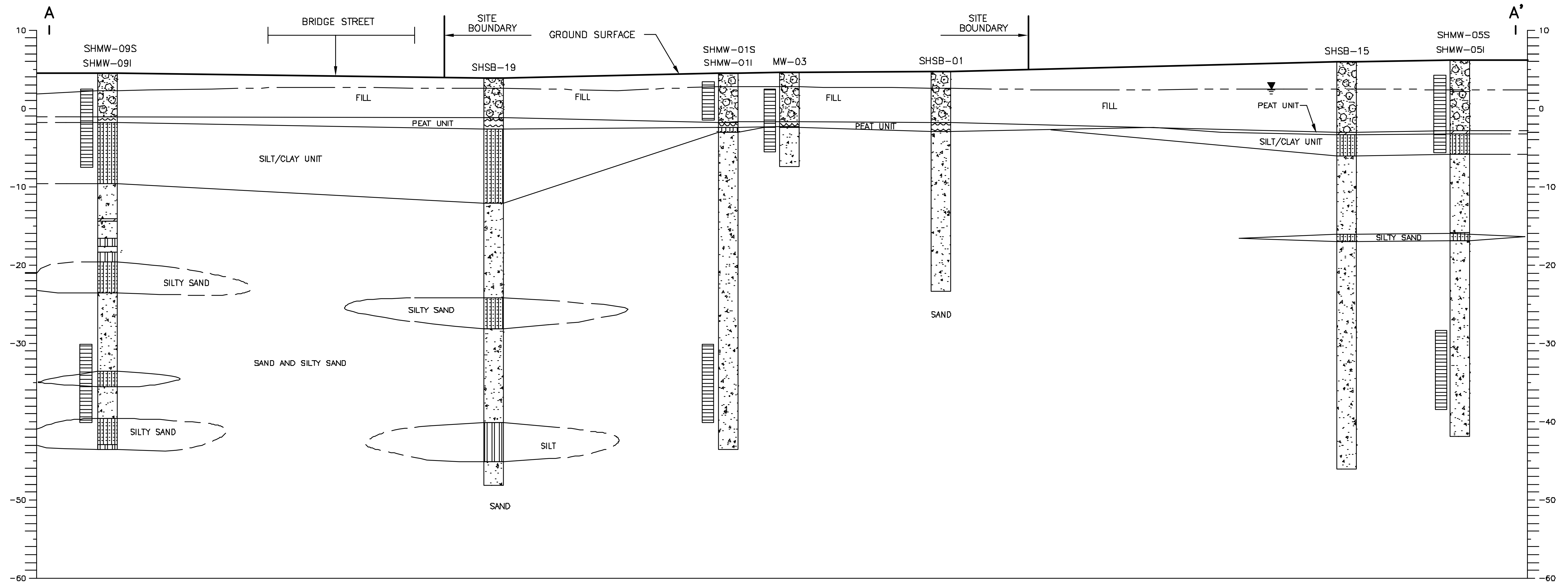
Whereas the initial field program found an upward vertical gradient between the intermediate and deep groundwater zones at monitoring well cluster SHMW-02, water level measurements collected during the supplemental field program found a slight downward gradient between these groundwater zones with a difference in groundwater elevation of approximately 0.2 foot during both high and low tide.

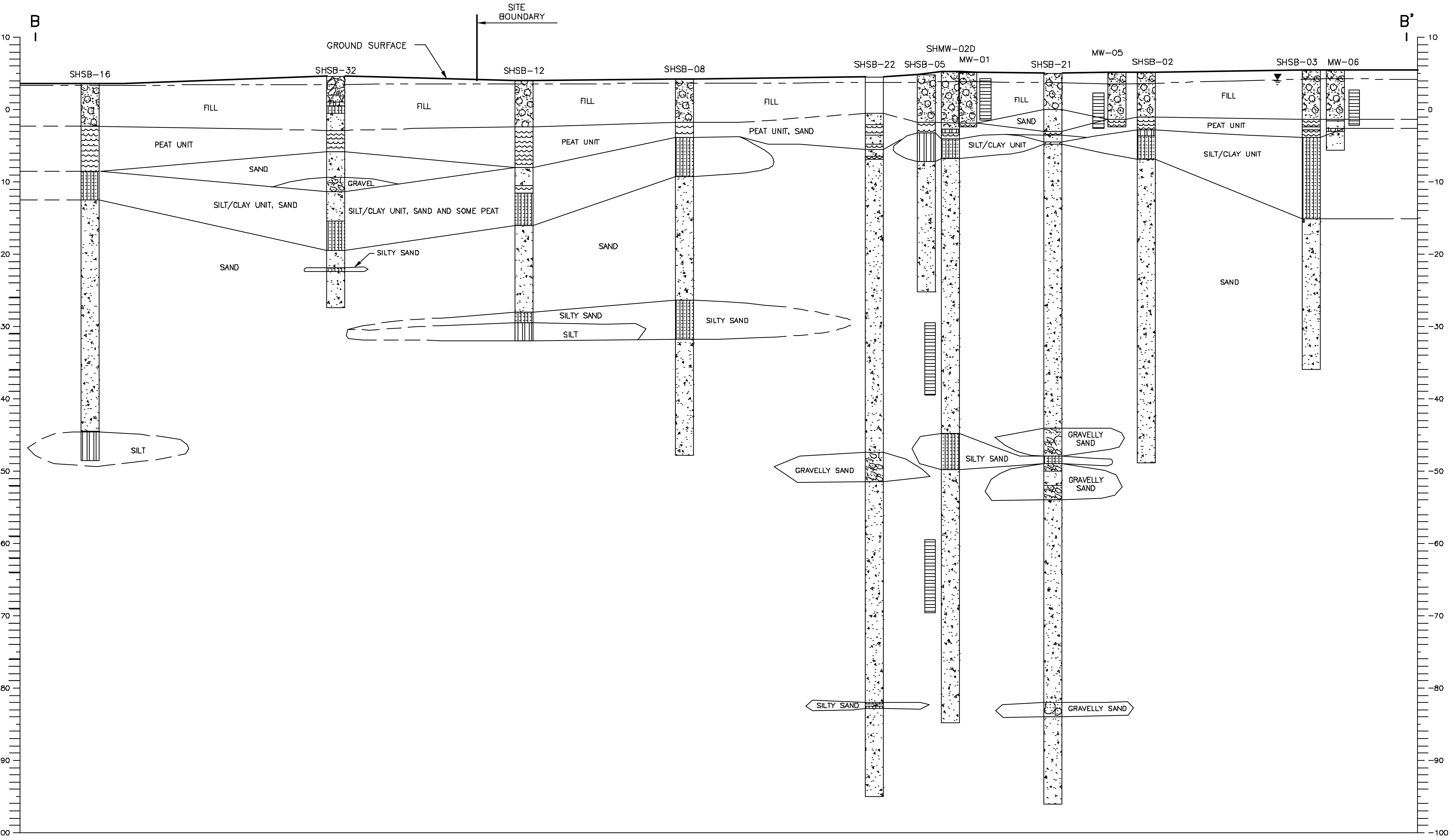
The initial field program found that, similar to on-site well clusters, off-site well clusters to the south (SHMW-06 and SHMW-07) and west (SHMW-09) indicated downward vertical gradients between the shallow and intermediate groundwater zones. Water elevations measured during the supplemental field program at these well clusters and at well clusters SHMW-12 and SHMW-13 are in agreement with these observations. As shown in **Figures 3-1** and **3-2**, the peat and silt/clay units are present within these areas, and therefore, are likely controlling the vertical gradients between groundwater above and below the strata. As with horizontal gradients and groundwater flow patterns, the confining nature of the peat and silt/clay units retards vertical movement of groundwater resulting in an increased gradient between shallow and intermediate groundwater.

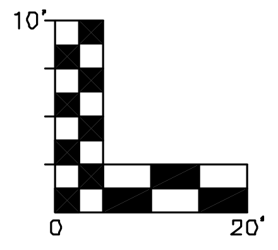
Water elevations obtained during the initial field program indicated that well clusters off-site to the north and northwest (SHMW-03 and SHMW-04) generally demonstrate an upward (discharging) hydraulic gradient between the shallow and intermediate zones, but primarily during periods of high tide. As indicated on **Table 2-5**, water elevations measured during the supplemental field program for well cluster SHMW-10 are in strong agreement with these observations, as they are for well cluster SHMW-04. However, well cluster SHMW-03 indicates a downward gradient at high tide during the latest rounds of depth to water measurements. An upward hydraulic gradient would be expected at these well clusters due to their close proximity to Sag Harbor Cove, as well as the fact that the peat and/or silt/clay units are absent within this area.

Conductivity Probes

Three conductivity probes were advanced to a depth of approximately 100 feet bgs on-site in order to identify the possible presence of and depth to the saltwater/freshwater interface in the area of the site. SHCR-01 was located in the extreme north-central portion of the site. SHCR-02 was located in the extreme west-central portion of the site and SHCR-03 in the southeast corner of the site. Conductivity readings were taken every 0.05 feet. It was found that the conductivity of the groundwater generally fluctuated between 0.5 and 2 mS/m over the entire depth of all three probes. These results indicate that the water is not saline up to 100 feet bgs on-site. According to USGS Water-Supply Paper 2073, the aquifer underlying Sag Harbor Cove to the north consists of freshwater to a depth of approximately 20 feet bgs. Moving inland this freshwater zone or wedge thickens rapidly to over 100 feet. This distribution is typical of coastal aquifers.

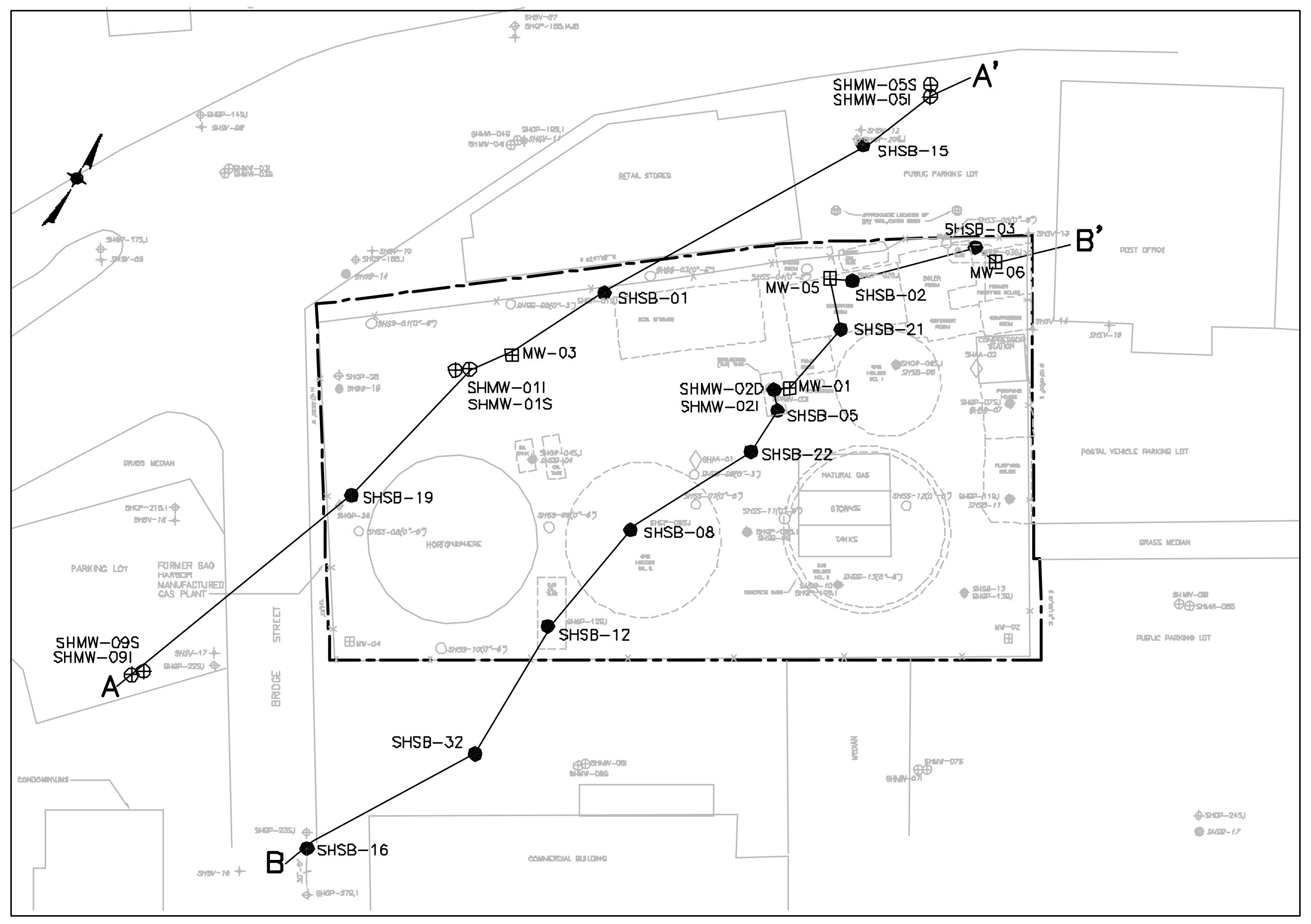






LEGEND

⬚	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
☐	MATERIAL NOT LOGGED
≋	PEAT
▥	SOIL BORING
▤	WELL SCREEN FOR MONITORING WELL
———	GROUND SURFACE
—— – –	STRATAGRAPHIC CONTACT, DASHED WHERE INFERRED
—— – – ▼	ELEVATION OF WATER TABLE GIVEN IN FEET ABOVE MEAN SEA LEVEL



KEY MAP
SHOWING CROSS-SECTION LINES

SCALE:1"=50'

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SAG HARBOR FORMER MGP SITE
FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

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

PROJECT NO.: 1620-D8
DATE: DECEMBER 2003
SCALE: AS SHOWN
DRAWING NO.: **3A**

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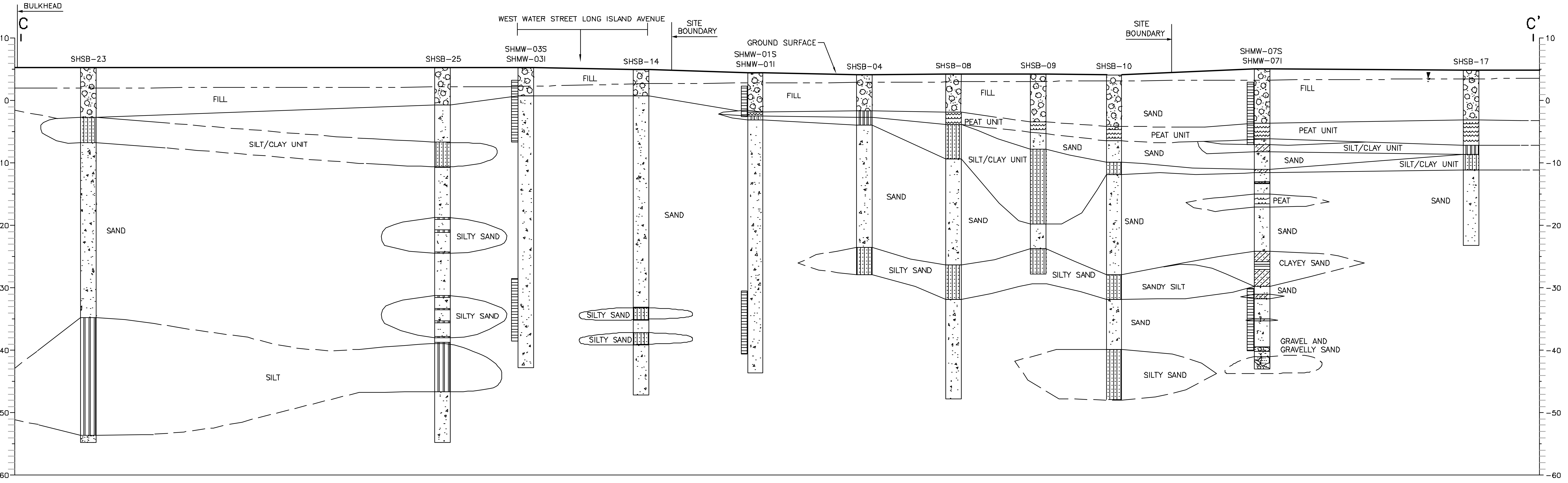
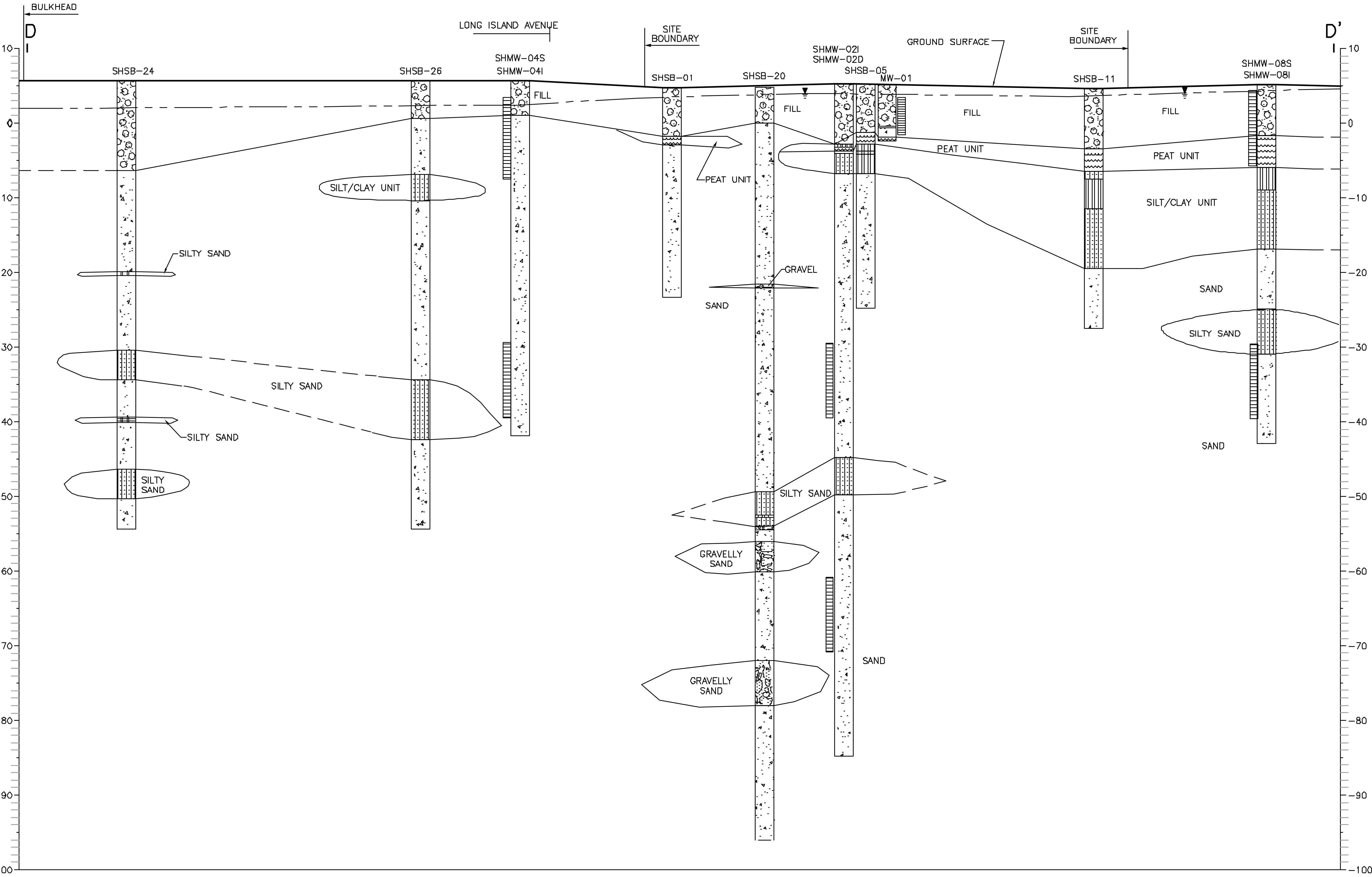
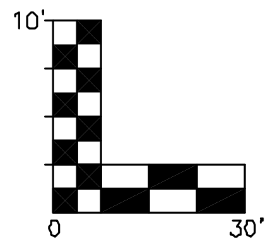
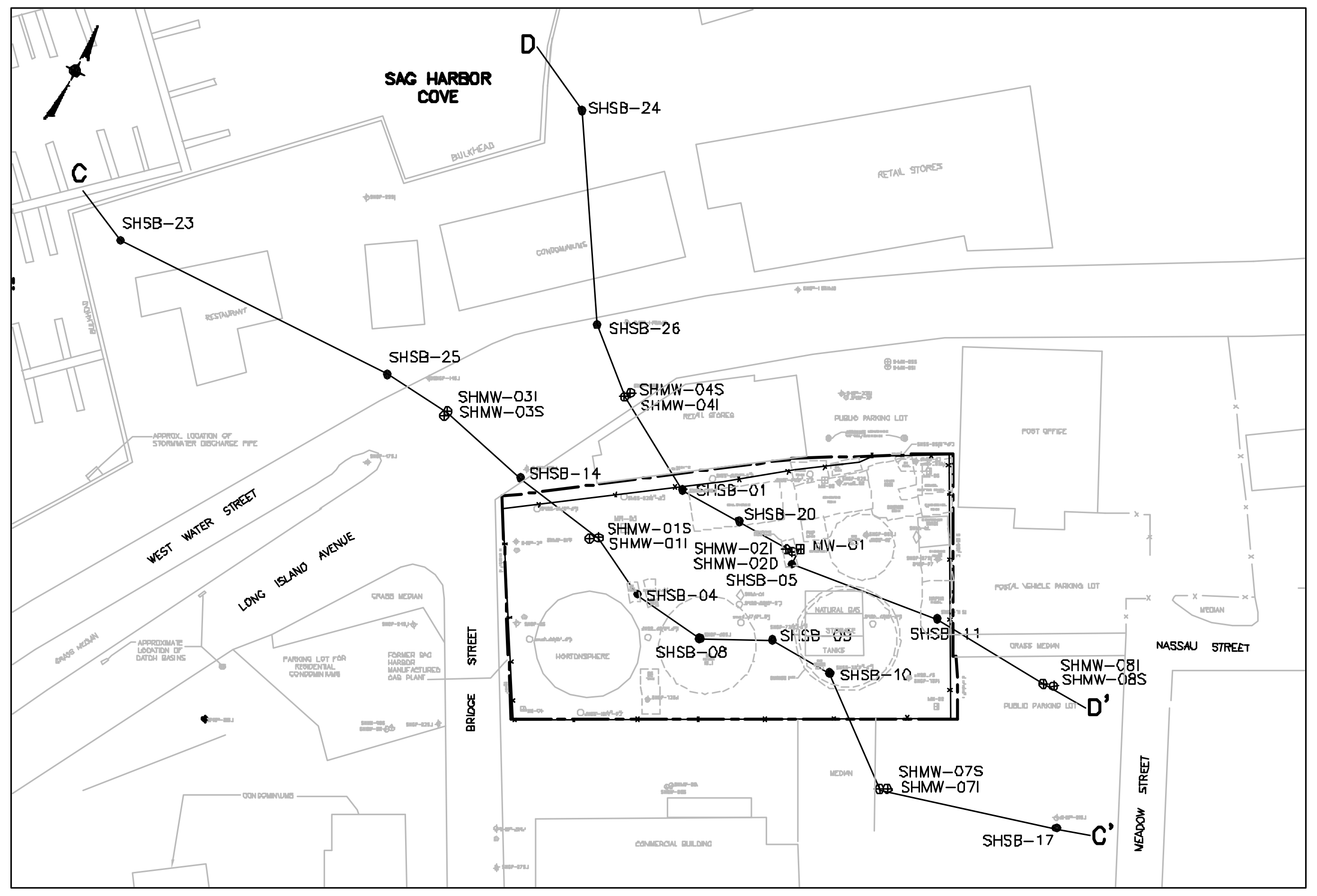






LEGEND

⁘	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
≋	PEAT
☐	MATERIAL NOT LOGGED
▥	SOIL BORING
▤	WELL SCREEN FOR MONITORING WELL
───	GROUND SURFACE
─── ‒ ‒ ‒	STRATAGRAPHIC CONTACT, DASHED WHERE INFERRED
─── ‒ ‒ ▼	ELEVATION OF WATER TABLE GIVEN IN FEET ABOVE MEAN SEA LEVEL



KEY MAP
SHOWING CROSS-SECTION LINES

SCALE:1"=80'

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SAG HARBOR FORMER MGP SITE
FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

GEOLOGIC CROSS-SECTIONS C-C', D-D'

PROJECT NO.: 1620-D8
DATE: DECEMBER 2003
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DRAWING NO.: **3B**

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4.0 FINDINGS

4.1 Introduction

This section provides a discussion of the chemical compounds and other MGP residuals identified in on-site and off-site areas based on the supplemental field program. Where appropriate, data from the initial field program has been used in conjunction with supplemental field program data to provide a better understanding as to the nature and extent of MGP-related chemical compounds and other MGP residuals associated with the site.

Consistent with the initial field program completed in the Spring of 2000, environmental samples collected as part of the supplemental field program from on-site locations have been grouped into what is referred to as the On-site Field Investigation Program. Samples collected from off-site locations have been grouped into what is referred to as the Off-site Field Investigation Program.

Drawing 2 and **Figures 2-2** through **2-5** provide the surveyed locations of all completed on-site and off-site sampling locations along with the approximate locations of former MGP structures located on the site. **Appendix C** contains data tables summarizing the analytical results of all samples collected during the supplemental field program. The sum of all positively detected BTEX compounds, as well as the sum of all positively detected PAHs and carcinogenic PAHs (CaPAHs) are also provided in the data summary tables. In addition, **Appendix D** summarizes all total BTEX and total PAH data for subsurface soil samples collected as part of the initial field program completed in the Spring of 2000, as well as prior studies and contains data tables summarizing the analytical results of all groundwater samples collected during the same investigations.

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 soils, values were compared to typical metal concentrations observed within eastern United States soil (see **Table 4-1**). When relevant, data generated under this investigation 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 associated with the supplemental field program were compared to NYSDEC regulatory standards, criteria and guidance values (SCGs) for *screening* purposes. The analytical data tables provided in **Appendix C** include a column for SCGs including those presented 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. In addition, SCGs for tap water are from New York State Department of Health (NYSDOH) Maximum Contaminant Levels (MCLs), SCGs for surface water are from TOGS 1.1.1 and SCGs for surface water sediment were obtained from the NYSDEC Division of Fish, Wildlife and Marine Resources document entitled, "Technical Guidance for Screening Contaminated Sediments." Concentrations of chemical constituents that exceed the SCGs are bracketed on the data tables. Also, **Tables 4-2** through **4-8** summarize the concentration range, frequency of exceeding SCGs and the specific SCG for chemical constituents typically associated with former MGP sites. Note that these tables utilize only the data collected during the supplemental field program.

The following terminology and descriptions were used to describe the visual and olfactory observations made during the field programs, 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 a NAPL. 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, in this case, the vinegar represents the DNAPL and the oil represents the

TABLE 4-1
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

TYPICAL BACKGROUND CONCENTRATIONS OF METALS IN SOIL

Metals	Background Levels - Eastern USA (mg/kg)
Aluminum	7,000 - 100,000
Antimony	< 1 - 8.8
Arsenic	< 0.1 - 73
Barium	10 - 1,500
Beryllium	< 1 - 7
Cadmium	-
Calcium	100 - 280,000
Chromium	1 - 1,000
Cobalt	< 0.3 - 70
Copper	< 1 - 700
Iron	100 - 100,000
Lead	< 10 - 300
Magnesium	50 - 50,000
Manganese	< 2 - 7,000
Mercury	0.01 - 3.4
Nickel	< 5 - 700
Potassium	50 - 37,000
Selenium	< 0.1 - 3.9
Silver	-
Sodium	500 - 50,000
Thallium	-
Vanadium	< 7 - 300
Zinc	< 5 - 2,900

NOTES:

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

- : Not established.

TABLE 4-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF CHEMICAL CONSTITUENTS TYPICALLY ASSOCIATED WITH FORMER MGP SITES DETECTED IN ON-SITE SUBSURFACE SOIL AND COMPARISON TO NYSDEC SCGs

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPM)	CONCENTRATION RANGE (PPM)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Subsurface Soil	VOCs	Benzene	0.06	ND to 15	4 of 12	SHSB-22(6-7)
		Toluene	1.5	ND to 16	2 of 12	SHSB-21(15-17)
		Ethylbenzene	5.5	ND to 28	4 of 12	SHSB-21(15-17)
		Total Xylenes	1.2	ND to 37	4 of 12	SHSB-21(15-17)
	PAHs	Benzo(a)pyrene *	0.061	ND to 170	4 of 12	SHSB-21(7-9)
		Dibenzo(a,h)anthracene *	0.014	ND to 22	4 of 12	SHSB-21(7-9)
		Benzo(a)anthracene *	0.224	ND to 170	4 of 12	SHSB-21(7-9)
		Indeno(1,2,3-cd)pyrene *	3.2	ND to 100	2 of 12	SHSB-21(7-9)
		Benzo(b)fluoranthene *	1.1	ND to 140	3 of 12	SHSB-21(7-9)
		Benzo(k)fluoranthene *	1.1	ND to 74	3 of 12	SHSB-21(7-9)
		Chrysene *	0.4	ND to 180	4 of 12	SHSB-21(7-9)
		Naphthalene	13	ND to 300	3 of 12	SHSB-21(7-9)
		2-Methylnaphthalene	36.4	ND to 190	3 of 12	SHSB-21(7-9)
		Acenapthylene	41	ND to 110	1 of 12	SHSB-21(7-9)
		Acenapthene	50	ND to 130	2 of 12	SHSB-21(7-9)
		Dibenzofuran	6.2	ND to 14	1 of 12	SHSB-21(7-9)
		Fluorene	50	ND to 130	1 of 12	SHSB-21(7-9)
		Phenanthrene	50	ND to 440	3 of 12	SHSB-21(7-9)
		Anthracene	50	ND to 140	1 of 12	SHSB-21(7-9)
		Fluoranthene	50	ND to 330	1 of 12	SHSB-21(7-9)
		Pyrene	50	ND to 380	2 of 12	SHSB-21(7-9)
		Benzo(ghi)perylene	50	ND to 120	1 of 12	SHSB-21(7-9)
		Total CaPAHs	10	0.00 to 856	3 of 12	SHSB-21(7-9)
		Total PAHs	500[1]	0.00 to 3140	2 of 12	SHSB-21(7-9)
	Metals	Arsenic	7.5	ND to 3.5	0 of 12	SHSB-21(7-9)
		Barium	300	2.3 to 21.7	0 of 12	SHSB-21(7-9)
		Cadmium	10[2]	ND to 0.38	0 of 12	SHSB-21(7-9)
		Chromium	50[2]	1.1 to 9.5	0 of 12	SHSB-22(52-54)
		Lead	500	0.36 to 1320	1 of 12	SHSB-21(7-9)
		Mercury	0.1	ND to 0.36	1 of 12	SHSB-21(7-9)
		Selenium	2	ND to 0.76	0 of 12	SHSB-21(7-9)
		Silver	SB	ND	NA	NA
		Cyanide	NA	ND to 0.29	NA	SHSB-21(7-9)

Notes:

The data used on this table was obtained from the supplemental field program.

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

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF CHEMICAL CONSTITUENTS TYPICALLY ASSOCIATED WITH FORMER MGP SITES DETECTED IN ON-SITE GROUNDWATER AND COMPARISON TO NYSDEC SCGs

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPB)	CONCENTRATION RANGE (PPB)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Groundwater	VOCs	Benzene	1	ND to 580	7 of 10	MW-03
		Toluene	5	ND to 43	2 of 10	MW-03
		Ethylbenzene	5	ND to 3200	4 of 10	MW-02
		Total Xylenes	5	ND to 2300	5 of 10	MW-02
	PAHs	Benzo(a)pyrene *	ND	ND to 120	5 of 10	MW-02
		Dibenzo(a,h)anthracene *	NA	ND to 7	NA	MW-05
		Benzo(a)anthracene *	0.002	ND to 200	5 of 10	MW-02
		Indeno(1,2,3-cd)pyrene *	0.002	ND to 29	4 of 10	MW-01
		Benzo(b)fluoranthene *	0.002	ND to 91	5 of 10	MW-02
		Benzo(k)fluoranthene *	0.002	ND to 55	5 of 10	MW-02
		Chrysene *	0.002	ND to 190	5 of 10	MW-02
		Naphthalene	10	ND to 6200	7 of 10	MW-02
		2-Methylnaphthalene	NA	ND to 820	NA	MW-02
		Acenapthylene	NA	ND to 73	NA	MW-02
		Acenapthene	20	ND to 620	6 of 10	MW-02
		Dibenzofuran	NA	ND to 11	NA	MW-03
		Fluorene	50	ND to 240	2 of 10	MW-02
		Phenanthrene	50	ND to 920	4 of 10	MW-02
		Anthracene	50	ND to 290	2 of 10	MW-02
		Fluoranthene	50	ND to 380	2 of 10	MW-02
		Pyrene	50	ND to 530	3 of 10	MW-02
		Benzo(ghi)perylene	NA	ND to 38	NA	MW-01
		Total CaPAHs	NA	0.00 to 656	NA	MW-02
		Total PAHs	NA	0.00 to 10729	NA	MW-02
	Metals	Arsenic	25	ND to 25.8	1 of 10	MW-01
		Barium	1,000	17.4 to 346	0 of 10	MW-01
		Cadmium	5	ND	0 of 10	NA
		Chromium	50	ND to 86.6	1 of 10	MW-01
		Lead	25	ND to 658	3 of 10	MW-01
		Mercury	0.7	ND to 3	1 of 10	MW-01
		Selenium	10	ND	0 of 10	NA
		Silver	50	ND to 1.2	0 of 10	MW-02
		Cyanide	200	ND to 29.6	0 of 10	MW-06

Notes:
The data used on this table was obtained from the supplemental field program.
SCGs: NYSDEC Class GA Groundwater Standards/Guidelines.
NA: Not applicable.
ND: Non-detect.
*: Carcinogenic PAH (CaPAH).

TABLE 4-4

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF CHEMICAL CONSTITUENTS TYPICALLY ASSOCIATED WITH FORMER MGP SITES DETECTED IN OFF-SITE SOIL AND COMPARISON TO NYSDEC SCGs

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 5	NA
		Toluene	1.5	ND	0 of 5	NA
		Ethylbenzene	5.5	ND	0 of 5	NA
		Total Xylenes	1.2	ND to 0.004	0 of 5	SHSS-17 (0-2")
	PAHs	Benzo(a)pyrene *	0.061	ND to 2.1	3 of 6	SHSS-14 (0-6")
		Dibenzo(a,h)anthracene *	0.014	ND	0 of 6	NA
		Benzo(a)anthracene *	0.224	ND to 1.8	2 of 6	SHSS-14 (0-6")
		Indeno(1,2,3-cd)pyrene *	3.2	ND to 1.8	0 of 6	SHSS-14 (0-6")
		Benzo(b)fluoranthene *	1.1	ND to 2.4	1 of 6	SHSS-14 (0-6")
		Benzo(k)fluoranthene *	1.1	ND to 1.3	1 of 6	SHSS-14 (0-6")
		Chrysene *	0.4	ND to 2.5	1 of 6	SHSS-14 (0-6")
		Naphthalene	13	ND	0 of 6	NA
		2-Methylnaphthalene	36.4	ND	0 of 6	NA
		Acenapthylene	41	ND to 1.6	0 of 6	SHSS-14 (0-6")
		Acenapthene	50	ND	0 of 6	NA
		Dibenzofuran	6.2	ND	0 of 6	NA
		Fluorene	50	ND	0 of 6	NA
		Phenanthrene	50	ND to 0.65	0 of 6	SHSS-14 (0-6")
		Anthracene	50	ND to 0.69	0 of 6	SHSS-14 (0-6")
		Fluoranthene	50	ND to 2.3	0 of 6	SHSS-14 (0-6")
		Pyrene	50	ND to 4.3	0 of 6	SHSS-14 (0-6")
		Benzo(ghi)perylene	50	ND to 2.6	0 of 6	SHSS-14 (0-6")
		Total CaPAHs	10	0.00 to 11.9	1 of 6	SHSS-14 (0-6")
		Total PAHs	500[1]	0.00 to 24.04	0 of 6	SHSS-14 (0-6")
	Metals	Arsenic	7.5	1.3 to 27.1	1 of 5	SHSS-17 (0-2")
		Barium	300	8.8 to 37.8	0 of 5	SHSS-14 (0-2")
		Cadmium	10[2]	ND to 0.13	0 of 5	SHSS-17 (0-2")
		Chromium	50[2]	3.1 to 19.7	0 of 5	SHSS-17 (0-2")
		Lead	500	12.9 to 101	0 of 5	SHSS-17 (0-2")
		Mercury	0.1	0.02 to 0.12	1 of 5	SHSS-17 (0-2")
		Selenium	2	ND to 0.67	0 of 5	SHSS-17 (0-2")
		Silver	SB	ND	NA	NA
		Cyanide	NA	ND to 0.47	NA	SHSS-17 (0-2")
Subsurface Soil	VOCs	Benzene	0.06	ND to 14	4 of 61	SHSB-38 (8-10)
		Toluene	1.5	ND to 17	1 of 61	SHSB-38 (8-10)
		Ethylbenzene	5.5	ND to 140	6 of 61	SHSB-38 (8-10)
		Total Xylenes	1.2	ND to 130	6 of 61	SHSB-38 (8-10)
	PAHs	Benzo(a)pyrene *	0.061	ND to 120	14 of 60	SHSB-33(5.5-7.5) & SHSB-38 (8-10)

TABLE 4-4 (continued)

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF CHEMICAL CONSTITUENTS TYPICALLY ASSOCIATED WITH FORMER MGP SITES DETECTED IN OFF-SITE SOIL AND COMPARISON TO NYSDEC SCGs

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPM)	CONCENTRATION RANGE (PPM)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Subsurface Soil (cont.)	PAHs (cont.)	Dibenzo(a,h)anthracene *	0.014	ND to 12	11 of 60	SHSB-29(5-7)
		Benzo(a)anthracene *	0.224	ND to 180	14 of 60	SHSB-33(5.5-7.5)
		Indeno(1,2,3-cd)pyrene *	3.2	ND to 47	8 of 60	SHSB-38 (8-10)
		Benzo(b)fluoranthene *	1.1	ND to 110	10 of 60	SHSB-33(5.5-7.5)
		Benzo(k)fluoranthene *	1.1	ND to 60	9 of 60	SHSB-38(8-10)
		Chrysene *	0.4	ND to 180	14 of 60	SHSB-33 (5.5-7.5)
		Naphthalene	13	ND to 1700	6 of 60	SHSB-33 (5.5-7.5)
		2-Methylnaphthalene	36.4	ND to 680	6 of 60	SHSB-33 (5.5-7.5)
		Acenapthylene	41	ND to 85	4 of 60	SHSB-38(8-10)
		Acenapthene	50	ND to 620	7 of 60	SHSB-33 (5.5-7.5)
		Dibenzofuran	6.2	ND to18	2 of 60	SHSB-33 (5.5-7.5)
		Fluorene	50	ND to 280	5 of 60	SHSB-33 (5.5-7.5)
		Phenanthrene	50	ND to 1000	7 of 60	SHSB-33 (5.5-7.5)
		Anthracene	50	ND to 440	6 of 60	SHSB-29 (5-7)
		Fluoranthene	50	ND to 380	6 of 60	SHSB-33 (5.5-7.5)
		Pyrene	50	ND to 490	7 of 60	SHSB-33 (5.5-7.5)
		Benzo(ghi)perylene	50	ND to 59	2 of 60	SHSB-38(8-10)
		Total CaPAHs	10	0.00 to 679	9 of 60	SHSB-33 (5.5-7.5)
		Total PAHs	500^{1}	0.00 to 6222	7 of 60	SHSB-33 (5.5-7.5)
	Metals	Arsenic	7.5	ND to 8.1	1 of 60	SHSB-45 (0-2)
		Barium	300	1.2 to 85.6	0 of 60	SHSB-46 (1.25-2.25)
		Cadmium	10^{2}	ND to 1.5	0 of 60	SHSB-46 (1.25-2.25)
		Chromium	50^{2}	1.2 to 12.2	0 of 60	SHSB-39 (8-10)
		Lead	500	0.51 to 277	0 of 60	SHSB-46 (1.25-2.25)
		Mercury	0.1	ND to 0.64	5 of 60	SHSB-46 (1.25-2.25)
		Selenium	2	ND to 2.8	1 of 60	SHSB-37 (10-12)
		Silver	SB	ND to 1.6	NA	SHSB-46 (1.25-2.25)
		Cyanide	NA	ND to 0.21	NA	SHSB-44 (28-30)

Notes:
The data used on this table was obtained from the supplemental field program.
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

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF CHEMICAL CONSTITUENTS TYPICALLY ASSOCIATED WITH FORMER MGP SITES DETECTED IN OFF-SITE GROUNDWATER AND COMPARISON TO NYSDEC SCGs

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPB)	CONCENTRATION RANGE (PPB)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Groundwater (MW, GP, Pore Water, Groundwater Seep)	VOCs	Benzene	1	ND to 1800	21 of 96	SHMW-04S
		Toluene	5	ND to 53	5 of 96	SHMW-06S
		Ethylbenzene	5	ND to 1100	12 of 96	SHGP-41(6-10)
		Total Xylenes	5	ND to 1000	13 of 96	SHMW-04S & SHMW-06S
	PAHs	Benzo(a)pyrene *	ND	ND to 25	11 of 96	SHMW-04S
		Dibenzo(a,h)anthracene *	NA	ND to 5	NA	SHGP-45 (2-6)
		Benzo(a)anthracene *	0.002	ND to 33	11 of 96	SHMW-04S
		Indeno(1,2,3-cd)pyrene *	0.002	ND to 20	7 of 96	SHGP-45 (2-6)
		Benzo(b)fluoranthene *	0.002	ND to 22	10 of 96	SHGP-45 (2-6)
		Benzo(k)fluoranthene *	0.002	ND to 16	6 of 96	SHGP-45 (2-6)
		Chrysene *	0.002	ND to 30	12 of 96	SHMW-04S
		Naphthalene	10	ND to 5200	21 of 96	SHGP-37 (2-6) & SHMW-07S
		2-Methylnaphthalene	NA	ND to 780	NA	SHMW-07S
		Acenapthylene	NA	ND to 45	NA	SHGP-34 (30-34)
		Acenapthene	20	ND to 390	14 of 96	SHMW-07S
		Dibenzofuran	NA	ND to 11	NA	SHGP-37 (2-6)
		Fluorene	50	ND to 95	4 of 96	SHMW-07S
		Phenanthrene	50	ND to 240	4 of 96	SHMW-04S
		Anthracene	50	ND to 54	1 of 96	SHGP-37 (2-6)
		Fluoranthene	50	ND to 55	2 of 96	SHMW-04S
		Pyrene	50	ND to 93	2 of 96	SHMW-04S
		Benzo(ghi)perylene	NA	ND to 24	NA	SHGP-45 (2-6)
		Total CaPAHs	NA	0.00 to 127	NA	SHMW-04S
		Total PAHs	NA	0.00 to 6745	NA	SHGP-37 (2-6)
	Metals	Arsenic	25	ND to 103	1 of 22	SHMW-08S
		Barium	1,000	10.2 to 337	0 of 22	SHMW-12S
		Cadmium	5	ND to 3.2	0 of 22	SHMW-04S
		Chromium	50	ND to 19.1	0 of 22	SHMW-03I
		Lead	25	ND to 87.4	2 of 22	SHMW-03I
		Mercury	0.7	ND to 0.14	0 of 22	SHMW-03I
		Selenium	10	ND to 11.1	1 of 22	SHMW-08S
		Silver	50	ND to 10	0 of 22	SHMW-10I
		Cyanide	200	ND to 85.3	0 of 22	SHMW-07S

Notes:
The data used on this table was obtained from the supplemental field program.
SCGs: NYSDEC Class GA Groundwater Standards/Guidelines.
NA: Not applicable.
ND: Non-detect.
*: Carcinogenic PAH (CaPAH).

TABLE 4-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF CHEMICAL CONSTITUENTS TYPICALLY ASSOCIATED WITH FORMER MGP SITES DETECTED IN SAG HARBOR COVE SURFACE WATER SEDIMENT AND COMPARISON TO NYSDEC SCGs

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPM)	CONCENTRATION RANGE (PPM)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Surface Water Sediment	VOCs	Benzene	0.52	ND	0 of 18	NA
		Toluene	0.9	ND	0 of 18	NA
		Ethylbenzene	0.128	ND	0 of 18	NA
		Total Xylenes	0.54	ND to 0.027	0 of 18	SHSD-09 (0-0.5)
	PAHs	Benzo(a)pyrene *	NA	ND to 4.3	NA	SHSD-08 (0-0.5)
		Dibenzo(a,h)anthracene *	NA	ND to 0.55	NA	SHSD-08 (0-0.5)
		Benzo(a)anthracene *	NA	ND to 4.3	NA	SHSD-08 (0-0.5)
		Indeno(1,2,3-cd)pyrene *	NA	ND to 1.9	NA	SHSD-08 (0-0.5)
		Benzo(b)fluoranthene *	NA	ND to 4.9	NA	SHSD-08 (0-0.5)
		Benzo(k)fluoranthene *	NA	ND to 1.9	NA	SHSD-08 (0-0.5)
		Chrysene *	NA	ND to 5.2	NA	SHSD-08 (0-0.5)
		Naphthalene	0.76	ND to 0.064	0 of 18	SHSD-08 (0-0.5)
		2-Methylnaphthalene	0.6	ND	0 of 18	NA
		Acenapthylene	NA	ND to 1.2	NA	SHSD-01 (0-0.5)
		Acenapthene	4.8	ND to 0.12	0 of 18	SHSD-08 (0-0.5)
		Dibenzofuran	NA	ND to 0.049	NA	SHSD-08 (0-0.5)
		Fluorene	0.76	ND to 0.15	0 of 18	SHSD-08 (0-0.5)
		Phenanthrene	3.2	ND to1.3	0 of 18	SHSD-08 (0-0.5)
		Anthracene	NA	ND to 0.82	NA	SHSD-08 (0-0.5)
		Fluoranthene	26.8	ND to 7.1	0 of 18	SHSD-08 (0-0.5)
		Pyrene	NA	ND to 11	NA	SHSD-08 (0-0.5)
		Benzo(ghi)perylene	NA	ND to 2.2	NA	SHSD-08 (0-0.5)
		Total CaPAHs	NA	0.00 to 23.05	NA	SHSD-08 (0-0.5)
		Total PAHs	NA	0.00 to 46.763	NA	SHSD-08 (0-0.5)

Notes:
The data used on this table was obtained from the supplemental field program.
SCGs: For Class SA Saltwater, benthic aquatic life chronic toxicity, based on total organic carbon of 2.00% .
NA: Not applicable.
ND: Non-detect.
SB: Site Background
* Carcinogenic PAH (CaPAH).

TABLE 4-7

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF CHEMICAL CONSTITUENTS TYPICALLY ASSOCIATED WITH FORMER MGP SITES DETECTED IN SAG HARBOR COVE SURFACE WATER AND PORE WATER AND COMPARISON TO NYSDEC SCGs

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPB)	CONCENTRATION RANGE (PPB)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Surface Water & Pore Water	VOCs	Benzene	10	ND	0 of 16	NA
		Toluene	6000	ND	0 of 16	NA
		Ethylbenzene	4.5	ND	0 of 16	NA
		Total Xylenes	19	ND to 1.0	0 of 16	SHSW-08 & SHSW-08 +12
	PAHs	Benzo(a)pyrene *	0.0006	ND	0 of 16	NA
		Dibenzo(a,h)anthracene *	NA	ND	NA	NA
		Benzo(a)anthracene *	NA	ND	NA	NA
		Indeno(1,2,3-cd)pyrene *	NA	ND	NA	NA
		Benzo(b)fluoranthene *	NA	ND	NA	NA
		Benzo(k)fluoranthene *	NA	ND	NA	NA
		Chrysene *	NA	ND	NA	NA
		Naphthalene	16	ND	0 of 16	NA
		2-Methylnaphthalene	4.2	ND	0 of 16	NA
		Acenapthylene	NA	ND	NA	NA
		Acenapthene	6.6	ND	0 of 16	NA
		Dibenzofuran	NA	ND	NA	NA
		Fluorene	2.5	ND	0 of 16	NA
		Phenanthrene	1.5	ND	0 of 16	NA
		Anthracene	NA	ND	NA	NA
		Fluoranthene	NA	ND	NA	NA
		Pyrene	NA	ND	NA	NA
		Benzo(ghi)perylene	NA	ND	NA	NA
		Total CaPAHs	NA	ND	NA	NA
		Total PAHs	NA	ND	NA	NA

Notes:
The data used on this table was obtained from the supplemental field program.
SCGs: NYSDEC Class SA Surface Water Standards/Guidelines.
NA: Not applicable.
ND: Non-detect.
*: Carcinogenic PAH (CaPAH).

TABLE 4-8

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF CHEMICAL CONSTITUENTS TYPICALLY ASSOCIATED WITH FORMER MGP SITES DETECTED IN OFF-SITE PRIVATE SUPPLY WELL TAP WATER AND COMPARISON TO NYSDEC SCGs

MEDIA	CLASS	CHEMICAL CONSTITUENT	SCGs (PPB)	CONCENTRATION RANGE (PPB)	FREQUENCY OF EXCEEDING SCG	SAMPLE EXHIBITING MAXIMUM CONCENTRATION
Tap Water	VOCs	Benzene	5	ND	0 of 3	NA
		Toluene	5	ND	0 of 3	NA
		Ethylbenzene	5	ND	0 of 3	NA
		Total Xylenes	5	ND	0 of 3	NA
	PAHs	Benzo(a)pyrene *	0.2	ND	0 of 3	NA
		Dibenzo(a,h)anthracene *	50	ND	0 of 3	NA
		Benzo(a)anthracene *	50	ND	0 of 3	NA
		Indeno(1,2,3-cd)pyrene *	50	ND	0 of 3	NA
		Benzo(b)fluoranthene *	50	ND	0 of 3	NA
		Benzo(k)fluoranthene *	50	ND	0 of 3	NA
		Chrysene *	50	ND	0 of 3	NA
		Naphthalene	50	ND	0 of 3	NA
		2-Methylnaphthalene	50	ND	0 of 3	NA
		Acenapthylene	50	ND	0 of 3	NA
		Acenapthene	50	ND	0 of 3	NA
		Dibenzofuran	50	ND	0 of 3	NA
		Fluorene	50	ND	0 of 3	NA
		Phenanthrene	50	ND	0 of 3	NA
		Anthracene	50	ND	0 of 3	NA
		Fluoranthene	50	ND	0 of 3	NA
		Pyrene	50	ND	0 of 3	NA
		Benzo(ghi)perylene	50	ND	0 of 3	NA
		Total CaPAHs	NA	ND	NA	NA
		Total PAHs	NA	ND	NA	NA
	Metals	Arsenic	50	ND	0 of 3	NA
		Barium	2,000	16.7 to 63.5	0 of 3	SHTW-02
		Cadmium	5	ND	0 of 3	NA
		Chromium	100	ND	0 of 3	NA
		Lead	15	ND to 2.6	0 of 3	SHTW-01
		Mercury	2	ND	0 of 3	NA
		Selenium	50	ND	0 of 3	NA
		Silver	100	ND	0 of 3	NA
		Cyanide	200	ND	0 of 3	NA

Notes:
The data used on this table was obtained from the supplemental field program.
SCGs: NYSDEC Class GA Groundwater Standards/Guidelines.
NA: Not applicable.
ND: Non-detect.
*: Carcinogenic PAH (CaPAH).

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 vinegar, floats to the top of the container whereas the vinegar (representing the DNAPL) settles to the bottom as a separate phase layer.

- **Saturated:** The entire pore space of the soil matrix for a given soil sample was “filled” with a NAPL. The characteristics of the observed NAPL were used in the description (i.e., tar-saturated or petroleum-saturated).

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

- **Stained:** The soil sample exhibited a discoloration not associated with natural processes. The color of the observed stain was used and if the characteristics of the staining material were discernible, they were 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 was present, it was described based on its relative intensity and characteristics. Relative odor intensity was described using terms such as strong, moderate and faint. Descriptive terms such as tar-like, naphthalene-like, hydrocarbon-like or petroleum-like odors were also used when such determinations could be made.

- **MGP Tar:** MGP 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 at the Sag Harbor former MGP site. MGP tar can be encountered in a solid, semi-solid or liquid state. Similar to petroleum, MGP tar does not readily dissolve in water and will exist as a NAPL when released in a soil/water environment.

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

- 2-Methylnaphthalene
- Acenaphthene
- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Fluorene
- Indeno(1,2,3-c,d)pyrene

- Acenaphthylene
- Benzo(k)fluoranthene
- Naphthalene
- Anthracene
- Chrysene
- Phenanthrene
- Benzo(a)anthracene
- Dibenzo(a,h)anthracene
- Pyrene
- Benzo(a)pyrene
- Fluoranthene
- Dibenzofuran

Of these PAHs, the following constituents are considered carcinogenic PAHs by the USEPA.

- 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.

4.2 On-Site Investigation

4.2.1 Subsurface Soil

The objective of the on-site subsurface soil sampling program conducted as part of the supplemental field program was to delineate the extent of site related constituents in the subsurface soil in the vicinity of the former Tar Separating Tank. As detailed in the June 2002 RI Report, tar blebs, staining and sheens were noted in subsurface soil to a depth of 90 feet bgs at soil boring/well SHMW-02D completed within the vicinity of this former structure. A total of three soil borings were advanced on-site within the vicinity of the former Tar Separating Tank. Twelve subsurface soil samples were selected for chemical analysis of BTEX, PAHs, RCRA metals and total cyanide. In addition, two of the 12 samples were also selected for full TAL/TCL analysis.

Analytical results for BTEX and PAHs in soil samples collected from soil borings are summarized in **Tables C-4** and **C-5**, respectively, and analytical results for RCRA metals and total cyanide are summarized in **Table C-6**. The analytical results for VOCs and SVOCs are summarized in **Tables C-7** and **C-8**, respectively, and analytical results for pesticides and PCBs are summarized in **Table C-9**. Analytical results for TAL metals are summarized in **Table C-10**.

BTEX

Six of the twelve subsurface samples collected from the three on-site soil borings installed in support of the supplemental field program exhibited detectable levels of BTEX. Total BTEX concentrations in the six samples ranged from less than 0.01 mg/kg to a maximum of 92.0 mg/kg detected in sample SHSB-21 (15 to 17 feet). As shown on **Drawing 2**, this boring is located approximately 30 feet north of the former Tar Separating Tank. This sample exhibited PID measurements of up to 1,200 parts per million (ppm), a naphthalene-like odor, and tar at saturated levels. These conditions were identified below the peat/silt/clay unit, which was observed to be present, but was found to be only 0.5-foot thick at this location. However, field observations such as elevated PID readings, staining, sheens and naphthalene-like odors were observed to decrease significantly with depth, and BTEX compounds were not detected in the samples collected from 71 to 73 and 95 to 97 feet below grade at this location.

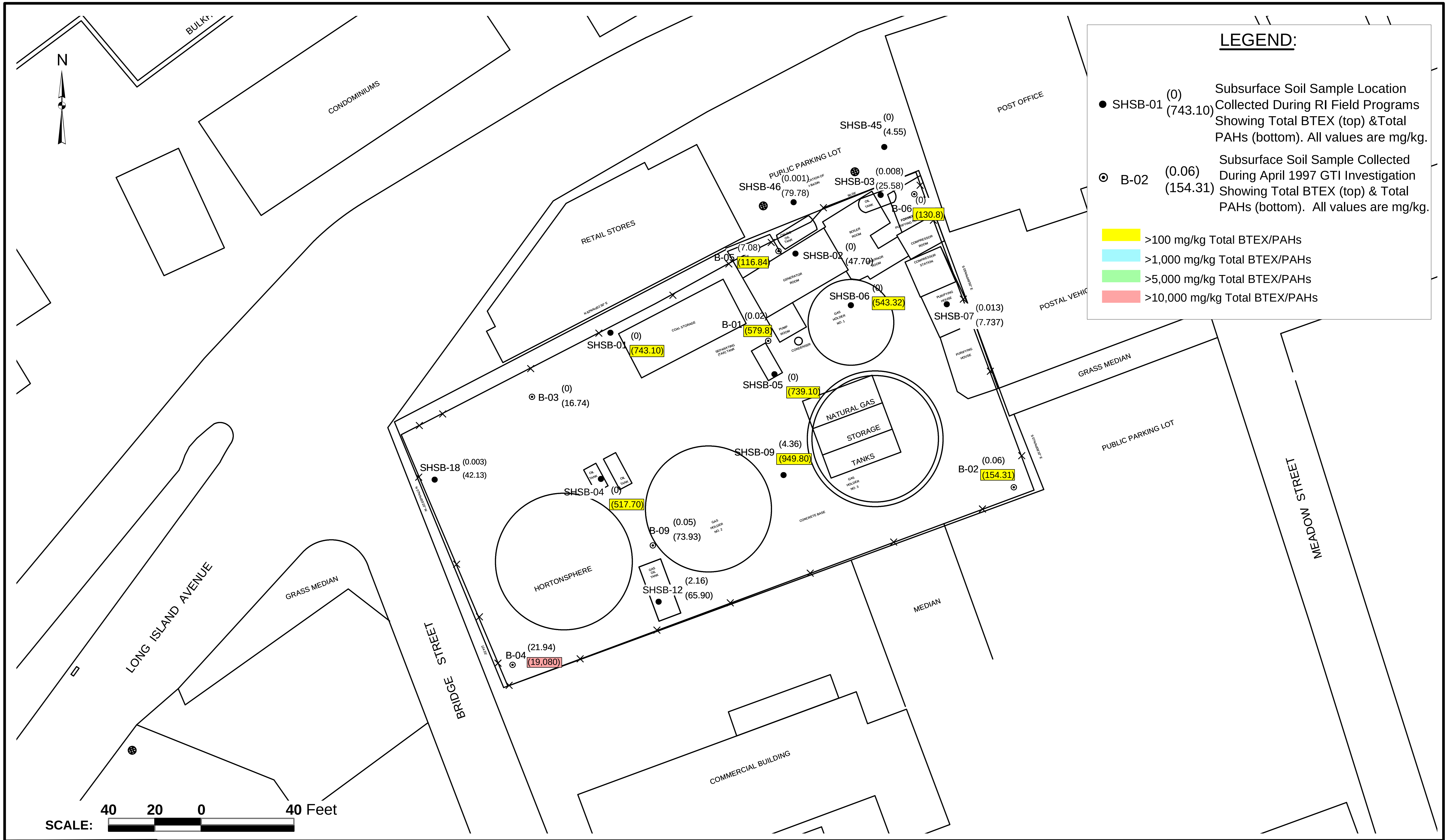
BTEX compounds were also detected in SHSB-21 (7 to 9 feet) and SHSB-22 (6 to 7 feet). These samples exhibited total BTEX concentrations of 35.2 mg/kg and 59.2 mg/kg respectively. Soil boring SHSB-22 was located approximately 15 feet south of the former Tar Separating Tank. Similar to SHSB-21, BTEX concentrations as well as tar staining and odors were also observed to decrease at SHSB-22 with increasing depth, with BTEX compounds being nondetectable in samples collected from 20 to 22, 52 to 54 and 98 to 100 feet bgs at this location. In summary, although evidence of naphthalene-like odors, elevated PID readings and tar at saturated levels exist in the vicinity of the former Tar Separating Tank, based on the analytical results, it does not appear that this former structure is acting as a source area for BTEX compounds.

Figures 4-1 through **4-4** depict total BTEX and total PAH concentrations in subsurface soil at on-site and off-site sample locations. The figures are based on soil data generated from the supplemental field program, the initial field program completed in the Spring of 2000, the cut and plug IRM, and the 1997 Phase 1 Site Investigation report. The data used for **Figure 4-1** is based on the analytical results of subsurface soil samples collected at depths ranging from 0 to 2 feet bgs. The data used for **Figure 4-2** is based on the analytical results of subsurface soil samples collected at depths ranging from 2 to 8 feet bgs, which is primarily above the peat/silt/clay unit. The data used for **Figure 4-3** is based on the analytical results of subsurface soil samples collected at depths ranging from 8 to 18 feet bgs, which includes subsurface soil within and below the peat/silt/clay unit. The data used for **Figure 4-4** is based on the analytical results of subsurface soil samples collected at depths greater than 18 feet bgs. It is important to note that at sample locations where more than one sample was analyzed within a given depth range for BTEX, the highest concentration detected was utilized in developing these maps.

Based on a review of these figures and the supporting data, the following are noteworthy observations regarding BTEX in on-site subsurface soil:

1. Shallow subsurface soil to a depth of 2 feet bgs did not exhibit total BTEX concentrations exceeding 22.0 mg/kg.
2. The highest BTEX concentrations were observed between 2 and 8 feet bgs, i.e., above the peat/silt/clay unit and primarily within the eastern half of the site.
3. While tar staining, odors and tar blebs was observed at a number of soil probes below the peat/silt/clay unit, total BTEX soil concentrations do not exceed 0.2 mg/kg in any sample analyzed from a depth of 18 feet bgs or greater.

Based on the apparent flow directions of shallow groundwater on-site and the location of the samples exhibiting the highest BTEX levels, likely BTEX source areas primarily include the



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TOTAL BTEX/PAHs IN SHALLOW SUBSURFACE SOIL (0 to 2 FEET)

FIGURE 4-1

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\\NN4\cadwork\GIS_Arcview Projects\1620-D Sag Harbor\Maps - Fig 4-2.mxd

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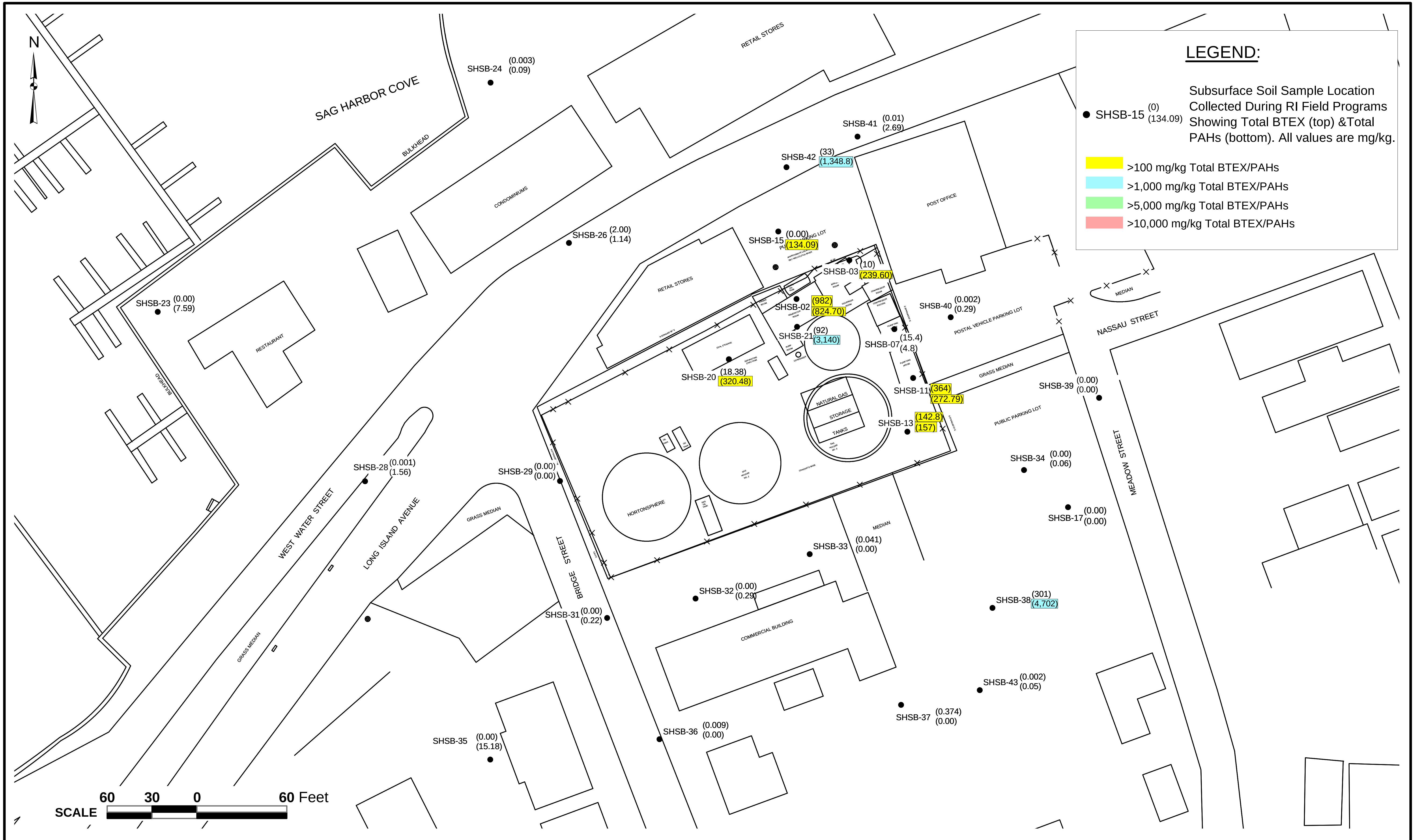
TOTAL BTEX/PAHs IN SHALLOW SUBSURFACE SOIL (2 TO 8 FEET)

FIGURE 4-2



LEGEND:

● SHSB-15 (0) (134.09) Subsurface Soil Sample Location Collected During RI Field Programs Showing Total BTEX (top) &Total PAHs (bottom). All values are mg/kg.

🟨 >100 mg/kg Total BTEX/PAHs

🟦 >1,000 mg/kg Total BTEX/PAHs

🟩 >5,000 mg/kg Total BTEX/PAHs

🟥 >10,000 mg/kg Total BTEX/PAHs

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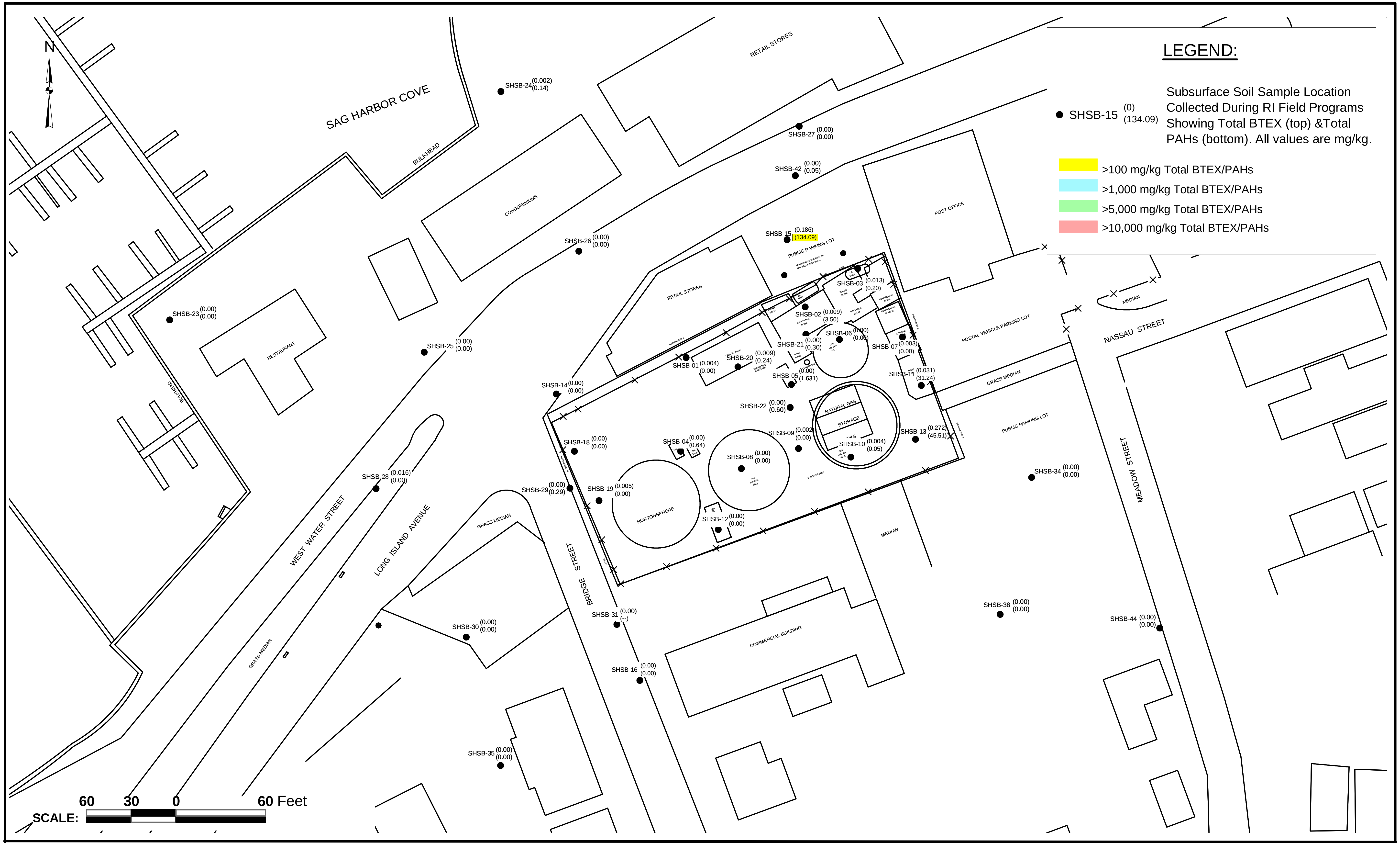
TOTAL BTEX/PAHs IN INTERMEDIATE SUBSURFACE SOIL (8 TO 18 FEET)

FIGURE 4-3



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TOTAL BTEX/PAHs IN DEEP SUBSURFACE SOIL (GREATER THAN 18 FEET)

FIGURE 4-4

locations of MGP structures formerly located in the eastern portion of the site, including the following:

- Generator Room and Crude Oil Tank on the northeast portion of the site.
- Former Gas Holder No. 3 and to a lesser degree the former Gas Holder No. 2.

PAHs

Eight of the twelve soil samples collected from the three on-site soil borings contained one or more PAHs at detectable levels. Total PAH concentrations in the eight samples ranged from trace concentrations of less than 0.4 mg/kg to a maximum of 3,140.0 mg/kg detected in sample SHSB-21 (7 to 9 feet). As shown on **Drawing 2**, this boring is located approximately 30 feet north of the former Tar Separating Tank. Soil sample SHSB-21 (7 to 9 feet) exhibited PID measurements of up to 300 parts per million (ppm), a naphthalene-like odor and tar staining. As previously stated, these observations were observed to decrease with depth. Laboratory analysis indicates that total PAH concentrations also decrease with depth at this location, with a total PAH concentration of only 63.7 mg/kg detected in a sample collected from 15 to 17 feet bgs. In samples collected from 71 to 73 feet and 95 to 97 feet bgs, total PAH concentrations of 0.03 mg/kg and 0.02 mg/kg were detected, respectively.

A total PAH concentration of 674.0 mg/kg was detected in SHSB-22 (6 to 7 feet). Consistent with field observations and total BTEX concentrations discussed previously, total PAH concentrations at this location were also observed to decrease rapidly with depth. A total PAH concentration of 0.6 mg/kg was observed in a sample collected from 20 to 22 feet bgs at this location. PAH compounds were not detected in samples collected from 52 to 54 feet and 98 to 100 feet bgs at this location.

Based on a review of **Figures 4-1** through **4-4** and the supporting data, the following are noteworthy observations regarding PAHs in on-site subsurface soil:

1. PAHs are observed in shallow subsurface soil from 0 to 2 feet bgs. PAH concentrations at this depth interval range from 7.7 mg/kg in the area of the northernmost former Purifying House on the east side of the site (SHSB-07) to 19,080.0 mg/kg detected in the southwest corner of the site at B-04 (0 to 2 feet). PAHs were also observed at this depth interval in the area of the former Tar Separating Tank (SHSB-05), Gas Holder No. 1 (SHSB-06) and the Oil Tanks (SHSB-04).

2. Consistent with BTEX data, the highest PAH concentrations were observed in shallow, saturated subsurface soil between 2 and 8 feet bgs, primarily within the eastern portion of the site. The highest PAH concentrations were found within the former location of Gas Holder No. 3 (SHSB-10), the area of the former Generator Room and Crude Oil Tank (SHSB-02), Tar Separating Tank (SHSB-05) and the northwest portion of the Coal Storage Area (SHSB-01).

3. PAHs were detected in subsurface soil samples from 8 to 18 feet bgs (within and below the peat/silt/clay unit) primarily within the eastern half of the site. The highest on-site total PAH concentration of 5,347.0 mg/kg was detected in SHSB-10 (2 to 4 feet) located within the former Gas Holder No. 3. The second highest total PAH concentration of 4,956.0 mg/kg was detected in sample SHSB-05 (4 to 8 feet), completed within the former Tar Separating Tank. PAH data for SHSB-15, located directly north of the eastern portion of the site indicates potential off-site migration of PAH compounds in subsurface soil below the peat silt/clay unit in this area (refer to **Section 4.3.2**).

4. As shown on **Figure 4-4**, the majority of on-site soil samples below a depth of 18 feet bgs exhibited total PAH concentrations of less than 2.0 mg/kg. However, total PAH concentrations in excess of 2.0 mg/kg were observed in soil samples SHSB-02 (52 to 54 feet) at 3.5 mg/kg, SHSB-11 (30 to 32 feet) at 31.2 mg/kg and SHSB-13 (18 to 20 feet) at 45.5 mg/kg.

Based on the flow directions of shallow groundwater and the location of samples exhibiting the highest total PAH concentrations, the following former MGP structures and surrounding areas are considered likely PAH source areas:

- Tar Separating Tank
- Generator Room/Crude Oil Tank
- Gas Holder No. 2
- Gas Holder No. 3
- Gas Oil Tank

- Oil Tanks

Other locations exhibiting PAH concentrations that may be considered potential sources, which are not in close proximity to former MGP structures, include: SHSB-18 located in the northwest corner of the site, and SHSB-01 located adjacent to the former Coal Storage Area. Based on the direction of groundwater flow, SHSB-18 is considered downgradient of the former Oil Tanks and former Gas Oil Tank listed above. Additionally, SHSB-01 appears to be downgradient of former Gas Holders No. 2 and No. 3.

RCRA Metals and Cyanide

As indicated in **Table C-6**, RCRA metals detected in subsurface soil samples were found to be generally within or below typical background concentrations as defined for the eastern United States (see **Table 4-1**). Total cyanide analysis indicates that the 12 subsurface soil samples selected for analysis from the site in support of the supplemental field program were found to be free of detectable levels of this compound above the contract required detection limit (CRDL) of 1.0 mg/kg. The ranges of RCRA metal and total cyanide concentrations in the subsurface soil samples are summarized below.

Constituents	**Concentration Range (mg/kg)**	**Sample Exhibiting Maximum Concentration**
Arsenic	ND to 3.5	SHSB-21 (7 to 9 feet)
Barium	2.3 to 21.7	SHSB-21 (7 to 9 feet)
Cadmium	ND to 3.8	SHSB-21 (7 to 9 feet)
Chromium	1.1 to 9.5	SHSB-22 (52 to 54 feet)
Lead	0.36 to 1,320	SHSB-21 (7 to 9 feet)
Mercury	ND to 3.6	SHSB-21 (7 to 9 feet)
Selenium	ND to 0.76	SHSB-21 (7 to 9 feet)
Silver	ND	NA
Total Cyanide	ND to 0.29	SHSB-21 (7 to 9 feet)

VOCs

As shown in **Table C-7**, with the exception of BTEX compounds, the only VOC detected in the two samples selected for NYSDEC TCL VOC analysis was carbazole with concentrations ranging from 0.2 mg/kg in SHSB-22 (6 to 7 feet) to 0.4 mg/kg in SHSB-21 (15 to 17 feet). Carbazole is a known constituent of MGP tar (Gas Research Institute, 1996).

SVOCs

As summarized in **Table C-8**, analysis of two subsurface soil samples for the full NYSDEC TCL SVOCs indicates that non-PAH SVOCs were not present at detectable concentrations in these samples with the exception of bis(2-ethylhexyl)phthalate detected at a trace concentration of 0.05 mg/kg in SHSB-21 (15 to 17 feet).

Pesticides and PCBs

As indicated by **Table C-9**, PCBs were not detected in the two soil samples selected for this analysis as part of the supplemental field program. The pesticides Endrin Aldehyde and 4,4-DDT were detected in SHSB-22 (6 to 7 feet) at concentrations of 0.006 mg/kg and 0.031 mg/kg, respectively.

TAL Metals

Metals analysis of the two subsurface soil samples summarized in **Table C-10** indicates that all NYSDEC TAL metals are generally within or below background concentrations for soil in the eastern United States and/or New York State (see **Table 4-1**).

4.2.2 Groundwater

As part of the supplemental field program, all existing on-site monitoring wells were sampled for BTEX, PAHs, RCRA metals and various geochemical parameters. No additional monitoring wells or groundwater probes were installed on-site as part of the supplemental field program. Sampling of all existing and newly installed on-site and off-site wells was completed as part of the supplemental field program in order to obtain a complete groundwater data set that can be compared to prior sample results.

BTEX and PAH results for groundwater samples colleted from on-site monitoring wells are summarized in **Tables C-14** and **C-15**, respectively. RCRA metals and total cyanide analytical results are presented in **Table C-16**. The geochemical and field parameter data are summarized in **Tables C-17** and **C-18**, respectively.

Based on the hydrogeologic setting of the site and consistent with the June 2002 RI Report, the groundwater chemical data has been grouped into three hydrogeologic zones including:

Shallow Groundwater

Groundwater located above or within the peat/silt/clay unit between 0 and 10 feet below grade is considered shallow groundwater. As discussed in **Section 3.3** shallow groundwater above this confining unit is under water table conditions.

Intermediate Groundwater

Groundwater located below the peat/silt/clay unit, and between 25 and 45 feet below grade, is considered intermediate groundwater and is under partial confining conditions.

Deep Groundwater

Groundwater between 45 and 75 feet is considered deep groundwater and is under partial confining conditions.

The following discussion presents the findings of the on-site groundwater sampling completed at the site in support of the remedial investigation.

BTEX

Table 4-9 summarizes on-site groundwater sample data associated with the supplemental field program that exhibited the highest total BTEX and total PAH concentrations along with the approximate locations of these samples in relation to former MGP structures/features where appropriate. The table also indicates any significant field observations noted in these samples. Additional detail as to the distribution of NAPL in groundwater is provided in **Section 4.2.3**.

The highest total BTEX concentration associated with the groundwater sampling conducted in support of the supplemental field program was 5,840.0 ug/l, detected at monitoring well MW-02 located in the southeast corner of the site. This sample exhibited a naphthalene-like odor, sheen and a DNAPL layer of approximately 0.2-foot. Note that this well does not have a sump for DNAPL collection. Analytical data for this well generated as part of the initial field program are generally consistent with the supplemental field program data with total BTEX concentrations ranging from 8,840.0 ug/l (March 2000) to 7,940.0 ug/l (April 2000).

Consistent with prior sample round data, the highest total BTEX concentrations were observed in the shallow groundwater zone, at or above the peat/silt/clay unit. Samples collected from monitoring wells screened below this unit exhibited nondetectable concentrations of BTEX at SHMW-01I and SHMW-02I to trace total BTEX concentrations of 4.0 ug/l at SHMW-02D.

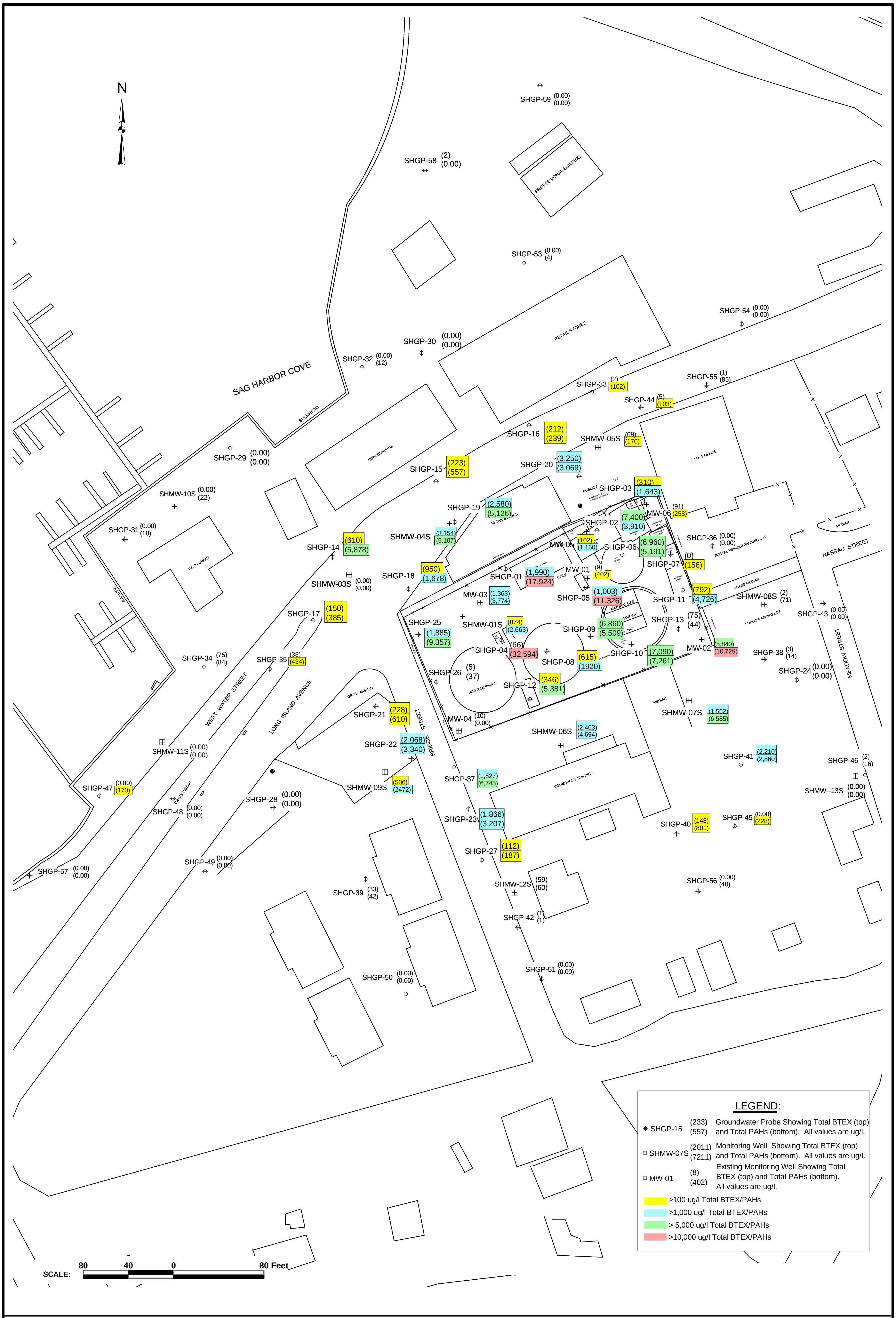
Figures 4-5 through **4-7** depict total BTEX and total PAH concentrations in groundwater collected from on-site as well as off-site sample locations. The data used for **Figure 4-5** is based on the analytical results of shallow groundwater samples collected from the water table to a maximum depth of 10 feet bgs and includes groundwater at or above the peat/silt/clay unit. The data used for **Figure 4-6** is based on the analytical results of groundwater samples collected from the intermediate groundwater zone ranging from 25 to 45 feet bgs. The data used for **Figure 4-7** is based on the analytical results of groundwater samples collected from the groundwater zone ranging from 45 to 75 feet bgs.

TABLE 4-9

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

ON-SITE GROUNDWATER SAMPLES EXHIBITING THE HIGHEST TOTAL BTEX AND TOTAL PAH CONCENTRATIONS

Sample ID (Probe/Well No. and Sample Depth)	Total BTEX Concentration (ug/l)	Total PAH Concentration (ug/l)	Location (in Relation to Former MGP Structure and/or Site)	Field Description of Recovered Sample
MW-02	5,840	10,729	Southeast corner of the Sag Harbor Site.	sheen on surface, 2" of DNAPL, and naphthalene-like odor
MW-03	1,363	3,774	Northeast of the Hortonsphere.	intermittent DNAPL staining on bottom 1.5' of tubing, sheen on water
MW-05	102	1,160	North edge of the Sag Harbor Site, northeast of the Natural Gas Storage Tanks.	blebs of NAPL, naphthalene-like odor
SHMW-01S	874	2,663	North of the Hortonsphere.	naphthalene-like odor



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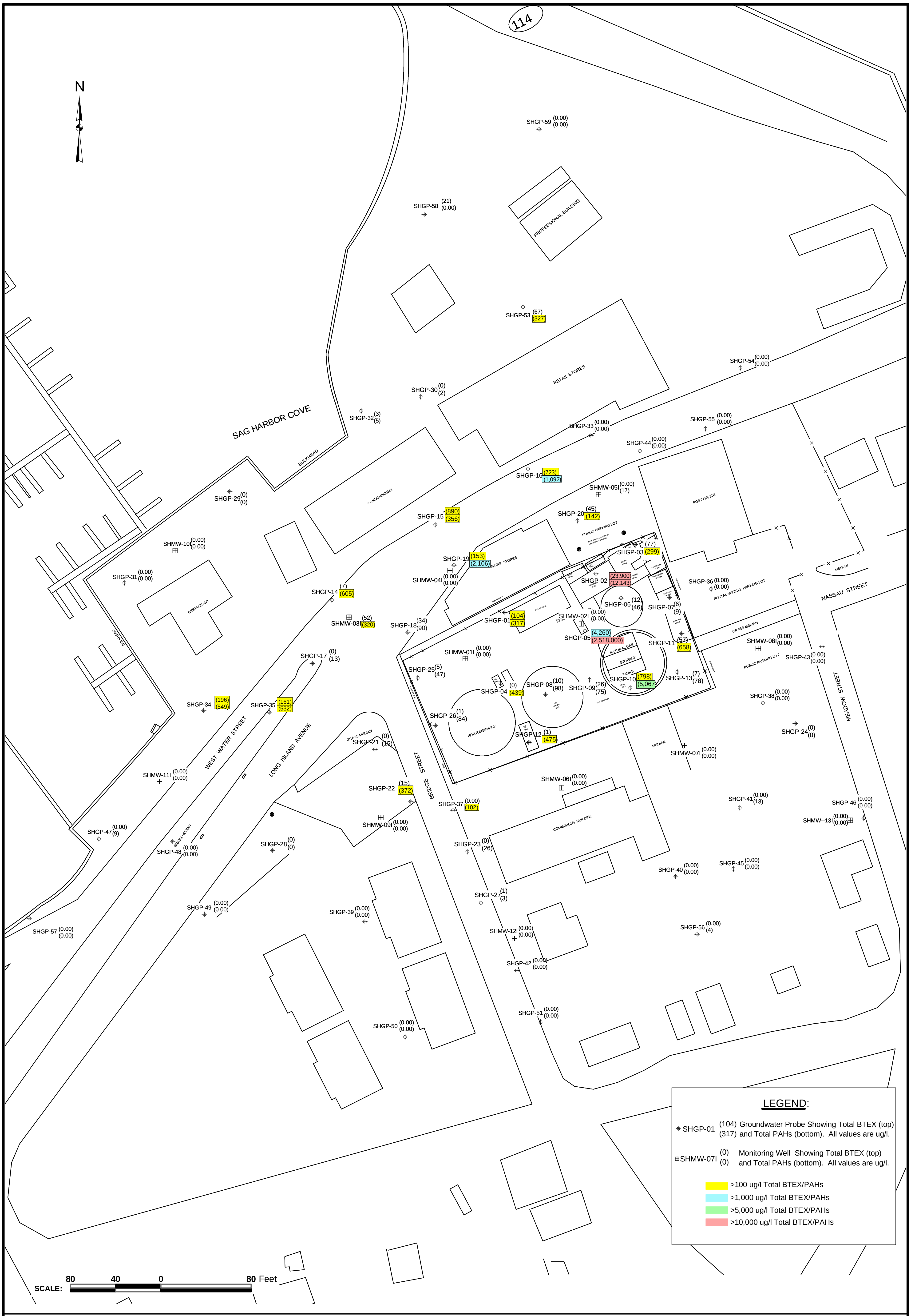
TOTAL BTEX/PAHs IN SHALLOW GROUNDWATER (0 TO 10 FEET)

FIGURE 4-5



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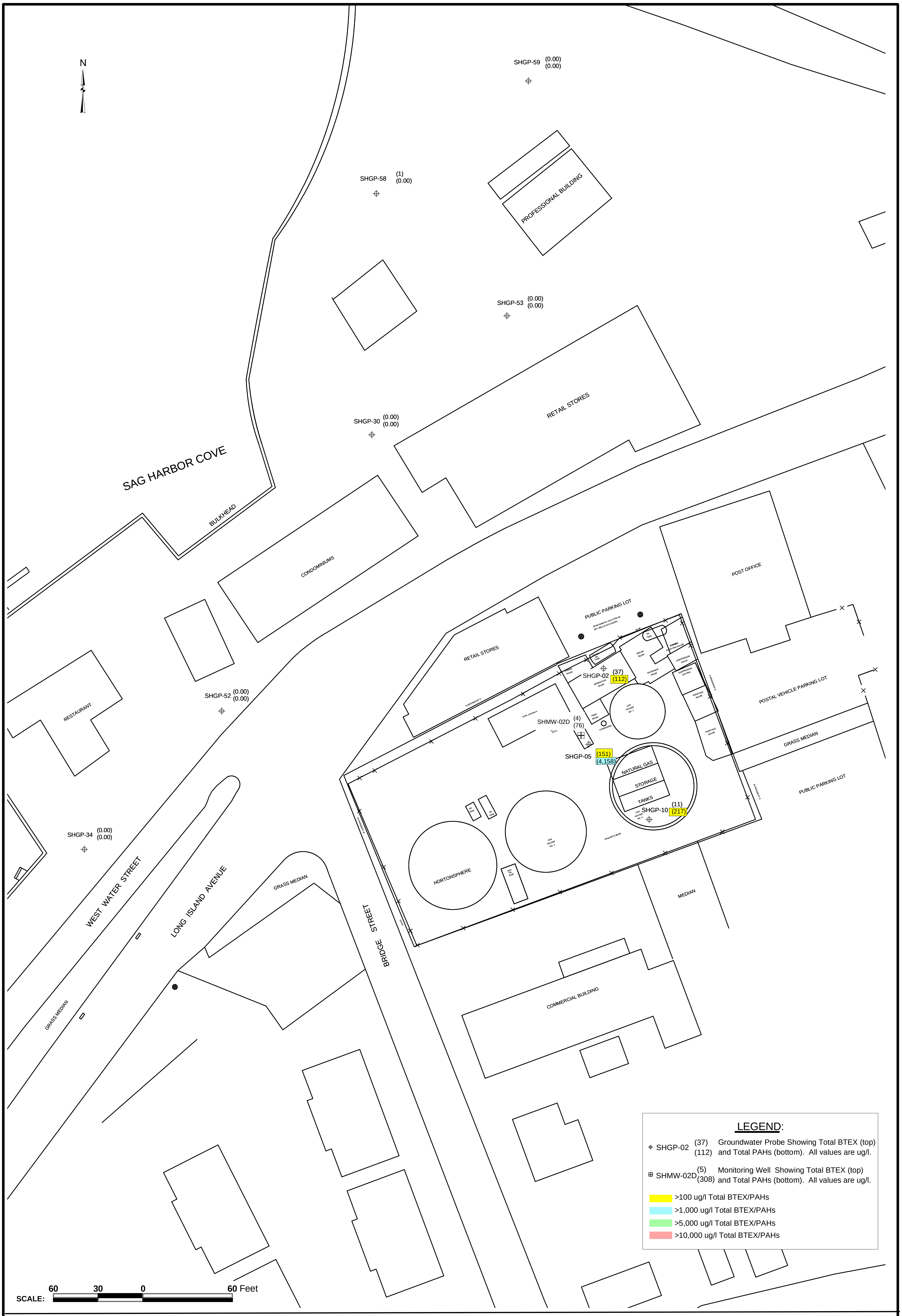
TOTAL BTEX/PAHs IN INTERMEDIATE GROUNDWATER (25 TO 45 FEET)

FIGURE 4-6



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TOTAL BTEX/PAHs IN DEEP GROUNDWATER (45 TO 75 FEET)

FIGURE 4-7

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Note that the data used in these figures was collected during the initial field program as well as the supplemental field program and, as a result, the data set used in the figures spans several years. However, all newly installed and existing monitoring wells were sampled as part of the supplemental field program, and all monitoring well data presented on the figures is from the Spring 2002 sample round. Furthermore, all groundwater samples from SHGP-31 through SHGP-59 were collected during the Spring of 2002. Therefore, the majority of the data presented in these figures were collected in early 2002 and provide an accurate picture of total BTEX distribution within groundwater.

Based on a review of these drawings and the supporting data, the following are noteworthy observations:

1. As indicated by **Figure 4-5**, the highest total BTEX concentrations are generally observed in shallow groundwater within the eastern portion of the site with a total of five shallow groundwater samples exhibiting total BTEX concentrations in excess of 5,000 ug/l (as indicated by the green shading). However, with the exception of MW-02, all samples exceeding 5,000 ug/l were collected from temporary groundwater probes completed during the initial field program. When comparing groundwater data collected from monitoring wells and groundwater probes, it should be considered that BTEX and PAH concentrations associated with groundwater probe samples are typically biased high when they are collected from areas that contain NAPL/tar at residual or saturated levels. Whereas, samples collected from permanent monitoring wells will provide results that are more representative of true dissolved-phase conditions in such areas. For example, SHGP-05 (0 to 4 feet), collected in the vicinity of the former Tar Separating Tank, exhibited a total BTEX concentration of 1,003 ug/l, whereas MW-01, screened at 1.5 to 7.3 feet, exhibited a total BTEX concentration of only 9 ug/l. Additionally, SHGP-02 (1 to 5 feet), collected in the vicinity of the former Generator Room/Crude Oil Tank in the northern portion of the site, exhibited a total BTEX concentration of 7,400 ug/l compared to 102 ug/l exhibited by the sample collected from MW-05, screened at 2.5 to 7.5 feet.

   Figure 4-5 also illustrates the fact that off-site groundwater to the north, west and south also contain detectable levels of BTEX, with the highest concentrations detected immediately north of the site at SHGP-19, SHGP-20 and SHMW-04S. Additional details regarding off-site groundwater quality are provided in **Section 4.3.3**.

2. The presence of BTEX within the intermediate groundwater zone appears to be primarily localized within the eastern central portion of the site, including sample locations SHGP-02, SHGP-05 and SHGP-10, which were all groundwater probe samples collected during the initial field program. However, the most recent sample

collected from SHMW-02I, which is located in the eastern portion of the site and screened several feet below the zone in which these groundwater probes were collected, exhibited nondetectable levels of BTEX. Groundwater probe data also indicates migration of BTEX within the intermediate groundwater zone has occurred to the north and west of the site. Additional details regarding off-site groundwater quality are provided in **Section 4.3.3**.

3. BTEX data collected below 45 feet bgs, while limited, does indicate BTEX concentrations are significantly lower within the deep groundwater zone when compared to the shallower zones. The maximum total BTEX concentration observed in the deep groundwater zone of 151.0 ug/l was detected in groundwater probe sample SHGP-05 (48 to 50 feet).

PAHs

Table 4-9 summarizes on-site groundwater sample data associated with the supplemental field program that exhibited the highest total PAH concentrations along with the approximate locations of these samples in relation to former MGP structures/features, where appropriate. The table also indicates any significant field observations noted in these samples. Additional detail as to the distribution of NAPL in groundwater is provided in **Section 4.2.3**.

Consistent with the BTEX data, the highest total PAH concentration associated with the groundwater sampling conducted in support of the supplemental field program was 10,729.0 ug/l, detected in the sample collected from MW-02, located in the southeast corner of the site. Samples collected from this monitoring well as part of the initial field program exhibited total PAH concentrations of 5,511.0 ug/l (March 2000) and 5,114.0 ug/l (April 2000). Again, consistent with the BTEX data, the highest PAH concentrations in groundwater were generally observed in shallow groundwater at or above the peat/silt/clay unit. Samples collected from monitoring wells screened below this unit exhibited nondetectable concentrations of PAHs at wells SHMW-01I and SHMW-02I. In addition, a total PAH concentration of 308.0 ug/l was detected at well SHMW-02D.

Based on a review of **Figures 4-5** through **4-7**, which present data associated with both remedial investigation field programs, the following are noteworthy observations:

1. As shown on **Figure 4-5**, in general the highest total PAH concentrations were observed in the shallow groundwater zone in the eastern and central portions of the site primarily at groundwater probes SHGP-05, SHGP-09, SHGP-10 and SHGP-06. As discussed previously, BTEX and PAH data collected using groundwater probe sampling methods from areas that contain NAPL/tar at residual or saturated levels are typically biased high and often do not reflect true dissolved-phase concentrations. Review of PAH concentrations from shallow monitoring wells located within the same areas of these groundwater probes generally indicate significantly lower concentrations of PAHs. For example, SHGP-05 (0 to 4 feet), collected in the vicinity of the former Tar Separating Tank, exhibited a total PAH concentration of 11,326 ug/l, whereas MW-01, screened at 1.5 to 7.3 feet, exhibited a total PAH concentration of only 402 ug/l. Additionally, SHGP-02 (1 to 5 feet), collected in the vicinity of the former Generator Room/Crude Oil Tank in the northern portion of the site, exhibited a total PAH concentration of 3,910 ug/l compared to 1,160 ug/l exhibited by the sample collected from MW-05, screened at 2.5 to 7.5 feet.

   PAH concentrations in shallow groundwater also suggests the off-site migration of PAHs in the shallow groundwater zone to the north, northwest, west, southwest and to the south. Additional details regarding off-site groundwater quality are provided in **Section 4.3.3**.

2. Unlike BTEX compounds which are primarily present in shallow groundwater, intermediate groundwater samples collected throughout much of the site exhibit PAH concentrations. The highest PAH concentrations detected in the intermediate groundwater zone were identified in samples collected from the eastern portion of the site, including SHGP-02, SHGP-05 and SHGP-10. However, the most recent sample collected from SHMW-02I, which is located in the eastern portion of the site and screened several feet below the zone in which these groundwater probes were collected, exhibited nondetectable levels of PAHs, suggesting groundwater probe data is biased high, as previously discussed. Off-site migration of PAHs in the intermediate groundwater zone appears to be occurring to the north and west, similar to BTEX, as well as to the northwest and southwest. Additional details regarding off-site groundwater quality are provided in **Section 4.3.3**.

3. As shown on **Figure 4-7**, PAHs have been detected in the deep groundwater zone; however, at lower concentrations than observed in the shallow and intermediate zones. Groundwater probe sample SHGP-05 (48 to 50 feet), located in the vicinity of the former Tar Separating Tank in the central portion of the site (where the peat/silt/clay unit is relatively thin and/or absent), exhibited the highest total PAH concentration of 4,158.0 ug/l detected in the deep groundwater zone. In addition, SHGP-05 (60 to 62 feet) exhibited a total PAH concentration of 627 ug/l. However, the groundwater sample collected at SHMW-02D, located less than 20 feet from this probe location and screened at 65 to 75 feet, exhibited a total PAH concentration of only 76.0 ug/l. As previously discussed, this suggests that groundwater probe data is biased high.

Based on a review of all BTEX and PAH groundwater data, and groundwater flow directions observed on-site, the following former MGP structures are considered likely source areas:

- Tar Separating Tank
- Generator Room/Crude Oil Tank
- Gas Holders No. 2 and 3
- Gas Purifying Houses
- Oil Tanks
- Gas Oil Tank

Trends of Total BTEX/PAH Concentrations in Groundwater

Changes in total BTEX and total PAH concentrations with time in on-site monitoring wells MW-01 through MW-06 are shown graphically on **Figures 4-8** through **4-13**. The wells used to evaluate the historical trend of total BTEX and total PAHs were selected based on their relative location to potential source areas, as well as the availability of analytical data from multiple sampling events at each well. Additionally, several of these wells have historically exhibited some of the highest total BTEX/PAH concentrations. It should be noted that, at this point in time, BTEX and PAH data is limited to just four sample rounds with one round collected in 1995, two in 2000 and one in 2002. Furthermore, sampling methods used during the 1995 sample round may have been different from sampling conducted during later rounds. Therefore, while comparison of this data can be made in order to identify possible trends in contaminant concentrations, further sample data would be needed to verify these apparent trends.

A review of **Figures 4-8** through **4-13** shows that, with the exception of wells MW-02 and MW-03, the concentrations of total BTEX and total PAHs in on-site wells appear to have decreased since collection of the initial round of samples in November 1995. Specifically, the concentrations of total BTEX at well MW-01 decreased from 2,720 ug/l in November 1995 to 9 ug/l in May 2002. During this same period total PAHs decreased from 4,960 ug/l to 402 ug/l.

FIGURE 4-8

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

CHANGES OF TOTAL BTEX AND TOTAL PAH CONCENTRATIONS OVER TIME IN GROUNDWATER MONITORING WELL MW-01

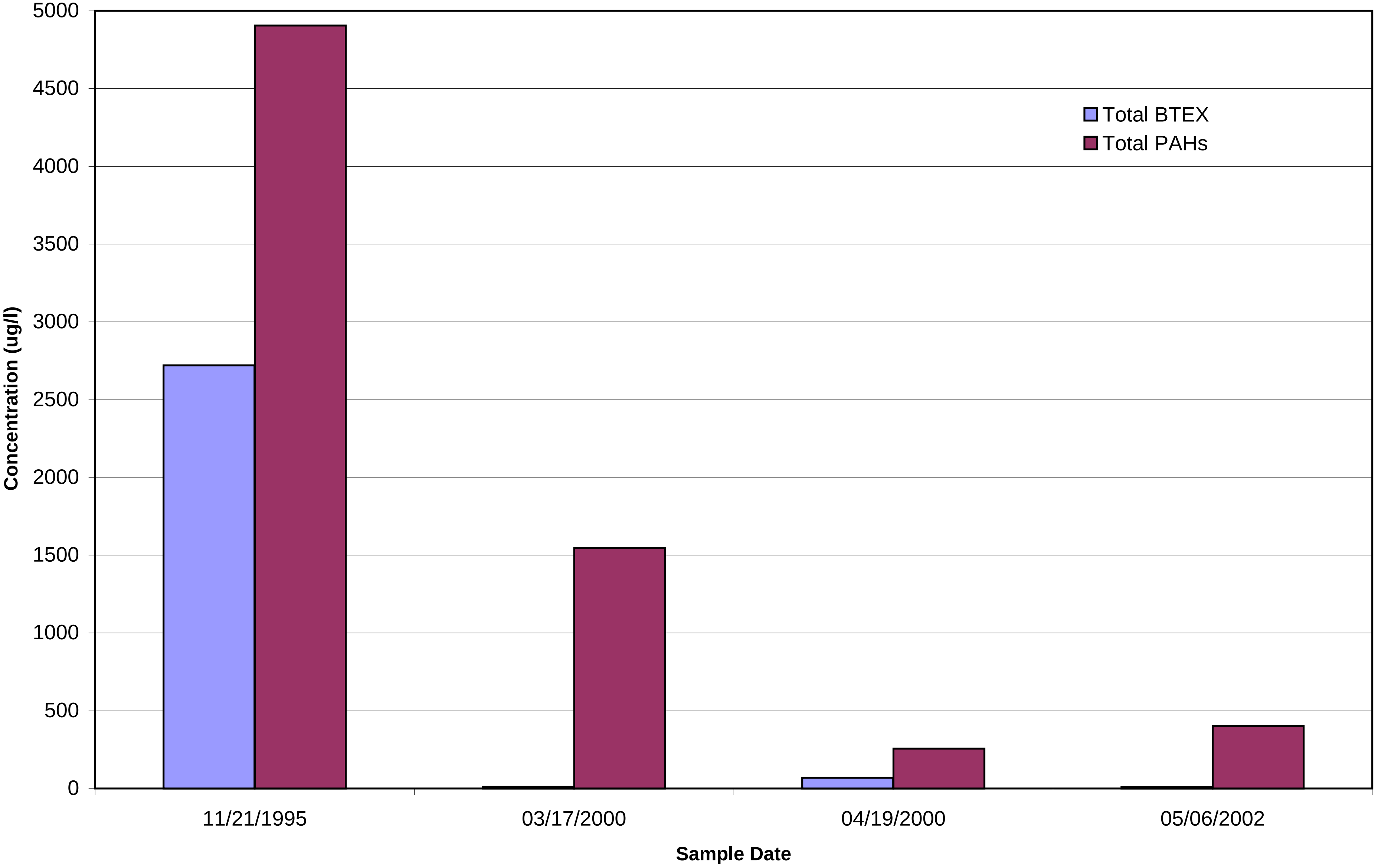
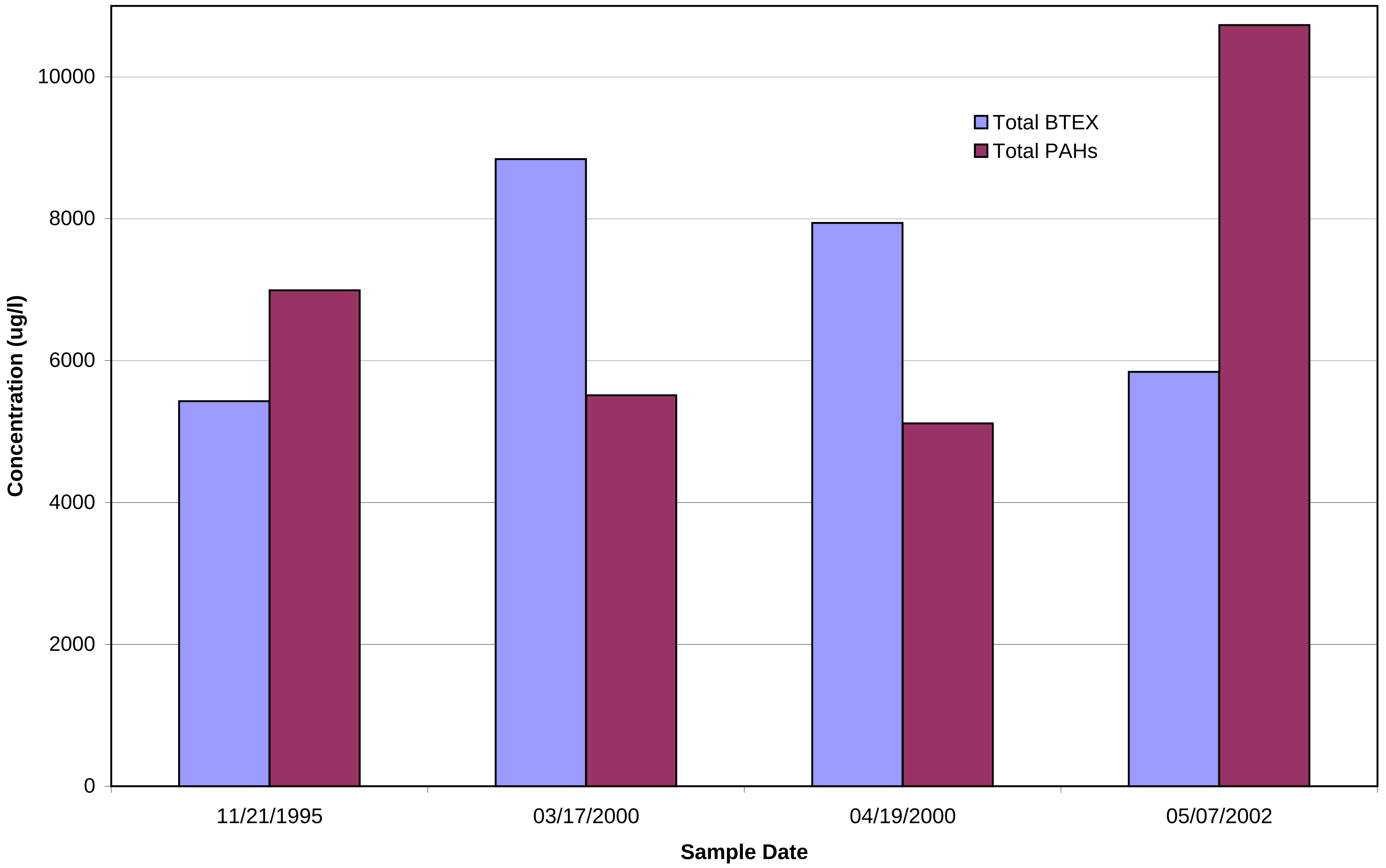


FIGURE 4-9

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

CHANGES OF TOTAL BTEX AND TOTAL PAH CONCENTRATIONS OVER TIME IN GROUNDWATER MONITORING WELL MW-02



1620 (KeySpan)\SAG HARBOR\Supplemental RI\Report\Figures\Figures 4-8 through 4-13

FIGURE 4-10

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

CHANGES OF TOTAL BTEX AND TOTAL PAH CONCENTRATIONS OVER TIME IN GROUNDWATER MONITORING WELL MW-03

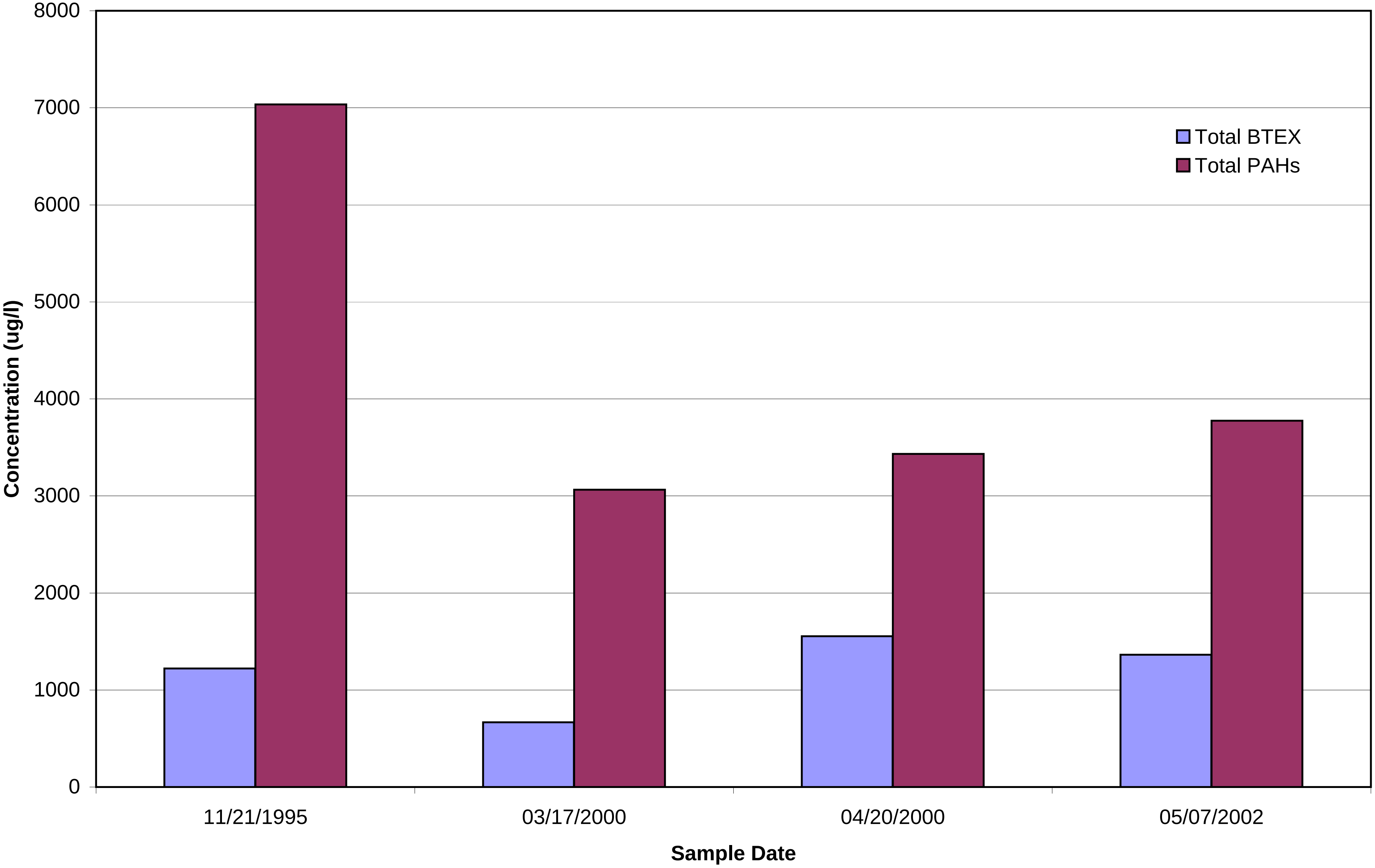


FIGURE 4-11

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

CHANGES OF TOTAL BTEX AND TOTAL PAH CONCENTRATIONS OVER TIME IN GROUNDWATER MONITORING WELL MW-04

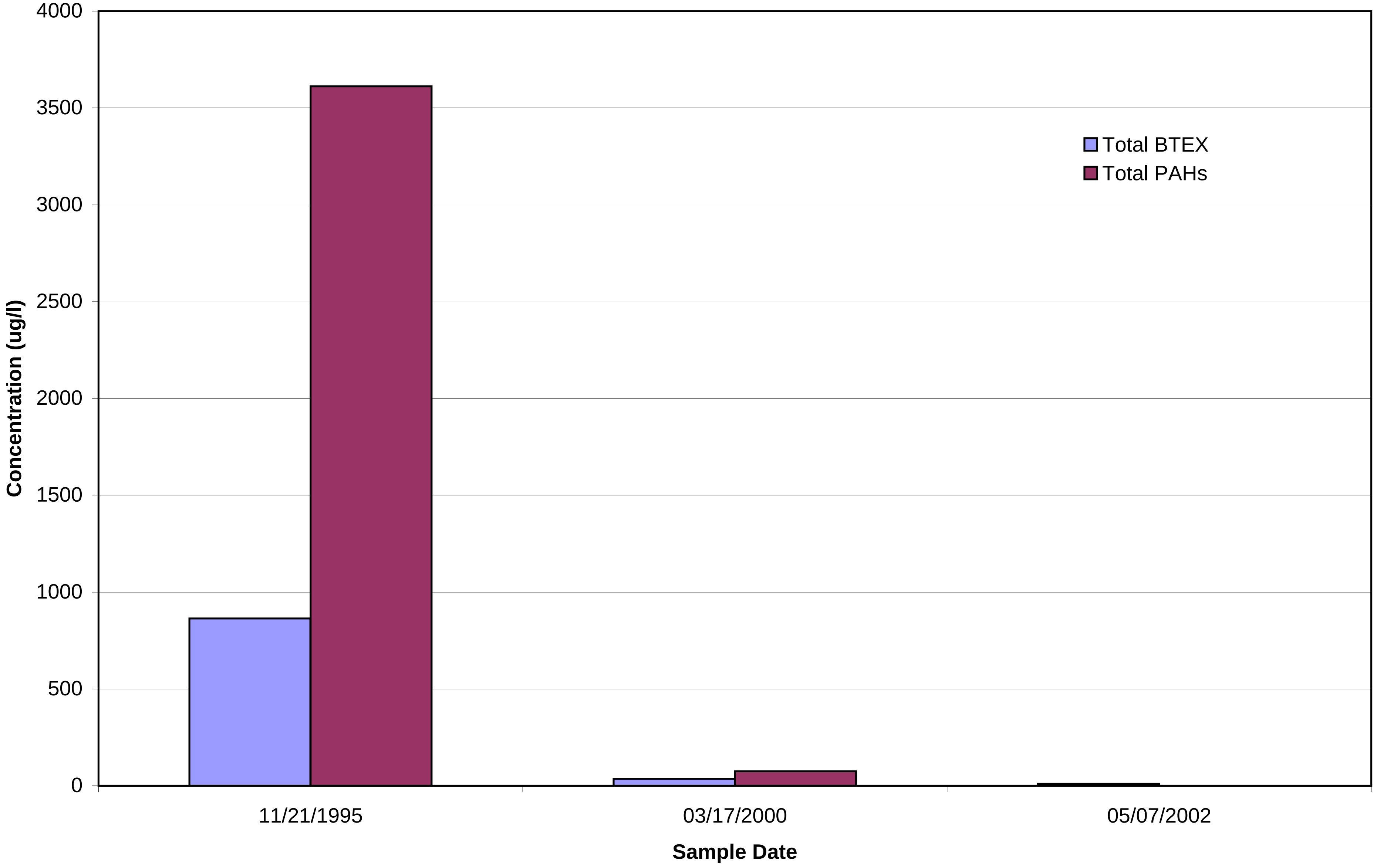


FIGURE 4-12

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

CHANGES OF TOTAL BTEX AND TOTAL PAH CONCENTRATIONS OVER TIME IN GROUNDWATER MONITORING WELL MW-05

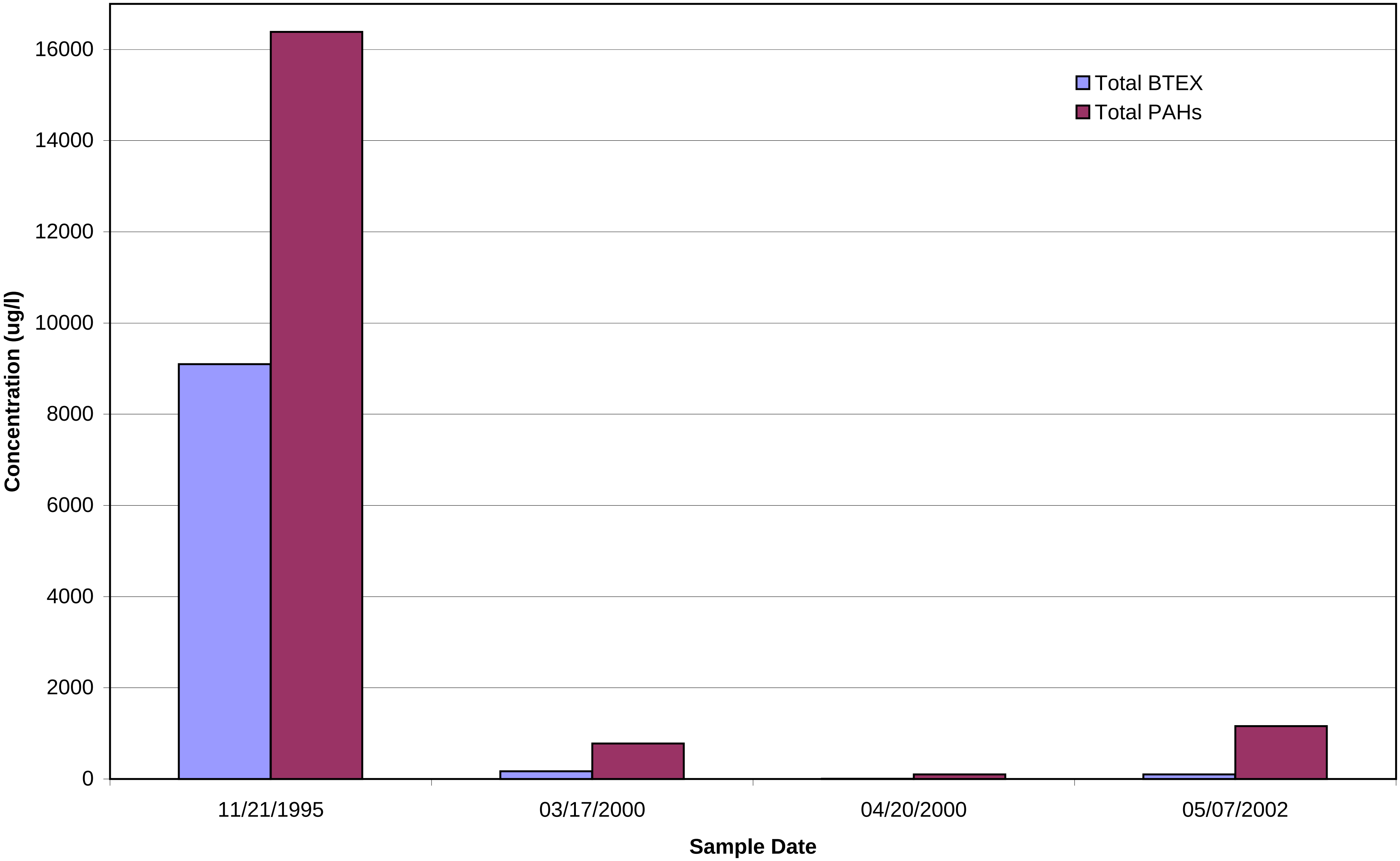


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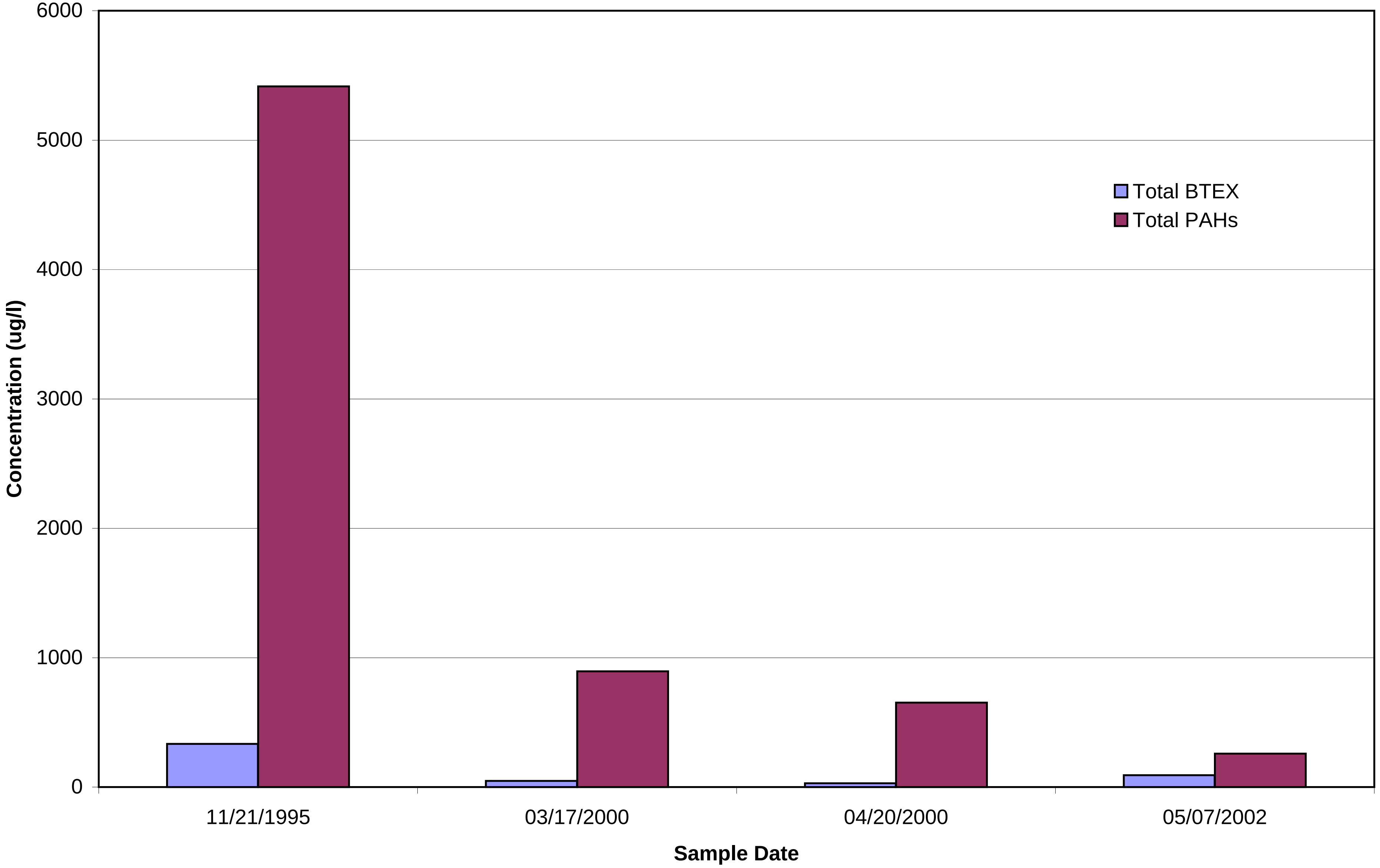
FIGURE 4-13

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

CHANGES OF TOTAL BTEX AND TOTAL PAH CONCENTRATIONS OVER TIME IN GROUNDWATER MONITORING WELL MW-06



Monitoring well MW-01 is located in the area of the former Tar Separating Tank and former Gas Holder No. 1 in the central portion of the site.

The concentrations of total BTEX in on-site monitoring well MW-04 decreased from 864 ug/l in November 1995 to 10 ug/l in May 2002. During this same period total PAHs decreased from 3,612 ug/l to not detected. Monitoring well MW-04 is located in the southwest corner of the site.

The concentrations of total BTEX in on-site monitoring well MW-05, as shown in **Table D-2** and on **Figure 4-12** decreased from 8,100 ug/l in November 1995 to 102 ug/l in May 2002. During this same period total PAHs decreased from 16,386 ug/l to 1,160 ug/l. Monitoring well MW-05 is located in the northeast portion of the site in the vicinity of the former Generator Room/Crude Oil Storage Tank and downgradient from former Gas Holder No. 1.

As shown on **Figure 4-13**, the concentrations of total BTEX in on-site monitoring well MW-06 decreased from 334 ug/l in November 1995 to 91 ug/l in May 2002. During this same period total PAHs decreased from 5,416 ug/l to 258 ug/l. Monitoring well MW-06 is located in the northeastern corner of the site in the former Purifier House adjacent to the former Oil Tank and downgradient from the former Gas Holder No. 1.

Review of the data in **Tables D-2** and **D-3** and **Figures 4-9** and **4-10** show that concentrations of total BTEX and total PAHs in monitoring wells MW-02 and MW-03 have fluctuated throughout the monitoring period and that there has no net increase or decrease of concentrations. Accordingly, the BTEX and PAH concentrations in the vicinity of monitoring wells MW-02 and MW-03 is considered to be stable or in a steady state.

RCRA Metals and Total Cyanide

As shown in **Table C-16**, metals analysis of groundwater samples collected from on-site monitoring wells as part of the supplemental field program indicate that the majority of RCRA metals are generally within concentration ranges that would be considered typical of ambient groundwater quality for the Upper Glacial Aquifer given the commercial and industrial land use within the area. Total cyanide concentrations for seven of the 10 groundwater samples collected from the site were found to be below the CRDL of 20 ug/l. Monitoring well MW-06 exhibited the maximum total cyanide concentration of 29.6 ug/l.

Geochemical Parameters and Field Measurements

The analytical results of the geochemical parameters and field measurements in on-site monitoring well groundwater are summarized in **Table C-17** and **Table C-18**. The range of concentrations and/or values for each of the key geochemical and field parameters measured in on-site groundwater monitoring wells are summarized in **Table 4-10**. The parameters analyzed to assess the overall geochemical conditions in the aquifer included iron, calcium, sodium, chloride, bicarbonate, and total dissolved solids. Field measurements included pH, specific conductance, temperature, dissolved oxygen, oxidation reduction potential (ORP), turbidity, and salinity. Discussions of the geochemical and field parameter analytical results are presented below.

Iron

As shown in **Table 4-10**, iron concentrations in on-site monitoring wells ranged from 128 ug/l in intermediate well SHMW-02I to 59,100 ug/l in shallow well MW-01. Review of data in **Table C-17** shows that iron concentrations in the intermediate wells are invariably an order of magnitude lower than the iron concentrations detected in the shallow wells. Comparison of iron concentrations (**Table C-17**) with total BTEX and total PAH concentrations (**Tables C-14** and **C-15**), respectively, shows that, with the exception of monitoring wells MW-01 and MW-02, iron varies directly with the concentrations of total BTEX and total PAHs. This relationship is indicative of reducing conditions that caused oxidized iron in the aquifer matrix to be reduced to the more soluble ferrous form. In keeping with this relationship, and as indicated in **Table 4-10**, the lowest redox potential was measured in monitoring well MW-01 where total iron concentrations were highest. Accordingly, the apparent anomalously high iron concentrations in monitoring wells MW-01 and MW-02 are consistent with the iron reduction process described

TABLE 4-10
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF GEOCHEMICAL AND FIELD PARAMETER ANALYTICAL RESULTS ON-SITE MONITORING WELLS

Parameter	Units	Range	Location With Maximum Concentration
Geochemical Parameters			
Iron	ug/l	128 - 59,100	MW-01
Calcium	ug/l	12,300 - 82,400	MW-01
Sodium	ug/l	5,510 - 57,400	MW-02
Chloride	ug/l	ND - 73,000	MW-02
Bicarbonate (as $CaCO_3$)	ug/l	26,000 - 320,000	SHMW-01S
Total Dissolved Solids (TDS)	ug/l	130,000 - 310,000	MW-03
Field Measurements			
pH	s.u.	5.75 - 7.34	MW-06
Specific Conductance	uMhos	173 - 524	MW-03
Temperature	(^{o}C)	12.3 - 13.8	SHMW-02D
Turbidity	ntu	ND - 560	MW-04
Dissolved Oxygen	mg/l	0.9 - 7.6	MW-03
Oxidation Reduction Potential (ORP)	mV	-129 - +204	SHMW-02I
Salinity	%	ND - 0.01	SHMW-01S, SHMW-02D, MW-05 and MW-06

above. It is noted that the correlation of high iron concentrations with the high concentrations of BTEX and PAHs suggests that the reducing conditions are caused by naturally-occurring biodegradation, wherein oxidized iron in the aquifer is being used as an electron acceptor during the anaerobic metabolism of BTEX and PAHs in groundwater.

Calcium

The concentration of calcium ranges from 12,300 ug/l in monitoring well SHMW-02I to 82,400 ug/l in monitoring well MW-01. The data in **Table C-17** show that concentrations of calcium vary in a similar manner as those for bicarbonate and iron. Dissolved calcium in groundwater, while naturally occurring, can also be attributed to the dissolution of calcium carbonate minerals in the aquifer. This dissolution process is strongly influenced by the presence of bicarbonate and hydrogen ions (measured as pH). Bicarbonate as well as dissolved iron in groundwater at the site is distributed in a similar manner as calcium and are by-products of biodegradation. Accordingly, calcium along with bicarbonate and iron provide indirect evidence for the occurrence of biodegradation of BTEX and PAHs in groundwater at the site.

Sodium

As shown in **Table 4-10**, sodium ranges from 5,510 ug/l in monitoring well MW-01 to 57,400 ug/l in monitoring well MW-02. Sodium is a ubiquitous cation and often occurs as sodium salts in the aquifer matrix, such as sodium chloride, or as an impurity in calcium carbonate minerals. A review of data in **Table C-17** shows that sodium concentrations detected in on-site monitoring wells closely mirror chloride concentrations, and accordingly, sodium and chloride in groundwater is likely derived by the dissolution of sodium chloride salts in the aquifer and/or from residue from salt used for roadway de-icing. The data in **Table C-17** also shows that sodium concentrations correlate with calcium concentrations, indicating that some of the sodium detected is likely released during the dissolution of calcium minerals as discussed above and some is attributed to the dissolution of sodium salts.

Chloride

As shown in **Table 4-10**, chloride concentrations ranged from not detected (at a reported detection limit of 5,000 ug/l) in monitoring well MW-01 to 73,000 ug/l in monitoring well MW-02. A review of data in **Table C-17** shows that chloride concentrations detected in on-site monitoring wells generally mirror sodium concentrations, and accordingly, chloride and sodium in groundwater is likely derived by the dissolution of sodium chloride salts in the aquifer. As discussed above, however, other sources of sodium chloride, such as road salts, may also be contributing to the sodium and chloride concentrations in groundwater at the site.

Bicarbonate

The analytical results in **Table 4-10** showed that bicarbonate ranged from 26 mg/l in well SHMW-02I to 320 mg/l in well SHMW-01S. Bicarbonate concentrations are generally higher in areas where total BTEX was detected as compared to areas where BTEX and or PAHs were not detected. As discussed above, the detection of elevated bicarbonate concentrations in groundwater containing BTEX and PAHs provides evidence for the occurrence of naturally-occurring biodegradation of these organic chemicals. During biodegradation carbon in organic substrate is oxidized to produce carbon dioxide, which in turn reacts with hydrogen (also produced during biodegradation) and/or carbonate minerals in the aquifer to produce bicarbonate.

Total Dissolved Solids

Total dissolved solids represent the net concentration of all dissolved positively and negatively charged ions and is used as a measure of the overall water quality. As shown in **Table 4-10**, TDS concentrations ranged from 130,000 ug/l in well MW-01 to 310,000 ug/l in MW-03.

Hydrogen Ion (pH)

As shown in **Table 4-10**, hydrogen ion concentration, measured as pH, ranges from 5.75 standard units (s.u.) in monitoring well SHMW-02I to 7.34 s.u. in monitoring well MW-06. This circum-neutral range of pH is typical for shallow groundwater in the Upper Glacial aquifer on Long Island. According to Weidemer (1995), this range of pH is favorable for growth of micro-organisms capable of degrading BTEX and PAHs.

Specific Conductance

As summarized in **Table 4-10**, specific conductance ranged from 173 micromhos (uMhos) in monitoring well SHMW-02I to 534 uMhos in monitoring well MW-03. Specific conductance is used as an indirect measurement of total charged ions in solution and, accordingly, is directly related to TDS, and the other dissolved cations and anions such as iron, calcium bicarbonate, chloride, etc.

Temperature

As shown in **Table 4-10**, groundwater temperature ranged from 12.3°C in monitoring well SHMW-01S to 13.8°C in monitoring well SHMW-02D.

Turbidity

As shown in **Table 4-10**, turbidity ranged from not detected in monitoring well SHMW-01S to 560 nephelometric turbidity units (NTU) in monitoring well MW-04.

Dissolved Oxygen

As shown in **Table 4-10**, the dissolved oxygen concentrations in on-site groundwater ranged from 0.9 mg/l in monitoring well MW-02 to 7.6 mg/l in monitoring well MW-03. It is noted that, based on review of data in **Tables C-14, C-15** and **C-18**, the lowest concentration of dissolved oxygen was measured in monitoring well MW-02 where the highest concentrations of total BTEX and total PAHs were detected. The dissolved oxygen concentrations measured in monitoring wells MW-03, SHMW-02I and SHMW-02D appear to be anomalous in comparison to the corresponding total BTEX and total PAH concentrations and the relative oxidation and reduction potentials measured in the samples from these wells. Despite these anomalies, the overall trend of low dissolved oxygen concentrations in areas with elevated organic chemical concentrations, although not consistent, may suggest that dissolved oxygen is being consumed during biodegradation of BTEX and PAHs. In addition, the detection of dissolved oxygen concentrations greater than 1 mg/l indicates that there is ample oxygen present in shallow groundwater at the site to support aerobic biodegradation.

It is noted that measurement of dissolved oxygen using an oxygen electrode, such as the one used to obtain the measurements presented in **Table C-18**, tend to be biased high due to the potential introduction of oxygen from atmospheric air during sampling. However, as used here, in conjunction with other groundwater geochemical parameters and field measurements, the dissolved oxygen concentrations provide an adequate representation of the overall distribution and behavior of dissolved oxygen in groundwater at the site.

Oxidation Reduction Potential

The data summarized in **Table C-18** show that the oxidation and reduction potentials (ORP) of on-site groundwater ranges from –129 millivolts (mV) in monitoring well MW-01 to 204 mV in SHMW-02I. Accordingly, groundwater at the site ranges from moderately oxidizing to moderately reducing. The ORP measurements vary in direct correlation with the concentrations of total BTEX and total PAHs. Groundwater with elevated organic chemical concentrations produces large negative ORP measurements and vice versa for groundwater where no BTEX and/or PAHs were detected.

Salinity

As shown in **Table C-18**, salinity was typically not detected, and where detected was present at a concentration of 0.01%. Based on the salinity measurements, the groundwater is classified as fresh water and does not appear to be influenced directly by the saline marine waters of Sag Harbor Cove.

4.2.3 Extent of NAPL

Drawings 4A through **4C** graphically depict the locations of soil borings completed as part of the supplemental field program, as well as prior studies where the following field observations were noted in subsurface soil: NAPL-saturated conditions, blebs and lenses of NAPL; observations of soil grains coated by NAPL; soil staining; soil with naphthalene/ hydrocarbon-like odors; as well as areas of solid tar. **Drawings 4A** through **4C** reflect these observations if one or more soil samples exhibited the observation in the shallow (0 to 8 feet bgs), intermediate (8 to 18 feet bgs) and deep (greater than 18 feet deep) soil zones, respectively. In addition, **Drawings 4D** and **4E** graphically depict this same information vertically in geologic cross sections which run through the site and adjoining properties. All listed drawings are provided in map pockets at the end of this section.

Shallow Soil

As shown on **Drawing 4A**, NAPL and/or tar was observed at saturated levels in the shallow soil zone most frequently within the eastern half of the site and within the vicinity of the following former MGP structures: Tar Separating Tank, Gas Holder No. 1, the Generator Room/Crude Oil Tank and Purifying House. In addition, NAPL/tar was observed at saturated conditions within the vicinity of the former Oil Storage Tanks, as well as in areas to the north of this former structure as indicated by SHMW-01I, B-03 and SHSB-01. Some lateral off-site migration of NAPL/tar appears to have occurred to the north (SHSB-14), west (SHSB-29) and to the south (SHSB-31, SHSB-32 and SHMW-07I).

While isolated zones of NAPL saturated soil were encountered above the peat/silt/clay unit throughout much of the site, shallow on-site monitoring wells exhibited little evidence of any measurable separate-phase NAPL. The only exceptions to this were less than 0.1-foot of LNAPL at existing well MW-05, observed during the December 18, 2000 round of water level measurements, and less than 0.2-foot of DNAPL, observed at MW-02 during the April 2002 sample round Note that MW-02 does not have a sump for DNAPL collection.

Intermediate Soil

The review of **Drawing 4B** illustrates that the majority of soil borings exhibiting NAPL-saturated conditions within the intermediate soil zone were completed in the eastern portion of the site, including at SHSB-21 and SHSB-22 where the peat/silt/clay unit appears to be relatively thin. In addition, NAPL-saturated conditions appear to be present within the intermediate zone at SHSB-09 and SHSB-12 within the peat/silt/clay unit. SHSB-32 located approximately 35 feet south of the site is the only off-site boring exhibiting NAPL-saturated conditions in the intermediate soil zone. However, this consists of a relatively thin band of tar encountered between 13.25 and 13.50 feet below grade. As illustrated in the B-B’ cross-section provided on **Drawing 4D**, this tar band appears to be below the peat/silt/clay unit at this location. The distribution of NAPL/tar above within and below the peat/silt/clay unit indicates this strata behaves as a partial confining layer limiting the vertical migration of NAPL/tar as well as BTEX and PAHs. However, in areas where this strata is thin or absent, vertical migration of NAPL/tar is likely to occur. These conditions are best illustrated by cross-sections C-C’ and D-D’ provided on **Drawing 4E**.

Deep Soil

Drawing 4C indicates that NAPL at saturated levels in on-site subsurface soil below a depth of 18 feet is limited to SHMW-02D and SHSB-02, which are located in the eastern portion of the site where the peat/silt/clay unit appears to be relatively thin. The only off-site boring exhibiting any evidence of NAPL below the peat/silt/clay unit was SHSB-15, located directly north of the eastern portion of the site, again in an area where this stratum is relatively thin.

These field observations suggest that vertical migration of NAPL may continue in areas where the peat/silt/clay is thin or absent. However, no intermediate or deep monitoring wells set below the peat/silt/clay unit exhibited measurable separate-phase NAPL, indicating that while NAPL has been observed below this stratum in subsurface soil, it appears to be currently in a relatively immobile residual saturation state.

During the installation of monitoring well SHMW-02D, tar blebs, staining and sheens were noted to a depth of 90 feet bgs. A review of the boring log for SHMW-02D also indicates the presence of NAPL-saturated soil immediately above and within a fine-sand/silt lens encountered at approximately 50 feet bgs. However, soil borings SHSB-20, SHSB-21 and SHSB-22, completed as part of the supplemental field program in order to further define the presence of this deep NAPL zone, did not encounter NAPL-saturated conditions at this interval. Soil recovered from SHSB-21 completed to the northeast of the former Tar Separating Tank did exhibit a slight sheen and naphthalene-like odor above and within this fine sand/silt lens. These conditions are best illustrated by cross-section B-B’ provided on **Drawing 4D**. Based on this information, the extent of the NAPL-saturated conditions observed at a depth of 50 feet during the installation of SHMW-02D appear to be localized to immediately below the former Tar Separating Tank. Furthermore, staining, odors and/or sheens were not observed within soil recovered from the three supplemental field program borings below a depth of 55 feet.

4.3 Off-site Investigation

4.3.1 Surface Soil

Surface soil sampling was conducted in five off-site locations (SHSS-14 through SHSS-18). The objective of this sampling effort was to establish a range of background conditions in the vicinity of the site, as well as to evaluate whether storm water runoff had adversely impacted surface soil off the southwest corner of the site. Surface soil sample locations were selected in consultation with the NYSDEC and NYSDOH from a variety of land use areas. The 0 to 2 inch interval below the soil surface was analyzed from all five sampling locations. In addition, the 0 to 6 inch interval below the soil surface was also analyzed from the sampling location immediately adjacent to the southwest corner of the site.

In general, all surface soil samples consisted of moist, brown to dark brown silty sand topsoil. None of the surface soil samples exhibited any PID readings. Analytical results for BTEX, PAHs, RCRA metals and cyanide associated with surface soil samples are summarized in **Tables C-1, C-2 and C-3**, respectively. In addition, **Drawing 4F** summarizes the analytical results for the samples collected as part of the supplemental field program as well as for surface soil samples collected as part of the initial field program.

BTEX

Total BTEX concentrations in the five surface soil samples ranged from non-detect up to a maximum of 0.004 mg/kg, with xylene being the only BTEX compound detected above the method detection limit. SHSS-17 (0 to 2 inches) exhibited the highest concentration of total BTEX, which is likely attributable to storm water runoff from adjacent roadways. This sample was collected adjacent to the intersection of Spring Street and Bridge Street, approximately 700 feet south of the former MGP site.

PAHs

Total PAH concentrations ranged from non-detect up to a maximum of 3.3 mg/kg in samples collected from the 0 to 2 inches interval below the soil surface in the five off-site surface soil sample locations. The 0 to 6 inches interval was also analyzed for PAHs from the sample collected immediately adjacent to the southwestern corner of the site (SHSS-14). This sample exhibited a concentration of 24.0 mg/kg of total PAHs.

RCRA Metals and Total Cyanide

The ranges of RCRA metal and total cyanide concentrations detected in the five off-site surface soil samples are summarized below:

Constituents	**Concentration Range (mg/kg)**	**Sample Exhibiting Maximum Concentration**
Arsenic	1.3 – 27.1	SHSS-17
Barium	8.8 – 37.8	SHSS-14
Cadmium	ND – 0.13	SHSS-17
Chromium	3.1 – 19.7	SHSS-17
Lead	12.9 – 101	SHSS-17
Mercury	0.020 - 0.12	SHSS-17
Selenium	ND - 0.67	SHSS-17
Silver	ND	N/A
Total Cyanide	ND – 0.47	SHSS-17

As indicated above, the majority of the highest concentrations of metals were found in SHSS-17, which was located adjacent to the intersection of Spring Street and Bridge Street, approximately 700 feet south of the former MGP site. However, all results were within or below background concentrations for soil in the eastern United States, as presented on **Table 4-1**.

4.3.2 Subsurface Soil

In order to better define off-site migration of NAPL/tar and BTEX/PAHs in off-site subsurface soil, a total of 24 soil probes were completed to depths ranging from 30 to 60 feet bgs. A total of 61 soil samples were selected for analysis. The analytical results of off-site subsurface soil samples analyzed for BTEX and PAHs are summarized in **Tables C-11 and C-12**, respectively. RCRA metals and total cyanide are summarized in **Table C-13**.

BTEX

Twenty-four out of 61 off-site subsurface soil samples collected in support of the supplemental field program exhibited detectable levels of BTEX. **Table 4-11** summarizes off-site subsurface soil samples that exhibited the highest total BTEX and total PAH concentrations along with the approximate locations of these samples in relation to the site and former MGP structures/features. The table also summarizes any significant field observations noted for the

TABLE 4-11

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

OFF-SITE SOIL SAMPLES EXHIBITING THE HIGHEST TOTAL BTEX AND TOTAL PAH CONCENTRATIONS

Sample ID (Boring and Sample Depth)	Total BTEX Concentration (mg/kg)	Total PAH Concentration (mg/kg)	Location (in Relation to Former MGP Structure and/or Site)	PID (PPM)	Field Description of Recovered Sample
SHSB-26 (5-6')	0.06	1,588.40	North of the site on the north side of the Long Island Avenue right-of-way.	20.0	brown tar staining, naphthalene-like odor
SHSB-29 (5-7')	59.68	4,803.00		82.1	NAPL, moderate staining, moderate naphthalene -like odor
SHSB-31 (4-6')	29.00	1,169.00	Southwest of the site in the Bridge Street right-of-way.	29.0	NAPL, some to moderate staining, naphthalene -like odor
SHSB-32 (5-7')	34.57	631.40	South of the site in the Fisher's Annex parking lot.	57.6	mod-heavy staining w/blebs of NAPL, moderate naphthalene-like odor
SHSB-33 (5.5-7.5')	124.10	6,222.00	South of the site in the Fisher's Annex parking lot.	97.3	band of moderate staining, naphthalene-like odor
SHSB-38 (8-10')	301.00	4,702.00	Southeast of the site in the central portion of the Village Parking Lot.	156.0	moderate staining, strong naphthalene-like odor
SHSB-42 (8-10')	33.00	1,348.00	of the Retail Stores' parking lot).	225.0	slight black-brown staining from 9-10', moderate-strong naphthalene-like odor, sheen

samples. Also, note that additional detail as to the distribution of NAPL in subsurface soil is provided in **Section 4.2.3**. Samples exhibiting the highest total BTEX concentrations were generally detected from soil samples also exhibiting odors, staining, and containing NAPL at varying saturation levels. Additionally, these samples typically exhibited PID readings above background levels. In virtually every soil sample exhibiting detectable levels of BTEX, ethylbenzene and xylene were the predominant BTEX compounds with benzene and toluene in many cases being below detection limits.

As shown on **Table 4-11**, the maximum total BTEX concentration of 301.0 mg/kg was identified in soil sample SHSB-38 (8 to 10 feet). SHSB-38 was located east of the commercial building south of the site (former Long Island Fisherman site). Subsurface soil recovered from depths of 5 to 13 feet bgs at SHSB-38 exhibited staining, naphthalene odors and PID readings up to 156 ppm. This zone of subsurface soil is located immediately above and within the peat/silt/clay unit, which was noted between 8 and 14 feet bgs at this location. Subsurface soil beneath the peat/silt/clay unit did not exhibit significant staining or odors, indicating that the strata have acted to impede vertical migration in this location. Soil sample SHSB-38 (12 to 14 feet) only exhibited 1.7 mg/kg of total BTEX.

Lateral migration of BTEX to the south of the site appears to be attributable to a southern component of groundwater flow in the extreme southeastern portion of the site (refer to **Section 3.3**). Southern migration of BTEX may also have been influenced by the southern trending or slope that appears to exist along the top of the peat/silt/clay unit that extends to the south of the site. In the southeastern portion of the site, in the location of former Gas Holder No. 3, the top of the strata appears to exist at approximately 2.2 feet below mean sea level. In the location of SHSB-38, to the east of the former Long Island Fisherman site, the top of the strata appears to exist at approximately 3.8 feet below mean sea level. As a result, this approximate 1.6-foot elevation change along the top of the strata, which acts as a confining unit when present in significant thicknesses, could further influence the southern trend of migration. Similar conditions exist at SHSB-32 and SHSB-33, located south of the site and just north of the building on the former Long Island Fisherman site.

Based on the findings of the remedial investigation, BTEX concentrations in subsurface soil have been found to generally decrease rapidly with depth, even in areas exhibiting evidence of NAPL. None of the soil samples collected below 18 feet bgs in support of either of the remedial investigation field programs exhibited BTEX concentrations greater than 0.2 mg/kg.

Figures 4-1 through **4-4**, presented in **Section 4.2.1**, depict total BTEX concentrations along with total PAH concentrations in subsurface soil at on-site and off-site sample locations. The maps include soil data generated as part of the supplemental field program, as well as data generated under prior studies. The data used for **Figure 4-1** is based on subsurface data collected at depths ranging from 0 to 2 feet bgs. The data used for **Figure 4-2** is based on subsurface soil data collected at depths ranging from 2 to 8 feet bgs. The data used for **Figure 4-3** is based on subsurface soil data collected at depths ranging from 8 to 18 feet bgs. The data used for **Figure 4-4** is based on subsurface soil data collected at depths greater than 18 feet bgs.

Based on the review of these figures, as well as the boring logs, the following observations can be made regarding the off-site migration of BTEX in subsurface soil:

1. The highest off-site BTEX concentrations were observed between 2 and 10 feet bgs (i.e.: above the peat/silt/clay unit), primarily to the south of the site. Southern off-site migration of BTEX appears to be attributable to a southern component of groundwater flow in the extreme southeastern portion of the site, as well as the southern trending slope that appears to exist along the top of the peat layer that extends to the south of the site.

2. Off-site migration of BTEX in subsurface soil above the peat/silt/clay unit is also occurring to a lesser degree to the north, northwest and west.

3. Relatively low concentrations of total BTEX exist in off-site locations at deeper intervals (i.e.: concentrations do not exceed 0.186 mg/kg in any sample analyzed from a depth of 18 feet bgs or greater).

PAHs

A total of 29 of the 60 off-site subsurface soil samples collected in support of the supplemental field program exhibited detectable levels of PAH compounds. Total detectable levels of PAH compounds ranged from trace concentrations of less than 0.05 mg/kg to a maximum total concentration of 6,222.0 mg/kg observed at SHSB-33 (5.5 to 7.5 feet).

As summarized on **Table 4-11**, sample SHSB-33 (5.5 to 7.5 feet), which exhibited the highest off-site total PAH concentration of 6,222.0 mg/kg, and SHSB-38 (8 to 10 feet), which exhibited the third highest off-site total PAH concentration of 4,702.0 mg/kg, were completed south of the former MGP site on the former Long Island Fisherman site. SHSB-31 (4 to 6 feet) was also completed south of the site and exhibited 1,169.4 mg/kg total PAHs. Migration of PAH compounds south of the site appears to correspond to the migration of BTEX compounds in this direction. As discussed above, southern migration appears to be attributable to a southern component of groundwater flow in the extreme southeastern portion of the site, as well as the southerly slope that appears to exist along the top of the peat/silt/clay unit that extends to the south of the site.

Off-site migration of PAHs in subsurface soil is also occurring to a lesser degree to the north, northwest and west. The second highest total PAH concentration of 4,803.0 mg/kg was observed in sample SHSB-29 (5 to 7 feet), which was completed immediately adjacent to the site, within the right-of-way along the east side of Bridge Street. The sample was collected immediately above a relatively thin zone of the peat/silt/clay unit (approximately 1 foot thick). SHSB-26 (5 to 6 feet) and SHSB-42 (8 to 10 feet) were completed to the north of the site, apparently just beyond the extent of the peat/silt/clay unit, and contained 1,588.4 mg/kg and 1,348.0 mg/kg of total PAHs, respectively, in these relatively shallow intervals. The findings of the initial field program also indicated migration of PAHs to the northwest and to the north. Migration to the northwest appears to be attributable to migration along the top of the peat/silt/clay unit, as influenced by the predominate direction of groundwater flow in this direction. SHSB-14 (5 to 7 feet), which contained 738.7 mg/kg of total PAHs, appears to exist just beyond the peat layer off the northwestern portion of the site. Migration to the north, off the northeastern portion of the site, appears to have occurred at deeper intervals due to the relative absence or thin nature of the peat/silt/clay unit in the eastern portion of the former MGP site and the northern component of groundwater flow from this portion of the site. This is evidenced by SHSB-15 completed during the initial field program, which exhibited a total PAH concentration of 134.1 mg/kg at a depth of 26 to 28 feet bgs, and exhibited staining, hydrocarbon and/or naphthalene odor to depths of 32 feet bgs.

As with BTEX, PAH concentrations generally tend to rapidly decrease with depth at the Sag Harbor site. None of the soil samples collected below 14 feet bgs in support of the supplemental field program exhibited total PAH concentrations above 1.1 mg/kg. Furthermore, none of the off-site soil samples collected below 8 feet bgs in support of the initial field program exhibited total PAH concentrations exceeding 0.22 mg/kg, with the exception of SHSB-15 (26 to 28 feet), as discussed above. As mentioned above, this appears to be attributable to the relative absence or thin nature of the peat/silt/clay unit in the eastern portion of the former MGP site, and the northern component of groundwater flow from this portion of the site.

Based on the review of **Figures 4-1** through **4-4**, as well as the boring logs, the following observations can be made regarding the off-site migration of PAH in subsurface soil:

1. Consistent with BTEX data, the highest off-site PAH concentrations were observed between 2 and 10 feet bgs (i.e.: above the peat/silt/clay unit), primarily to the south of the site. As with BTEX data, southern off-site migration of PAHs appears to be attributable to a southern component of groundwater flow in the extreme southeastern portion of the site, as well as the southerly slope that appears to exist along the top of the peat/silt/clay unit that extends to the south of the site.
2. Off-site migration of PAHs in subsurface soil above the peat/silt/clay unit is also occurring to a lesser degree to the north, northwest and west.
3. Migration to the north, off the northeastern portion of the site, appears to have occurred at deeper intervals due to the relative absence or thin nature of the peat/silt/clay unit in the eastern portion of the former MGP site and the northern component of groundwater flow from this portion of the site.
4. As with BTEX, PAH concentrations generally tend to rapidly decrease with depth at the Sag Harbor site, with the exception of to the north of the northeastern portion of the site.

RCRA Metals and Cyanide

The ranges of RCRA metal and total cyanide concentrations detected in the off-site subsurface soil samples are summarized below.

Constituents	Concentration Range (mg/kg)	Sample Exhibiting Maximum Concentration
Arsenic	ND – 8.1	SHSB-45 (0 to 2 feet)
Barium	1.2 – 85.6	SHSB-46 (1.25 to 2.25 feet)
Cadmium	ND – 1.5	SHSB-46 (1.25 to 2.25 feet)
Chromium	1.2 – 12.2	SHSB-39 (8 to 10 feet)
Lead	0.51 – 277	SHSB-46 (1.25 to 2.25 feet)
Mercury	ND – 0.64	SHSB-46 (1.25 to 2.25 feet)
Selenium	ND – 2.8	SHSB-37 (10 to 12 feet)
Silver	ND – 1.6	SHSB-46 (1.25 to 2.25 feet)
Total Cyanide	ND – 0.21	SHSB-44 (28 to 30 feet)

As shown above, the majority of the highest concentrations of metals were observed in sample SHSB-46 (1.25 to 2.25 feet). SHSB-46 was advanced with a hand auger off the eastern portion of the northern property boundary of the site, in a landscaped berm between the former MGP site and the paved parking lot for the commercial stores north of the site. It was advanced at the request of the owner of the property north of the site, who stated that he believed the berm was constructed with excavated material potentially associated with the installation of the storm water dry wells in the parking lot on his property. The soil recovered from the shallow probe advanced in this location did not exhibit any PID readings, staining or odor. Soil recovered at this boring (from 0 to 2 feet bgs) consisted of tan-brown, silty fine sandy fill with some clay, organic matter, glass fragments and plastic. The bottom 4 inches of this boring also contained pebbles/stones and small black fragments of coal and clinker. Notwithstanding the fact that the shallow soil sample from this location did contain some of the highest concentrations of metals detected in off-site subsurface soil samples, none of the metals were detected at concentrations above typical background levels for eastern United States (refer to **Table 4-1**).

RCRA metals detected in other off-site subsurface soil samples were also found to be generally within or below typical background concentrations for the eastern United States. Total cyanide analysis indicates that 56 of the 60 subsurface soil samples selected for analysis from off-site locations were found to be free of detectable levels of this compound. The four samples that did exhibit detectable levels of total cyanide exhibited relatively low concentrations of this compound, with the highest concentration being 0.21 mg/kg in sample SHSB-44 (28 to 30 feet).

The above findings of the supplemental field program are consistent with the findings of the initial field program. Analyses of off-site subsurface soil samples collected in support of the initial field program did not reveal the presence of any detectable levels of total cyanide, and RCRA metals were found to be generally within or below typical background concentrations for the eastern United States.

4.3.3 Groundwater

As described in **Section 2.4**, the off-site groundwater investigation conducted as part of the supplemental field program included the collection of samples from groundwater probes as well as the sampling of existing monitoring wells and monitoring wells installed as part of the supplemental field program. All monitoring well and groundwater probe samples were analyzed for BTEX and PAHs. Well samples were also analyzed for RCRA metals, total cyanide and free cyanide. In addition to the routine MGP analytical parameters, samples collected from monitoring wells were analyzed for geochemical parameters and field parameters were measured. The analytical results for BTEX and PAHs in groundwater samples collected from monitoring wells are summarized in **Tables C-19** and **C-20**, and samples collected from groundwater probe points are summarized in **Tables C-25** and **C-26**. RCRA metals and total cyanide results from monitoring wells are presented on **Table C-21**. Free cyanide results from monitoring wells are presented on **Table C-22**. The analytical results for geochemical and field parameters for samples collected from monitoring wells are summarized in **Tables C-23** and **C-24**.

The BTEX and PAH data were used to further delineate the vertical and horizontal distribution of these compounds in off-site groundwater. The geochemical parameters and field measurements were used to evaluate the overall geochemical conditions in the aquifer, with specific focus on evaluating the ability of the aquifer to reduce the mass of BTEX and PAHs through biodegradation.

Based on the hydrogeologic setting of the site and consistent with the June 2002 RI Report, the groundwater chemical data has been grouped into three hydrogeologic zones including:

Shallow Groundwater

Groundwater located above or within the peat/silt/clay unit between 0 and 10 feet below grade is considered shallow groundwater. As discussed in **Section 3.3**, shallow groundwater above this confining unit is under water table conditions.

Intermediate Groundwater

Groundwater located below the peat/silt/clay unit, and between 25 and 45 feet below grade, is considered intermediate groundwater and is under partial confining conditions.

Deep Groundwater

Groundwater between 45 and 75 feet is considered deep groundwater and is under partial confining conditions.

The following discussion presents the findings of the off-site groundwater sampling activities completed as part of the supplemental field program.

BTEX

Twenty-seven out of 96 off-site groundwater samples collected from existing wells, newly installed (supplemental field program) monitoring wells and supplemental field program groundwater probes exhibited detectable levels of BTEX. **Table 4-12** summarizes off-site groundwater samples that exhibited the highest total BTEX and total PAH concentrations along with the approximate locations of these samples in relation to the site and former MGP structures/features. The table also summarizes any significant field observations noted for the samples. Also, note that additional detail as to the distribution of NAPL in groundwater is provided in **Section 4.2.3**.

As shown in **Table 4-12**, in general, the highest total BTEX concentrations were observed in the shallow groundwater zone adjacent to or in close proximity to the site. The highest off-site total BTEX concentration of 3,154.0 ug/l was observed in sample SHMW-04S. This monitoring well also exhibited the highest total BTEX concentration in off-site groundwater of 7,490.0 ug/l as part of the initial field program. Well cluster SHMW-04 is located approximately 50 feet north of the northwestern portion of the site, on the south side of Long Island Avenue. However, BTEX concentrations decrease with depth at this well cluster, with total BTEX being non detectable at SHMW-04I. The next highest total BTEX concentration of 2,463.0 ug/l was observed in sample SHMW-06S, located approximately 35 feet south of the site. BTEX concentrations also appear to decrease with depth at this location, with BTEX being nondetectable at SHMW-06I.

The majority of shallow off-site groundwater samples collected in close proximity to the site exhibited hydrocarbon-like odors and sheens, but measurable separate phase NAPLs were not noted. Groundwater samples collected further off-site, such as samples collected from groundwater probes SHGP-24, SHGP-35, SHGP-31, SHGP-46 and SHGP-42, did not exhibit any odors or sheens.

Presented as part of **Section 4.2.2**, **Figures 4-5** through **4-7** summarize total BTEX and total PAH concentrations in groundwater collected from on-site and off-site monitoring wells and groundwater probes. **Figure 4-5** depicts the shallow groundwater zone, at or above the peat silt/clay unit, **Figure 4-6** illustrates the intermediate groundwater zone data and **Figure 4-7** represents the groundwater data available for sample depths greater than 45 feet bgs, which is considered the deep groundwater zone. Based on a review of these figures and supporting data, the following are noteworthy observations:

TABLE 4-12

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

OFF-SITE GROUNDWATER SAMPLES EXHIBITING THE HIGHEST TOTAL BTEX AND TOTAL PAH CONCENTRATIONS

Sample ID (Probe/Well No. and Sample Depth)	Total BTEX Concentration (ug/l)	Total PAH Concentration (ug/l)	Location (in Relation to Former MGP Structure and/or Site)	Field Description of Recovered Sample
SHMW-04S	3,154	5,107		no visible NAPL or sheen or naphthalene/hydrocarbon-like odors
SHMW-06S	2,463	4,694	South of the site in the Fishers Annex Parking Lot.	light sheen and naphthalene-like odor
SHMW-07S	1,562	6,585	South of the southeast corner of the site in the Village Parking Lot.	sheen and naphthalene-like odor
SHMW-09S	506	2,472	Lot.	no visible NAPL or sheen or naphthalene/hydrocarbon-like odors
SHGP-34 (30-34)	196	549	West of the site in the southwestern portion of the Beacon Restaurant parking lot.	no visible NAPL or sheen or naphthalene/hydrocarbon-like odors
SHGP-35 (30-34)	161	532		no visible NAPL or sheen or naphthalene/hydrocarbon-like odors
SHGP-37 (2-6)	1,827	6,745	Southwest of the site in the Bridge Street right-of-way.	sheen and mild hydrocarbon-like odor
SHGP-40 (5-9)	148	801	South of the site in the southeastern portion of the Fisher's Annex property.	no visible NAPL or sheen or naphthalene/hydrocarbon-like odors
SHGP-41 (6-10)	2,210	2,860	Southeast of the site in the southern portion of the Village Parking Lot.	slight sheen and naphthalene-like odor

1. **Figure 4-5** indicates that off-site migration of BTEX is occurring in the shallow groundwater zone to the north (SHMW-04S, SHGP-20 and SHGP-19) of the site. However, total BTEX concentrations decrease to less than 250 ug/l at groundwater probes SHGP-15 and SHGP-16, located on the north side of Long Island Avenue and approximately 90 feet north of the site boundary. BTEX compounds were found to be nondetectable in shallow groundwater samples collected from SHGP-29, SHGP-30 and SHGP-32, all located between 180 and 200 feet north of the site boundary.

2. Groundwater containing BTEX appears to be migrating in a west to northwesterly direction. Shallow groundwater at SHGP-14 located approximately 80 feet northwest of the site exhibited a total BTEX concentration of 610 ug/l. In addition, groundwater probes SHGP-17, SHGP-34 and SHGP-35 located to the west of the site also exhibited total BTEX concentrations of between 38 and 150 ug/l. As shown on **Figure 4-5**, SHGP-34 is located approximately 25 feet from the bulkhead of Sag Harbor Cove. Based on the proximity of SHGP-34 to Sag Harbor Cove, it is likely that groundwater containing BTEX is discharging to this surface water in the vicinity of this sample location.

3. Off-site migration of BTEX in shallow groundwater to the southwest also appears to be occurring based on data from SHGP-21 and SHGP-22 and monitoring well SHMW-09S. However, the shallow groundwater sample collected from SHGP-28 and SHGP-49, located approximately 170 feet and 240 feet southwest, respectively, of the site did not exhibit detectable levels of BTEX. In addition, off-site migration of BTEX is occurring in shallow groundwater to the south as indicated by BTEX data from SHMW-06S, SHMW-07S, SHGP-23, SHGP-27, SHGP-37, SHGP-40 and SHGP-41. However, based on groundwater probes completed further south, including SHGP-42, SHGP-51 and SHGP-56, BTEX migration does not extend more than approximately 160 feet south of the site in the shallow groundwater zone.

4. A review of **Figure 4-6** indicates off-site migration of BTEX within the intermediate groundwater zone does not appear to be occurring to the south or east. However, data from SHGP-14, SHGP-15, SHGP-16 and MW-03I indicates some migration to the north and northwest. Similar to the shallow groundwater zone, data from SHGP-34 and SHGP-35 also indicates migration of BTEX in the intermediate groundwater zone to the west, with a portion of this groundwater likely discharging to Sag Harbor Cove in the vicinity of SHGP-34. However, as indicated on **Figure 4-6**, numerous groundwater probes located 100 feet or greater to the northwest and north of the site identified relatively low BTEX concentrations (not exceeding 100 ug/l) in the intermediate groundwater zone.

5. As shown on **Figure 4-7**, based on observed BTEX concentrations in groundwater samples collected below a depth of 45 feet, off-site migration of BTEX compounds in the deep groundwater zone does not appear to be occurring.

PAHs

Of the 96 groundwater samples collected from off-site locations in support of the supplemental field program, 36 exhibited detectable levels of PAHs. As with BTEX, the highest PAH concentrations were observed in samples collected from the shallow groundwater zone in close proximity to the site. The highest total PAH concentration of 6,745 ug/l was detected in groundwater probe sample SHGP-37 (2 to 6 feet) located approximately 20 feet south of the southwestern site corner. However, the intermediate groundwater sample collected at this probe only exhibited a total PAH concentration of 102 ug/l, indicating that PAHs are generally limited to the shallow groundwater zone in this area. The next highest total PAH concentration of 6,585 ug/l was detected in the sample collected from monitoring well SHMW-07S, located approximately 40 feet south of the site. However, the intermediate groundwater sample collected at this well cluster exhibited nondetectable levels of PAHs, indicating that PAHs are also limited to the shallow groundwater zone in this area.

Based on the review of **Figures 4-5** through **4-7**, introduced in **Section 4.2.2**, and supporting data, the following are noteworthy observations:

1. **Figure 4-5** indicates that off-site migration of PAHs in the shallow groundwater zone is occurring to the north and northwest (SHGP-14, SHGP-15, SHGP-18, SHGP-20 and SHMW-04S), to the west (SHGP-21, SHGP-22 and SHMW-09S) and to the south (SHGP-23, SHGP-37, SHMW-06S and SHMW-7S). However, shallow groundwater samples from the northernmost sample points (SHGP-29, SHGP-30 and SHGP-32) and southwestern-most sample points (SHGP-28, SHGP-48 and SHGP-49) did not exhibit detectable levels of PAHs, indicating that the off-site migration of PAHs in shallow groundwater to the north and southwest has not occurred beyond these points.

2. PAH data from the shallow groundwater zone collected from SHGP-17, SHGP-34 and SHGP-35, located to the west of the site, exhibited total PAH concentrations of between 84 ug/l and 385 ug/l. Based on the location of these groundwater probes, groundwater containing PAHs appears to be migrating in a westerly direction. Based on the proximity of SHGP-34 to Sag Harbor Cove, it is likely that groundwater containing PAHs is discharging to this water body in the vicinity of this sample location.

3. As discussed above, the two highest total PAH concentrations observed in off-site groundwater were identified at SHGP-37 and SHMW-07S, both located immediately

south of the site. However, based on groundwater probes completed further south, including SHGP-42, SHGP-51 and SHGP-56, PAH migration does not appear to extend more than 160 feet south of the site in the shallow groundwater zone.

4. Off-site migration of PAHs in the intermediate groundwater zone appears to be occurring to the north (SHGP-16 and SHGP-19), similar to BTEX. However, as indicated on **Figure 4-6**, numerous sample points completed further north, including SHGP-29, SHGP-30, SHGP-32 and SHGP-58, indicate nondetectable to trace concentrations (not exceeding 5 ug/l) in this area. PAHs were also detected in the intermediate groundwater zone to the west of the site at SHGP-34 and SHGP-35, with total PAH concentrations of 549 ug/l and 532 ug/l, respectively. Based on the proximity of SHGP-34 to Sag Harbor Cove, it is likely that intermediate groundwater containing PAHs is discharging to this area of the surface water body.
5. Based on observed PAH concentrations in groundwater samples collected below a depth of 45 feet, off-site migration of PAHs in the deep groundwater zone does not appear to be occurring.

RCRA Metals and Total Cyanide

Metals analysis of groundwater samples collected from all newly installed and existing off-site monitoring wells indicate that the majority of RCRA metals are generally within concentration ranges that would be considered typical of ambient groundwater quality of the Upper Glacial Aquifer given the commercial and industrial land use within the area.

Nineteen out of 22 off-site groundwater samples exhibited total cyanide concentrations below detection limits or below the CRDL of 20 ug/l. Groundwater collected from shallow monitoring well SHMW-07S exhibited the highest total cyanide concentration at 85.3 ug/l. The remaining samples with detected total cyanide included SHMW-06S (27.7 ug/l) and SHMW-12S (41.5 ug/l). All off-site monitoring wells exhibited free cyanide at nondetectable concentrations or below the CRDL of 20 ug/l.

Geochemical Parameters and Field Parameters

The analytical results of the geochemical parameters and field measurements in off-site monitoring well groundwater are summarized in **Tables C-23** and **C-24**, respectively. The range of concentrations and/or measurement values for each of the key geochemical and field parameters measured in off-site groundwater monitoring wells are summarized in **Table 4-13**. The parameters analyzed to assess the overall geochemical conditions in the aquifer include iron, calcium, sodium, chloride, bicarbonate, and total dissolved solids. Field measurements included pH, specific conductance, temperature, dissolved oxygen, oxidation reduction potential (ORP), turbidity, and salinity. Discussions of the geochemical and field parameter analytical results are presented below.

Iron

As shown in **Table 4-13**, iron concentrations in off-site monitoring wells ranged from 35 ug/l in intermediate well SHMW-06I to 48,800 ug/l in shallow well SHMW-07S. Consistent with on-site data, a review of the data in **Table C-23** shows that iron concentrations in the intermediate wells are typically an order of magnitude lower than the iron concentrations detected in the shallow wells. Comparison of iron concentrations (**Table C-23**) with corresponding total BTEX and total PAH concentrations (**Tables C-19** and **C-20**) shows, that with the exception of monitoring wells MW-01 and MW-02, iron concentrations are higher in groundwater containing detectable BTEX and PAHs and lower where these chemicals were absent.

Consistent with the discussions for iron in on-site groundwater presented in **Section 4.2.2**, the relationship between iron and BTEX and PAHs provides indirect evidence that ferric iron in the aquifer is being used as an electron acceptor during biodegradation.

Calcium

As shown in **Table 4-13**, the concentration of calcium ranges from 15,800 ug/l in monitoring well SHMW-09I to 232,000 ug/l in monitoring well SHMW-07S. The data in **Table C-23** show that concentrations of calcium vary in a similar manner as those for bicarbonate and iron. Dissolved calcium in groundwater is typically attributed to the dissolution of calcium carbonate minerals in the aquifer. This dissolution process is strongly influenced by

TABLE 4-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF GEOCHEMICAL AND FIELD PARAMETER ANALYTICAL RESULTS
OFF-SITE MONITORING WELLS

Parameter	Units	Range	Locating With Maximum Concentration
Geochemical Parameters			
Iron	ug/l	35 - 48,800	SHMW-07S
Calcium	ug/l	15,800 - 232,200	SHMW-11I
Sodium	ug/l	9,100 - 5,060,000	SHMW-11I
Chloride	ug/l	10,000 - 9,300,000	SHMW-11I
Bicarbonate (as CaCO3)	ug/l	33,000 - 660,000	SHMW-13S
Total Dissolved Solids (TDS)	ug/l	110,000 - 19,000,000	SHMW-11I
Field Measurements			
pH	s.u.	5.7 - 10.49	SHMW-12S
Specific Conductance	uMhos	162 - 18,900	SHMW-11I
Temperature	(^{o}C)	12.1 - 18.6	SHMW-06S
Turbidity	ntu	ND - 489	SHMW-04S
Dissolved Oxygen	mg/l	0.2 - 10.4	SHMW-10S
Oxidation Reduction Potential (ORP)	mV	-285 - +303	SHMW-08I
Salinity	%	ND - 1.1	SHMW-10I and 11I

the presence of bicarbonate and hydrogen ions (measured as pH). Bicarbonate as well as dissolved iron in groundwater at the site is distributed in a similar manner as calcium, and are by-products of biodegradation. Accordingly, calcium along with bicarbonate and iron provide indirect evidence of biodegradation of BTEX and PAHs in groundwater at the site.

Exceptions to this general trend are observed in wells SHMW-10I, SHMW-11S and SHMW-11I in which notable increases of both calcium and chloride are apparent. Accordingly, the primary source of calcium in groundwater at these off-site wells may be calcium chloride salt, a common de-icing agent.

Sodium

As shown in **Table 4-13**, sodium ranges from 9,100 ug/l in monitoring well SHMW-05S to 5,060,000 ug/l in monitoring well SHMW-11I. Review of the data in **Table C-23**, shows that the concentrations of sodium and chloride are correlated. Sodium is a ubiquitous cation and often occurs as sodium salts in the aquifer matrix, such as sodium chloride, or as an impurity in calcium carbonate minerals. Sodium, as with chloride, may also be derived from residue from salts used to de-ice roadways.

It is noted that the concentrations of sodium, as well as those for calcium, sodium, chloride, and TDS in wells SHMW-10I, SHMW-11S and SHMW-11I appears to be anomalous and suggests that their source of groundwater is different from the remainder of the on and off-site areas.

Chloride

As shown in **Table 4-13**, chloride concentrations ranged from 10,000 ug/l in monitoring well SHMW-05S to 9,300,000 ug/l in monitoring well SHMW-11I. The concentrations of chloride in off-site monitoring wells directly mirror sodium concentrations, and accordingly, sodium and chloride in groundwater appear to have been derived by the dissolution of sodium chloride salts in the aquifer. Alternatively, the chloride, as discussed above for sodium, may also be derived from road de-icing salt.

Bicarbonate

The analytical results in **Table 4-13** showed that bicarbonate ranged from 33,000 ug/l mg/l in well SHMW-13I to 660,000 ug/l in well SHMW-13S. A review of the data indicates that bicarbonate is higher in wells where BTEX and PAHs were detected as compared to areas where these organic chemicals were not detected. This correlation suggests that bicarbonate is being produced as a result of the biodegradation of BTEX and PAHs. In brief, during biodegradation, carbon in organic substrate is oxidized to produce carbon dioxide, which in turn reacts with hydrogen (also produced during biodegradation) and/or carbonate minerals in the aquifer to produce the dissolved bicarbonate.

Total Dissolved Solids

Total dissolved solids represent the net concentration of all dissolved positively and negatively charged ions and is used as a measure of the overall water quality. As shown in **Table 4-13**, TDS concentrations ranged from 110,000 ug/l in well SHMW-05S to 1,900,000 ug/l in SHMW-11I.

Hydrogen Ion (pH)

As shown in **Table 4-13**, hydrogen ion concentration, measured as pH, ranges from 5.75 standard units (s.u.) in monitoring well SHMW-03I to 10.5 s.u. in monitoring well SHMW-12S. Excluding wells SHMW-04S, SHMW-09S, SHMW-10S, SHMW-11S and SHMW-12S, the pH in the off–site groundwater is circum-neutral which is normal for shallow groundwater in the Upper Glacial aquifer on Long Island. The anomalously high pH values discussed above are accompanied by correspondingly high bicarbonate.

Specific Conductance

As shown in **Table 4-13**, specific conductance ranged from 162 micromhos (uMhos) in monitoring well SHMW-05I to 18,900 uMhos in monitoring well SHMW-11I. Specific conductance is used as an indirect measurement of charged ions in solution and, accordingly, is related to TDS, calcium, sodium, chloride and bicarbonate.

Temperature

As shown in **Table 4-13**, groundwater temperature ranged from 12.1°C in monitoring well SHMW-10SS to 18.6°C in monitoring well SHMW-06S.

Turbidity

As shown in **Table 4-13**, turbidity ranged from not detected in monitoring well SHMW-07I to 489 NTU in monitoring well SHMW-04S.

Dissolved Oxygen

As shown in **Table 4-13,** the dissolved oxygen concentrations in off-site groundwater ranged from 0.20 mg/l in monitoring well SHMW-04I to 10.4 mg/l in monitoring well SHMW-10S. Dissolved oxygen appears to vary randomly as compared to concentrations of total BTEX and total PAHs.

Oxidation Reduction Potential

Table 4-13 shows that the oxidation-reduction potential (ORP) of off-site groundwater ranges from –285 millivolts (mV) in monitoring well SHMW-12S to 303 mV in SHMW-08I. Accordingly, groundwater at the site ranges from oxidizing to strongly reducing. A review of the ORP data in **Table C-24** with the total BTEX and total PAH data in **Tables C-19** and **C-20**, shows that ORP correlates directly with the concentrations of total BTEX and total PAHs. In general, groundwater with elevated organic chemical concentrations produces large negative ORP measurements and vice versa for groundwater where no BTEX and/or PAHs were detected. The development of reducing conditions in groundwater containing elevated BTEX, PAHs, iron and bicarbonate provides indirect evidence that biodegradation is occurring.

Salinity

As shown in **Table 4-13**, salinity ranged from not detected to 1.1% in monitoring wells SHMW-10I and SHMW-11I.

4.3.4 Pore Water

A total of eight pore water samples were collected from Sag Harbor Cove within the suspected discharge area of groundwater flowing from the former MGP site. As discussed in **Section 2.4**, the pore water samples were collected immediately beneath the cove bottom using a 6-inch long stainless steel well screen. Each sample was analyzed for BTEX and PAHs. The BTEX results are summarized in **Table C-27** and the PAH results are summarized in **Table C-28**. The pore water sample locations are provided on **Drawing 2** as well as **Figure 2-3**.

BTEX

The results show that BTEX was not detected in the eight pore water samples that were collected and analyzed.

PAHs

Three out of the eight pore water samples exhibited relatively low detectable levels of PAHs, with total PAH concentrations of 1 ug/l detected at SHPW-01 and SHPW-02 and 4 ug/l detected at SHPW-08.

4.3.5 Surface Water

As discussed in **Section 2.4**, a total of 16 surface water samples were collected from Sag Harbor Cove at eight different locations, with one sample collected immediately off the cove bottom and the second one approximately 12 inches off the cove bottom. All samples were analyzed for BTEX and PAHs with the results summarized in **Tables C-29** and **C-30**, respectively. The surface water sample locations are provided on **Drawing 2** as well as **Figure 2-3**.

BTEX

BTEX compounds were not detected in any of the surface water samples with the exception of SHSW-08 (Bottom) and SHSW-08 (Bottom + 12 inches), which both exhibited a relatively low concentration of 1.0 ug/l of xylene.

PAHs

PAHs were not detected in any of the 16 surface water samples.

4.3.6 Surface Water Sediment

As discussed in **Section 2.4**, a total of 16 sediment samples were collected from Sag Harbor Cove at 8 locations with one sample collected from 0 to 6 inches below the cove bottom and one sample collected from 6 to 12 inches below the cove bottom. In addition, two sediment samples were collected from Sag Harbor Cove southwest of the site from 0 to 6 inches below the cove bottom in order to assess background conditions. All samples were analyzed for BTEX, PAHs and total organic carbon (TOC), the results of which are summarized in **Tables C-31**, **C-32** and **C-33**, respectively. The surface water sediment sample locations are provided on **Figure 2-3**.

BTEX

Sixteen out of the 18 sediment samples did not exhibit detectable concentrations of BTEX. Trace concentrations of xylene were detected in two surface water sediment samples ranging from 0.001 mg/kg in sample SHSD-05 (6 to 12 inches) to 0.027 mg/kg in sample SHSD-09 (0 to 6 inches). SHSD-09 was one of the two background samples collected southwest of the site.

PAHs

Sixteen of the 18 sediment samples exhibited detectable concentrations of PAHs, with total PAHs ranging from 0.3 mg/kg at SHSD-01 (6 to 12 inches) to a maximum of 46.8 detected at SHSD-08 (0 to 6 inches). With the exception of 2-methylnaphthalene, all PAHs were detected in at least one or more samples. The most frequently detected PAHs included fluoranthene, pyrene and benzo(a)anthracene, which were detected in all 16 samples exhibiting PAHs. While these PAHs are commonly associated with MGP residuals, they are also produced through the incomplete combustion of fossil fuels such as gasoline and diesel, which is introduced to the cove from marine watercraft. Furthermore, the areas of Sag Harbor Cove in which all sediment samples were collected are also actively used as boat marinas. In addition, Sag Harbor Cove receives runoff from surrounding streets and parking lots.

Total Organic Carbon

Total organic carbon was detected in all surface water sediment samples, ranging in concentration from 0.5 percent by weight in sample SHSD-02 (6 to 12 inches) to 7.4 percent in sample SHSD-09 (0 to 6 inches).

4.3.7 Groundwater Seep

Rose Street, located to the south of the former MGP site, is known to routinely have flooding and groundwater seeps in relation to high water table conditions. In consultation with the NYSDEC, one “groundwater seep” sample (SHROSE-01) was collected from a depression adjacent to the north side of Rose Street that had accumulated surface water associated with groundwater seeps from the area. The objective of this sampling effort was to evaluate the quality of this “groundwater” that residents could potentially come into contact with during periods of high water table conditions.

In general, the standing water that was sampled contained a slight sheen that appeared to be related to iron oxide. In fact, the majority of the areas along Rose Street, as well as a portion of Bridge Street near its intersection with Rose Street, typically exhibit what appears to be iron oxide staining. Analytical results for VOCs and SVOCs are summarized in **Tables C-34** and **C-35**, respectively.

VOCs

Volatile organic compounds (VOCs) were not detected above method detection limits with the exception of acetone, which was detected at a relatively low concentration of 7 ug/l. This compound is a common laboratory contaminant.

SVOCs

Semi-volatile organic compounds (SVOCs) were not detected above method detection limits.

4.3.8 Air

Air sampling was conducted at 17 off-site locations. A total of 36 samples were collected and each sample was analyzed for 61 volatile organic compounds. Of these 36 samples, 20 were collected from inside homes/businesses, 5 were collected from basement/crawl spaces and 11 were collected outside. The majority of the volatile organic compounds for which analysis was performed were not detected. Additionally, naphthalene, the compound most commonly associated with potential MGP impacts, was not detected in any of the samples. Results obtained from this air sampling, including frequency of detection and the minimum and maximum detected concentrations for each compound, are summarized in **Tables 4-14**, **4-15** and **4-16**, for ambient air, basement/crawl space air and indoor (living/working space) air, respectively. Analytical results are also provided in **Table C-39**. The analytical results obtained were reviewed by the NYSDOH and the results did not suggest site-related impacts to indoor air in the homes and businesses where samples were collected.

4.3.9 Tap Water

Based on the findings of a private water supply well and basement survey, it was determined that two residences were utilizing private water supply wells. Tap water sampling activities were conducted at the two residences located approximately 450 feet south of the site. A filtration device was in use at one of the residences. Therefore, samples were taken upstream (SHTW-01) and downstream (SHTW-01A) of the device. Samples were analyzed for VOCs, SVOCs, RCRA metals and total cyanide. The analytical results are presented in **Tables C-36** through **C-38**.

Analytical results indicate that all VOCs and SVOCs were “not detected” with the exception of chloroform in one of the samples at a concentration of 1 ug/l, well below NYSDOH drinking water standards/action levels. Metals analysis indicated detectable levels of barium. Lead was detected at both residences with concentrations of 2.6 and 2.5 ug/l. The levels of barium and lead are well below NYSDOH drinking water standards/action levels. Cyanide and all other RCRA metals were “not detected.”

TABLE 4-14
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF CONCENTRATIONS DETECTED IN OFF-SITE AMBIENT AIR SAMPLES

Analyte	Frequency of Detection *	Minimum Detected Concentration	Maximum Detected Concentration
1,2,4-Trimethylbenzene	5/11	0.71	68
1,3,5-Trimethylbenzene	1/11	--	34
2-Butanone	3/11	3.7	27
2-Propanol	1/11	--	15
4-Ethyltoluene	1/11	--	63
4-Methyl-2-pentanone	1/11	--	5.5
Acetone	4/11	8.8	120
Benzene	1/11	--	0.56
Chloromethane	8/11	1.7	5.4
Ethanol	4/11	8.3	70
Ethylbenzene	2/11	10	14
Freon 11	1/11	--	1.8
Freon 12	1/11	--	3.2
m,p-Xylenes	6/11	1.2	70
Methylene Chloride	5/11	0.74	17
o-Xylene	5/11	5.4	52
Tetrachloroethene	1/11	--	9.6
Toluene	6/11	2	110

All units are in ug/m^3.
*Total includes duplicate sample.

TABLE 4-15
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF CONCENTRATIONS DETECTED IN OFF-SITE BASEMENT/CRAWL SPACE AIR SAMPLES

Analyte	Frequency of Detection	Minimum Detected Concentration	Maximum Detected Concentration
Acetone	2/5	14	20
Carbon Disulfide	1/5	--	13
Ethanol	2/5	12	22
Freon 12	1/5	--	6
m,p-Xylenes	1/5	--	5.6
Methylene Chloride	4/5	4.5	37
Toluene	2/5	4.5	8.6

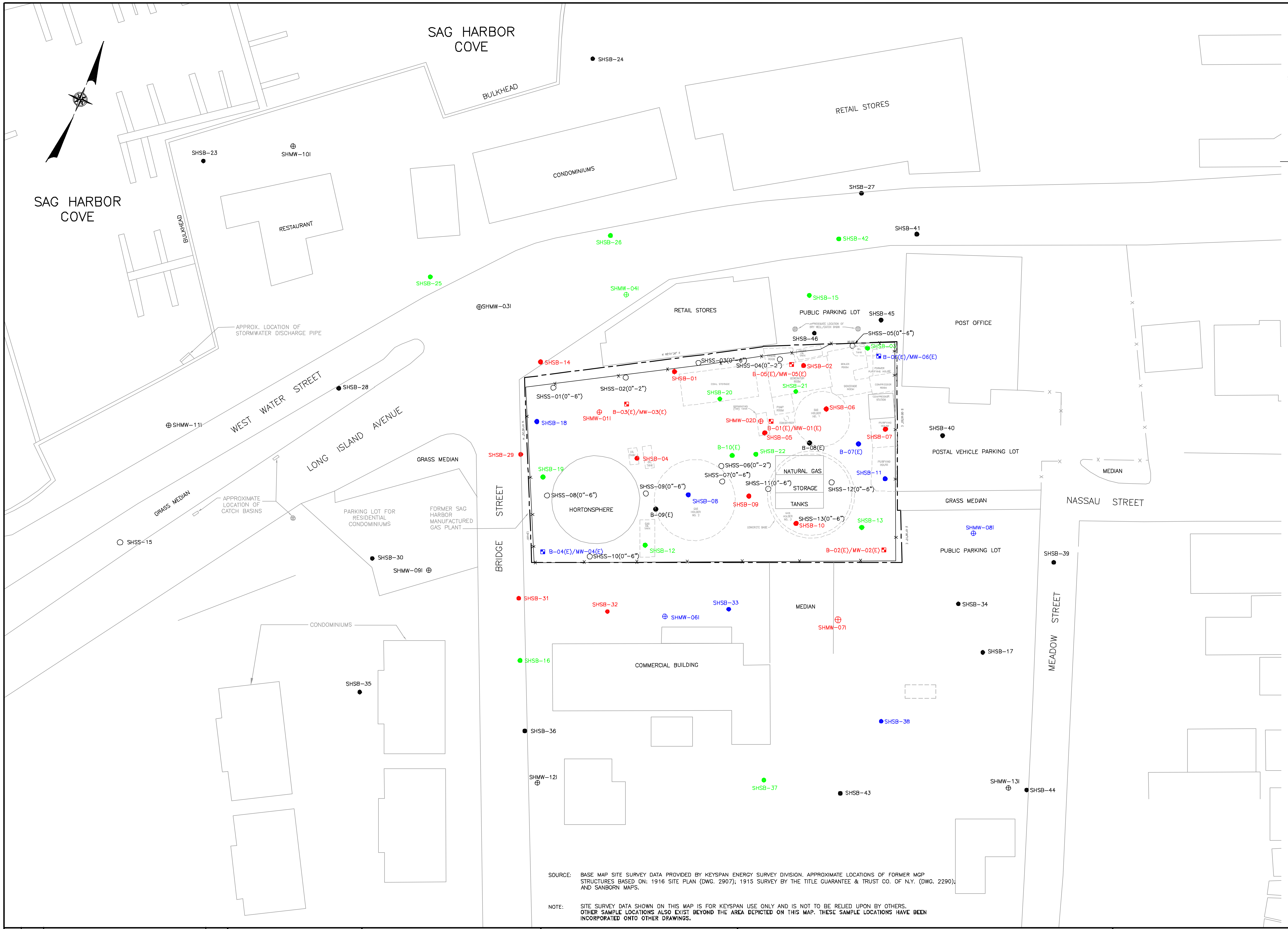
All units are in ug/m^3.

TABLE 4-16
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

SUMMARY OF CONCENTRATIONS DETECTED IN OFF-SITE INDOOR (LIVING/WORKING SPACE) AIR SAMPLES

Analyte	Frequency of Detection	Minimum Detected Concentration	Maximum Detected Concentration
1,2,4-Trimethylbenzene	8/20	3.7	45
1,4-Dichlorobenzene	1/20	--	120
1,3,5-Trimethylbenzene	3/20	4.3	11
2-Butanone	3/20	21	102
2-Propanol	11/20	10	6600
4-Ethyltoluene	1/20	--	22
4-Methyl-2-pentanone	1/20	--	5.1
Acetone	20/20	11	240
Benzene	3/20	2.9	8.6
Carbon Disulfide	1/20	--	11
Chloroform	2/20	4.7	10
Chloromethane	9/20	1.8	2.6
Cyclohexane	1/20	--	11
Ethanol	18/20	5.5	640
Ethylbenzene	4/20	2.2	13
Freon 11	5/20	4.3	23
Freon 12	6/20	3.3	7.1
Heptane	3/20	24	29
Hexane	2/20	10	12
m,p-Xylenes	7/20	5.8	42
Methyl tert-butyl ether	2/20	47	80
Methylene Chloride	16/20	2.3	22
o-Xylene	8/20	2.5	19
Styrene	1/20	--	8.2
Tetrachloroethene	2/20	7.3	20
Tetrahydrofuran	2/20	31	41
Toluene	17/20	3.7	400

All units are in ug/m^3.



LEGEND:

SHSB-01	●	COMPLETED SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING)
SHMW-01S,I,D	⊕	COMPLETED GROUNDWATER MONITORING WELL LOCATION
B-08(E)	●	SOIL BORING SAMPLING LOCATION FROM GTI PHASE I INVESTIGATION-APRIL 1997
B-01(E)/ MW-01(E)	▨	SOIL BORING CONVERTED TO MONITORING WELL LOCATION FROM GTI PHASE I INVESTIGATION-APRIL 1997
	☐	APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
	—x—x—x—	FENCE

FIELD OBSERVATIONS AT DEPTH INTERVALS OF 0-8 FEET

SHSB-07	🟥	TAR\NAPL SATURATED
SHSB-08	☐	BLEBS, GLOBS, LENSES, GRAIN-COATING, SHEENS
SHSB-12	🟩	STAINED, AND/OR NAPHTHALENE/HYDROCARBON-LIKE ODORS

SOURCE: BASE MAP SITE SURVEY DATA PROVIDED BY KEYSPAN ENERGY SURVEY DIVISION. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON: 1916 SITE PLAN (DWG. 2907); 1915 SURVEY BY THE TITLE GUARANTEE & TRUST CO. OF N.Y. (DWG. 2290); AND SANBORN MAPS.

NOTE: SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS. **OTHER SAMPLE LOCATIONS ALSO EXIST BEYOND THE AREA DEPICTED ON THIS MAP. THESE SAMPLE LOCATIONS HAVE BEEN INCORPORATED ONTO OTHER DRAWINGS.**

0 30
SCALE IN FEET

NO.	DATE	REVISION	INT.

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DESIGNED BY: M.B.	CHECKED BY: T.F.

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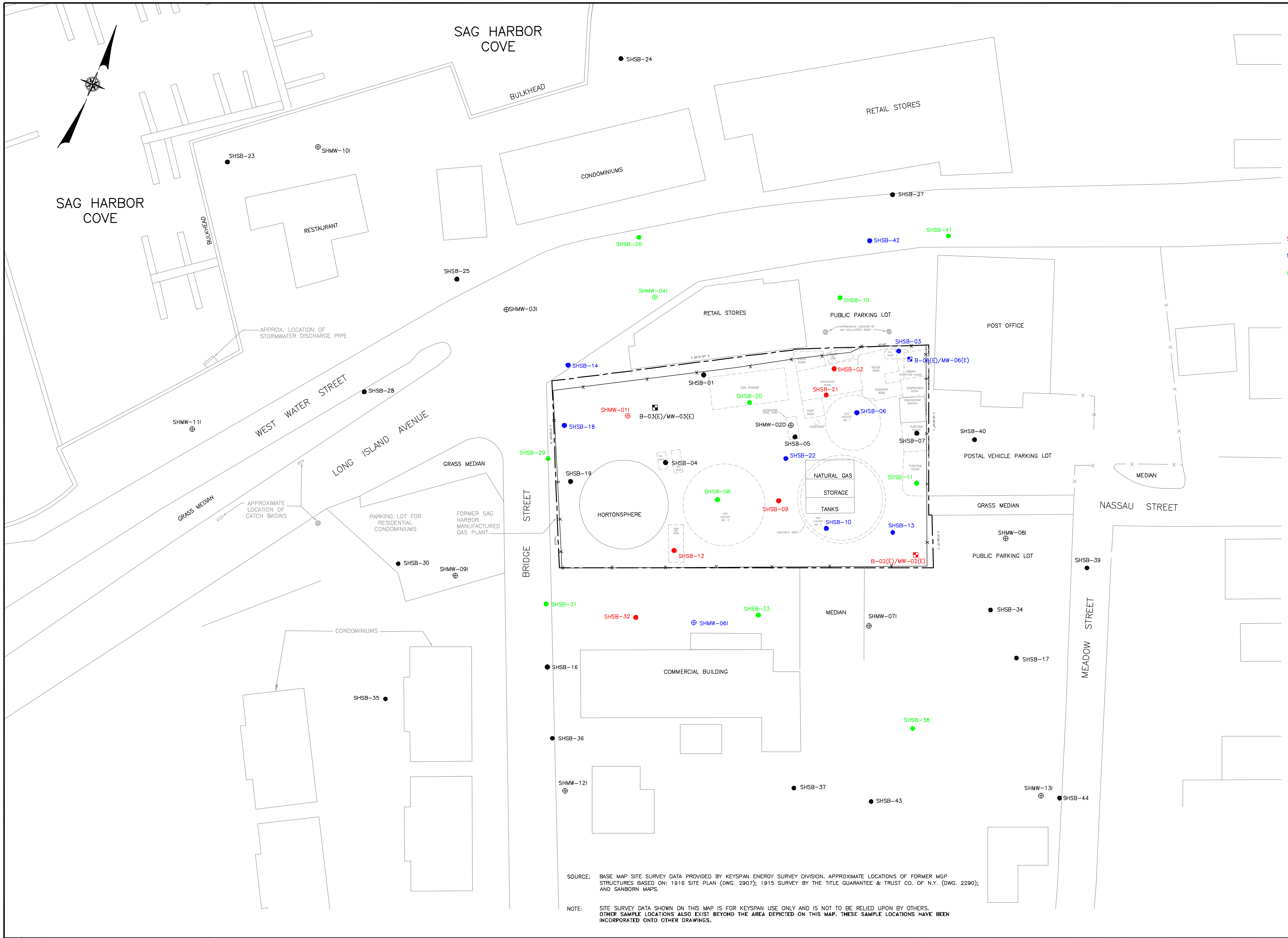
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

SAG HARBOR FORMER MGP SITE
FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

FIELD OBSERVATIONS OF SUBSURFACE
SOIL (0 TO 8 FEET) AT THE
SAG HARBOR FORMER MGP SITE

PROJECT NO.: 1620-D8
DATE: DECEMBER 2003
SCALE: 1"=30'
DRAWING NO.: **4A**



LEGEND:

SHSB-01	●	COMPLETED SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING)
SHMW-01S,I,D	⊕	COMPLETED GROUNDWATER MONITORING WELL LOCATION
B-01(E)/ MW-01(E)	▨	SOIL BORING CONVERTED TO MONITORING WELL LOCATION FROM GTI PHASE I INVESTIGATION-APRIL 1997
	☐	APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
	—x—x—x—	FENCE

FIELD OBSERVATIONS AT DEPTH INTERVALS OF 8-18 FEET

SHSB-09	🟥	TAR\NAPL SATURATED
SHSB-06	🟦	BLEBS, GLOBS, LENSES, GRAIN-COATING, SHEENS
SHSB-08	🟩	STAINED, AND/OR NAPHTHALENE/HYDROCARBON-LIKE ODORS

SOURCE: BASE MAP SITE SURVEY DATA PROVIDED BY KEYSPAN ENERGY SURVEY DIVISION. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON: 1916 SITE PLAN (DWG. 2907); 1915 SURVEY BY THE TITLE GUARANTEE & TRUST CO. OF N.Y. (DWG. 2290); AND SANBORN MAPS.

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NO.	DATE	REVISION	INT.

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SAG HARBOR FORMER MGP SITE
FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

FIELD OBSERVATIONS OF SUBSURFACE SOIL (8 TO 18 FEET) AT THE SAG HARBOR FORMER MGP SITE

PROJECT NO.: 1620-D8
DATE: DECEMBER 2003
SCALE: 1"=30'
DRAWING NO. **4B**

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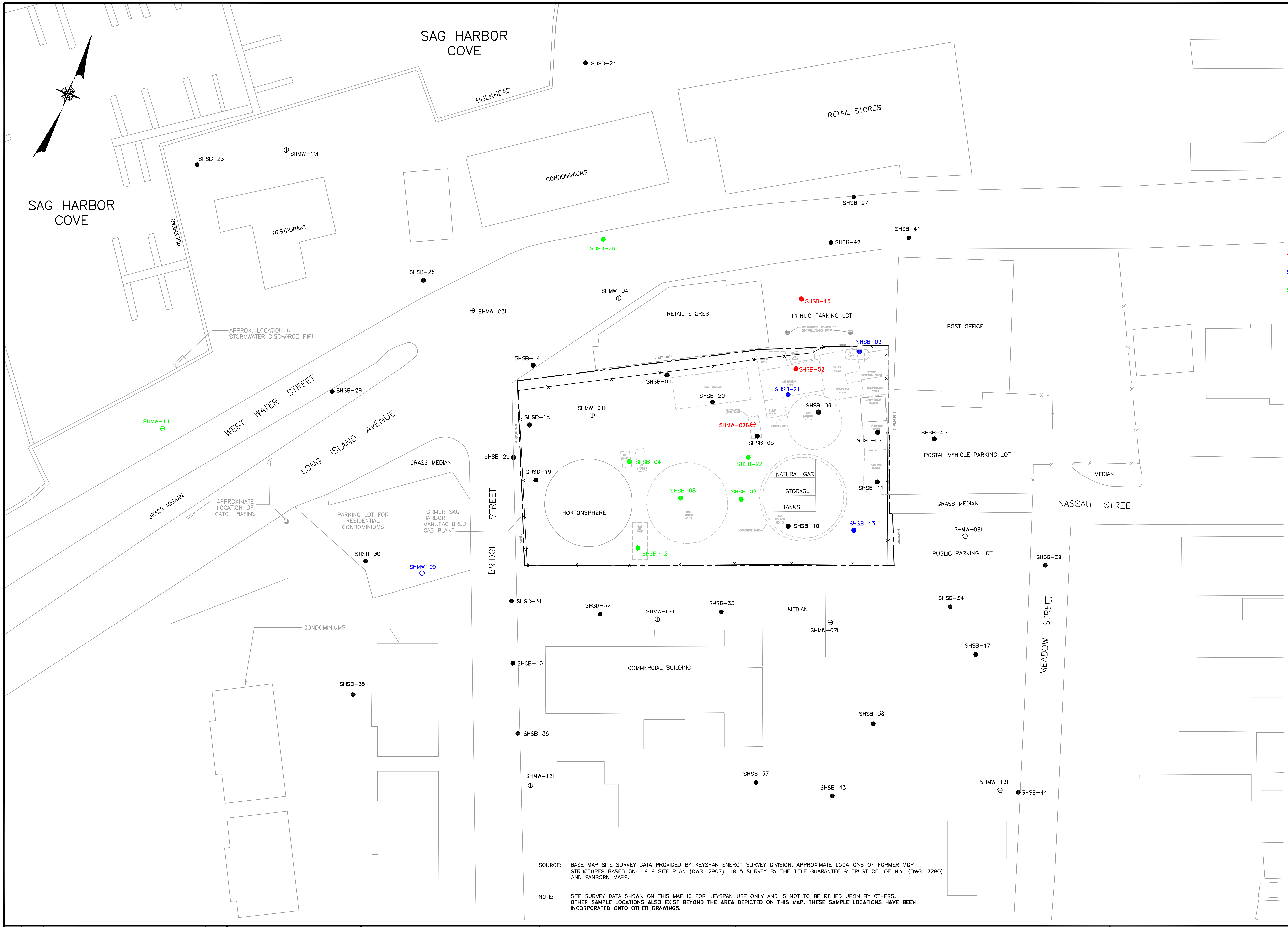

LEGEND:

SHSB-01 ● COMPLETED SUBSURFACE SOIL SAMPLING LOCATION (CONTINUOUS SAMPLING)

SHMW-01I,D ⊕ COMPLETED GROUNDWATER MONITORING WELL LOCATION

▭ APPROXIMATE LOCATION OF FORMER MGP STRUCTURE

—x—x—x— FENCE

FIELD OBSERVATIONS AT DEPTHS GREATER THAN 18 FEET

SHSB-02 🟥 TAR\NAPL SATURATED

SHSB-03 🟦 BLEBS, GLOBS, LENSES, GRAIN-COATING, SHEENS

SHSB-04 🟩 STAINED, AND/OR NAPHTHALENE/HYDROCARBON-LIKE ODORS

SOURCE: BASE MAP SITE SURVEY DATA PROVIDED BY KEYSPAN ENERGY SURVEY DIVISION. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON: 1916 SITE PLAN (DWG. 2907); 1915 SURVEY BY THE TITLE GUARANTEE & TRUST CO. OF N.Y. (DWG. 2290); AND SANBORN MAPS.

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NO.	DATE	REVISION	INT.

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SAG HARBOR FORMER MGP SITE
FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

FIELD OBSERVATIONS OF SUBSURFACE SOIL (> 18 FEET) AT THE SAG HARBOR FORMER MGP SITE

PROJECT NO.: 1620-D8
DATE: DECEMBER 2003
SCALE: 1"=30'
DRAWING NO.: 4C

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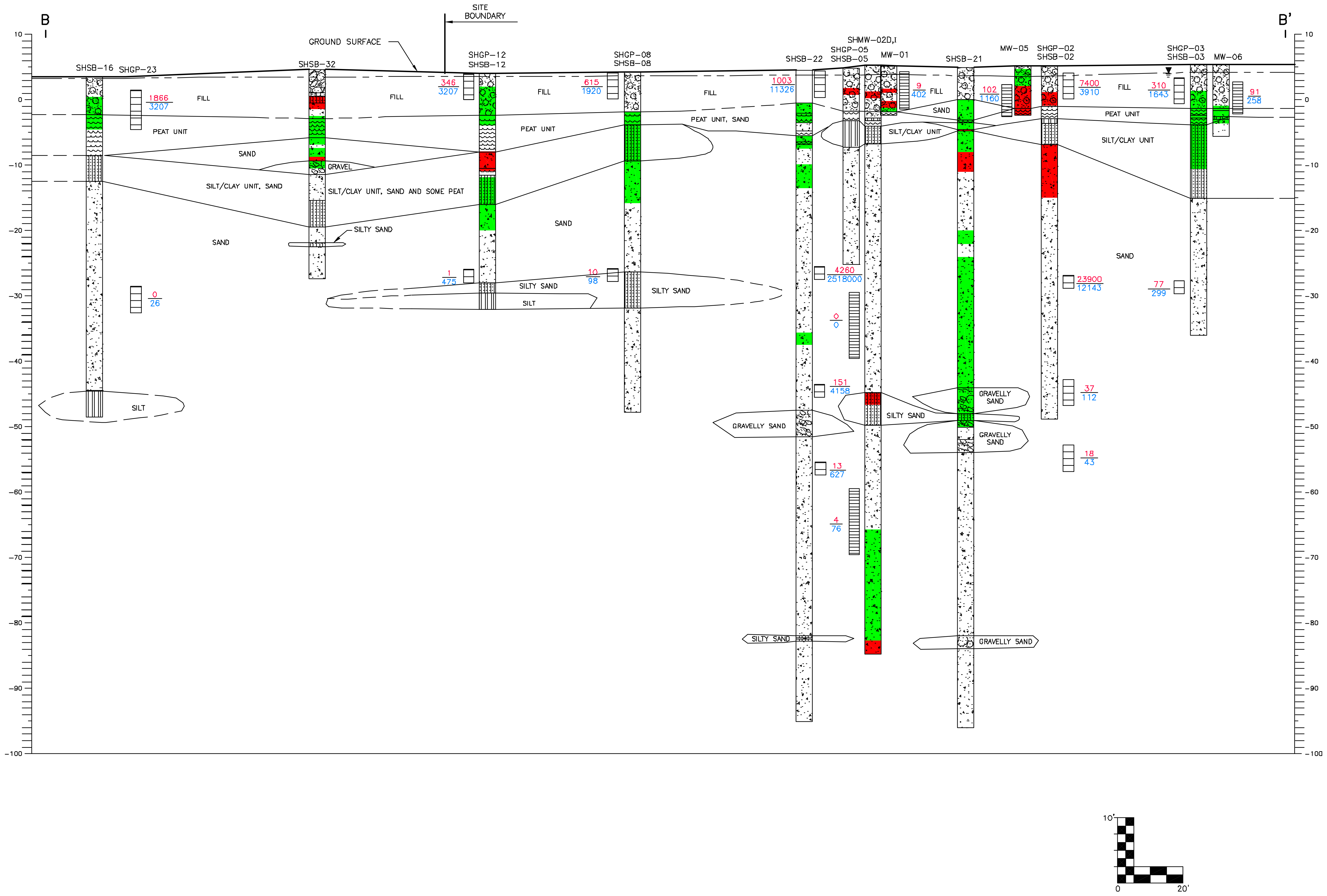
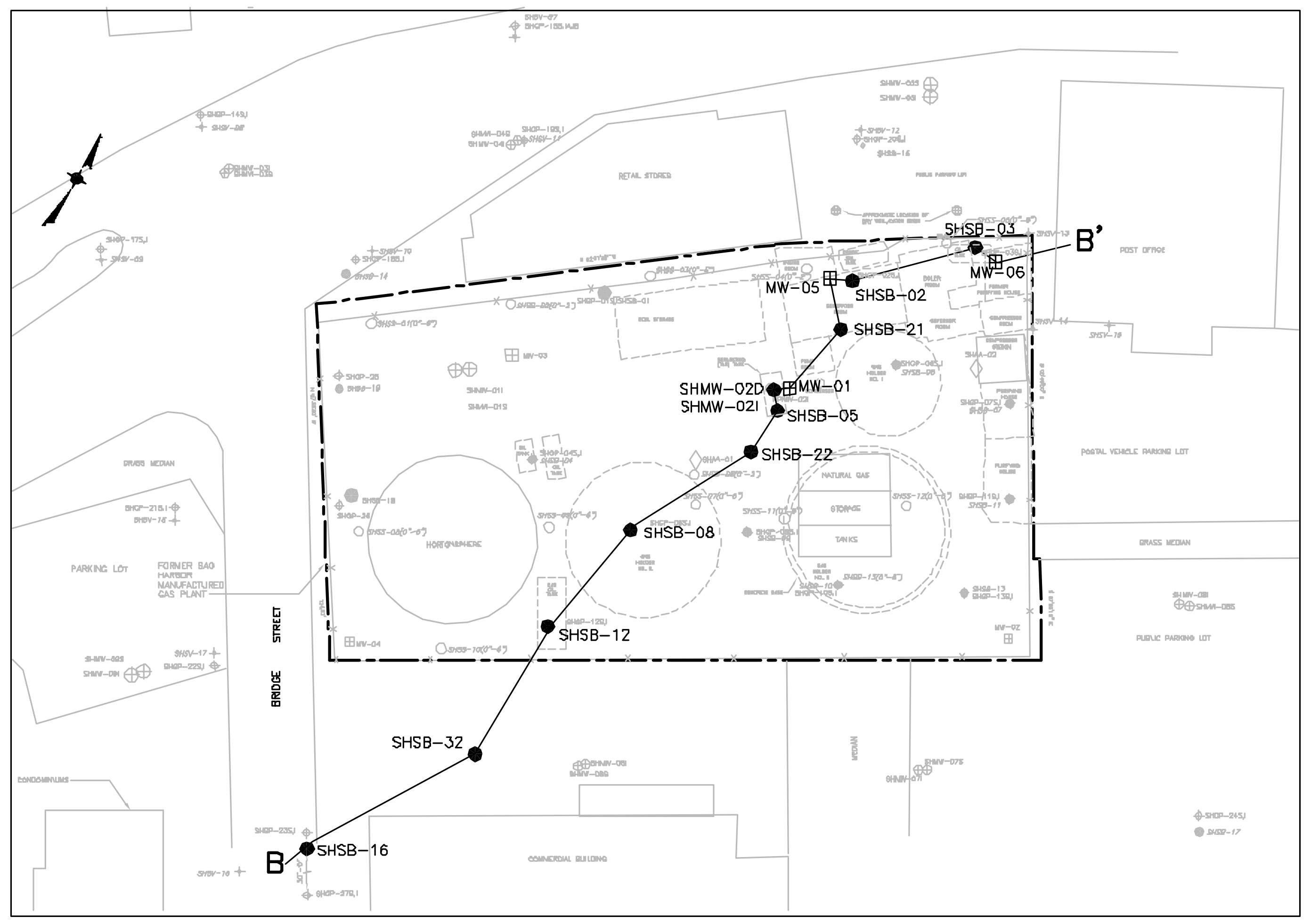


LEGEND

▨	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
☐	MATERIAL NOT LOGGED
≋	PEAT
🟥	NAPL/TAR SATURATED
🟦	BLEBS, GLOBS, LENSES, GRAIN-COATING, SHEENS
🟩	STAINING, AND/OR NAPHTHALENE/HYDROCARBON-LIKE ODORS
🟪	SOLID TAR
153 2106	TOTAL BTEX (ug/L) TOTAL PAH (ug/L)
▥	SOIL BORING
▤	WELL SCREEN FOR MONITORING WELL
☐	SAMPLING INTERVAL FOR GROUNDWATER PROBE
———	GROUND SURFACE
— — —	STRATAGRAPHIC CONTACT, DASHED WHERE INFERRED
–·–▼	ELEVATION OF WATER TABLE GIVEN IN FEET ABOVE MEAN SEA LEVEL



KEY MAP
SHOWING CROSS-SECTION LINES
SCALE:1"=50'

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SAG HARBOR FORMER MGP SITE
FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

FIELD OBSERVATIONS OF SUBSURFACE SOIL DEPICTED VERTICALLY IN GEOLOGIC CROSS-SECTION B-B'

PROJECT NO.: 1620-D8
DATE: DECEMBER 2003
SCALE: AS SHOWN
DRAWING NO.: **4D**

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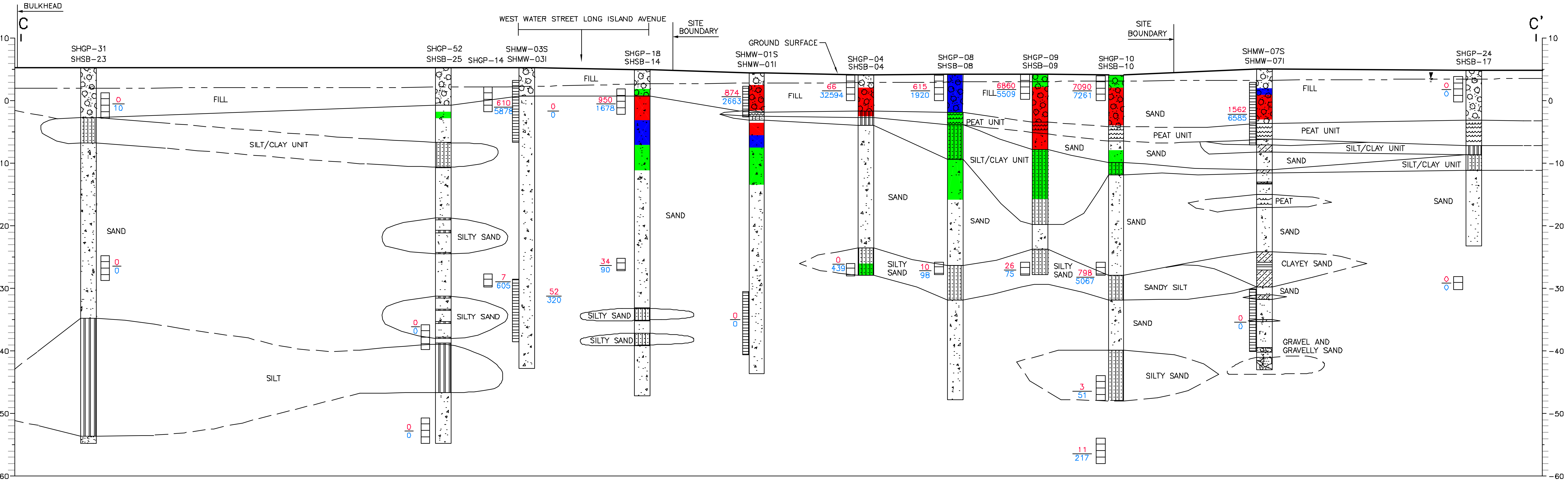
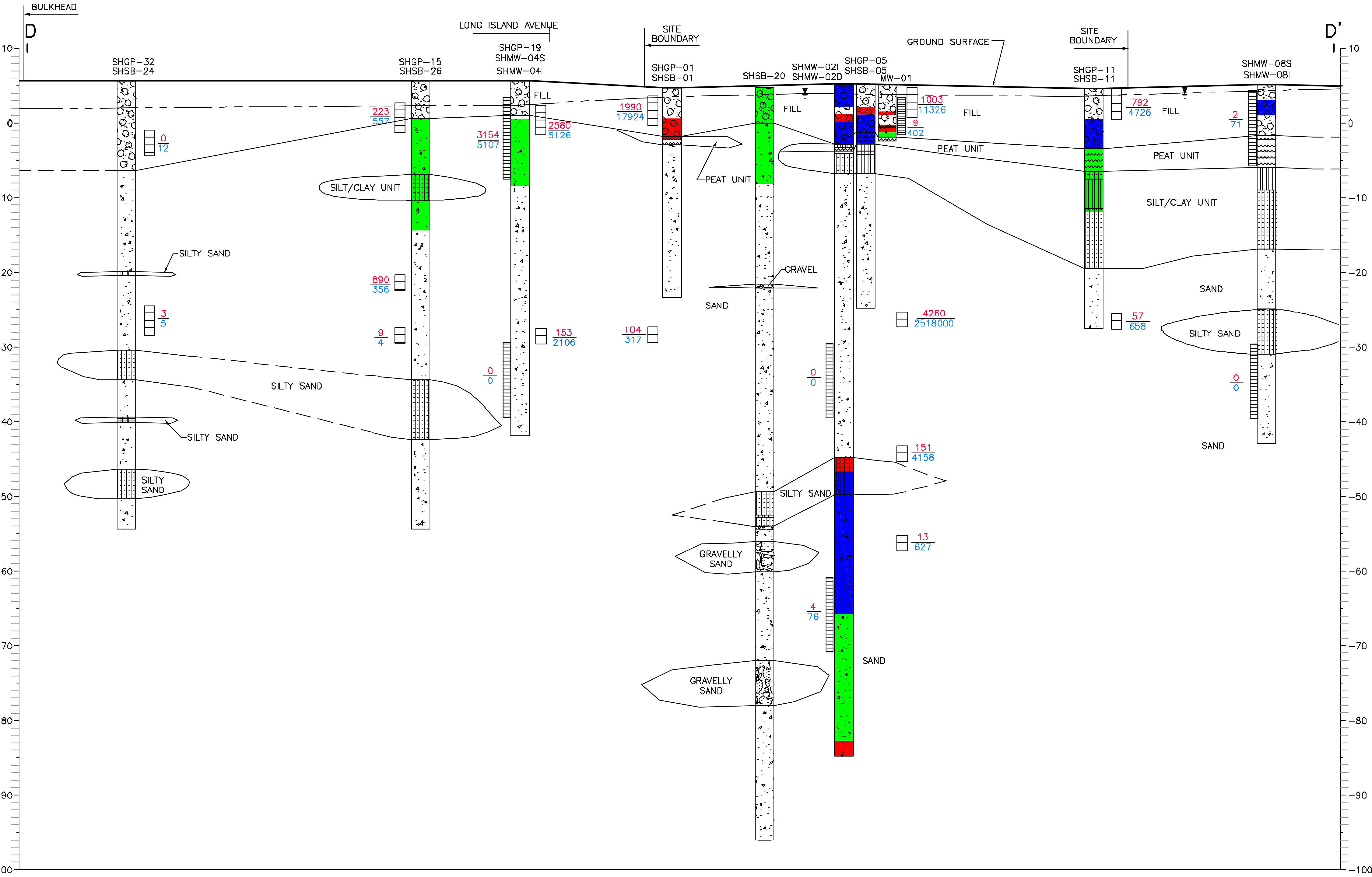
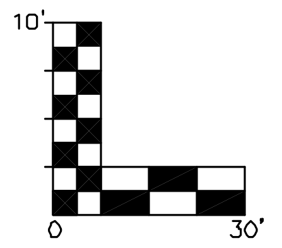


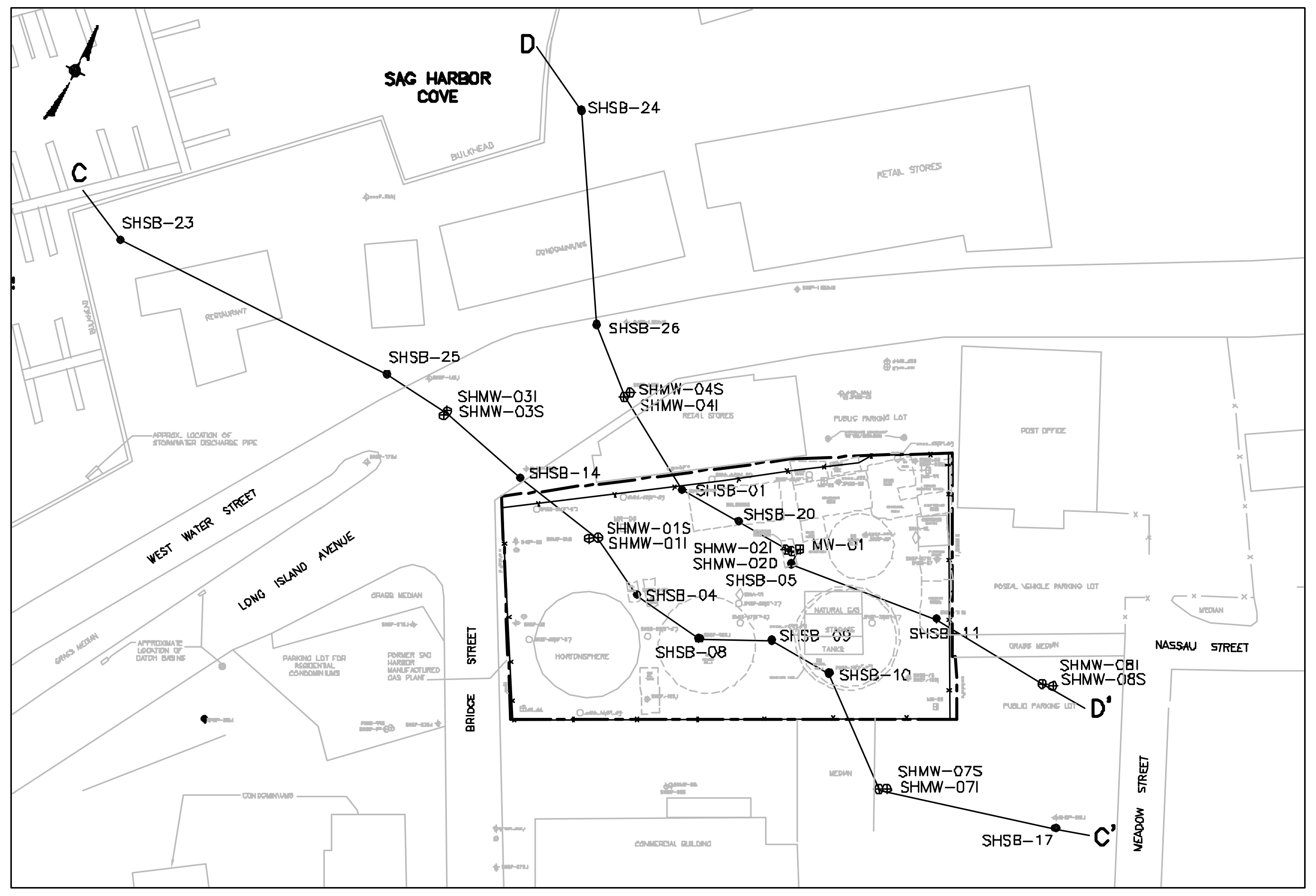


LEGEND

▨	FILL AND/OR TOPSOIL	▥	SOIL BORING
▨	FINE, MED. TO COARSE SANDS TO FINE, MED. TO COARSE SANDS WITH GRAVEL	▯	WELL SCREEN FOR MONITORING WELL
▥	SILT TO CLAY RICH SILT	▯	SAMPLING INTERVAL FOR GROUNDWATER PROBE
▦	SILTY SAND TO SILT WITH SAND	──	GROUND SURFACE
▨	CLAY	─ ─	STRATAGRAPHIC CONTACT, DASHED WHERE INFERRED
▨	CLAY WITH SAND	─ ▼ ─	ELEVATION OF WATER TABLE GIVEN IN FEET ABOVE MEAN SEA LEVEL
▨	GRAVEL, GRAVEL WITH SAND	🟥	NAPL/TAR SATURATED
▤	PEAT	🟦	BLEBS, GLOBS, LENSES, GRAIN-COATING, SHEENS
☐	MATERIAL NOT LOGGED	🟩	STAINING, AND/OR NAPHTHALENE/HYDROCARBON-LIKE ODORS
		🟪	SOLID TAR

153/2106 TOTAL BTEX (ug/L) / TOTAL PAH (ug/L)





KEY MAP
SHOWING CROSS-SECTION LINES

SCALE:1"=80'

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SAG HARBOR FORMER MGP SITE
FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

FIELD OBSERVATIONS OF SUBSURFACE SOIL DEPICTED VERTICALLY IN GEOLOGIC CROSS-SECTIONS C-C' AND D-D'

PROJECT NO.: 1620-D8
DATE: DECEMBER 2003
SCALE: AS SHOWN
DRAWING NO.: 4E

\\1620\SAG HARBOR\SH-02\1620-SH7.dwg, Layout1, 12/29/03 11:49:58 AM, ACamano

SHSS-18(0-2")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	1.3
BARIUM	8.8
CADMIUM	ND
CHROMIUM	3.1
LEAD	14.2
MERCURY	0.020
SELENIUM	ND
SILVER	ND
TOTAL CYANIDE	ND

SHSS-01(0-6")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	3.3
BARIUM	40.5
CADMIUM	0.6
CHROMIUM	9.6
LEAD	238
MERCURY	0.16
SELENIUM	0.67
SILVER	1.4
TOTAL CYANIDE	0.46

SHSS-02(0-2")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	9.3
BARIUM	70.7
CADMIUM	1.1
CHROMIUM	9.3
LEAD	415
MERCURY	0.48
SELENIUM	0.96
SILVER	1
TOTAL CYANIDE	0.58

SHSS-03(0-6")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	9.4
BARIUM	153
CADMIUM	1.8
CHROMIUM	9.5
LEAD	690
MERCURY	0.79
SELENIUM	1.6
SILVER	0.88
TOTAL CYANIDE	0.85

SHSS-04(0-2")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	9.6
BARIUM	95.4
CADMIUM	1.6
CHROMIUM	11.2
LEAD	306
MERCURY	2.3
SELENIUM	<0.45
SILVER	0.77
TOTAL CYANIDE	0.54

SHSS-05(0-6")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	<0.34
BARIUM	7.9
CADMIUM	0.1
CHROMIUM	3.1
LEAD	4
MERCURY	<0.17
SELENIUM	<0.34
SILVER	0.22
TOTAL CYANIDE	<0.14

SHSS-06(0-2")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	4.3
BARIUM	66.2
CADMIUM	3.5
CHROMIUM	14.9
LEAD	1180
MERCURY	0.48
SELENIUM	1.3
SILVER	0.62
TOTAL CYANIDE	2

SHSS-15(0-2")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	5.9
BARIUM	24.0
CADMIUM	ND
CHROMIUM	8.5
LEAD	12.9
MERCURY	0.037
SELENIUM	0.56
SILVER	ND
TOTAL CYANIDE	0.28

SHSS-14(0-2")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	2.5
BARIUM	37.8
CADMIUM	0.065
CHROMIUM	8.2
LEAD	47.1
MERCURY	0.03
SELENIUM	ND
SILVER	ND
TOTAL CYANIDE	ND

SHSS-07(0-6")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	6.3
BARIUM	675
CADMIUM	7.2
CHROMIUM	62.3
LEAD	3390
MERCURY	0.32
SELENIUM	2.6
SILVER	1.4
TOTAL CYANIDE	12.6

SHSS-08(0-6")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	<0.45
BARIUM	11.5
CADMIUM	0.074
CHROMIUM	1.9
LEAD	50.3
MERCURY	<0.19
SELENIUM	<0.45
SILVER	<0.22
TOTAL CYANIDE	<0.14

SHSS-09(0-6")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	1.8
BARIUM	31.7
CADMIUM	0.39
CHROMIUM	6.2
LEAD	108
MERCURY	0.13
SELENIUM	0.48
SILVER	0.24
TOTAL CYANIDE	0.87

SHSS-10(0-6")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	9.8
BARIUM	160
CADMIUM	1.3
CHROMIUM	10.4
LEAD	754
MERCURY	0.31
SELENIUM	2.1
SILVER	0.7
TOTAL CYANIDE	7.9

SHSS-11(0-6")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	9.7
BARIUM	51.6
CADMIUM	0.67
CHROMIUM	10
LEAD	469
MERCURY	0.7
SELENIUM	1.1
SILVER	0.65
TOTAL CYANIDE	0.89

SHSS-12(0-6")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	3.8
BARIUM	84.9
CADMIUM	0.55
CHROMIUM	4.7
LEAD	240
MERCURY	6.3
SELENIUM	0.93
SILVER	0.49
TOTAL CYANIDE	0.55

SHSS-13(0-6")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	3.3
BARIUM	36.5
CADMIUM	0.8
CHROMIUM	14.2
LEAD	324
MERCURY	0.61
SELENIUM	<0.4
SILVER	0.67
TOTAL CYANIDE	0.45

SHSS-16(0-2")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	2.2
BARIUM	27.1
CADMIUM	ND
CHROMIUM	4.8
LEAD	63.9
MERCURY	0.061
SELENIUM	0.66
SILVER	ND
TOTAL CYANIDE	0.25

SHSS-17(0-2")

CONSTITUENT	CONCENTR. (mg/kg)
ARSENIC	27.1
BARIUM	32.3
CADMIUM	0.13
CHROMIUM	19.7
LEAD	101
MERCURY	0.12
SELENIUM	0.67
SILVER	ND
TOTAL CYANIDE	0.47

LEGEND:

SHSS-01 ○ (0-6") 106.28	SURFACE SOIL SAMPLING LOCATION INDICATING SAMPLE DEPTH IN INCHES BELOW GROUND SURFACE, AND TOTAL PAH CONCENTRATIONS IN mg/kg.
⬚	APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
☐	LOCATION OF EXISTING STRUCTURE
— - — - —	CURRENT SITE BOUNDARY
—x—x—x—	FENCE

TOTAL PAH CONCENTRATIONS

☐	≤ 10 mg/kg
🟨	> 10 mg/kg
🟥	> 100 mg/kg
🟩	> 250 mg/kg
🟧	> 500 mg/kg

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NO.	DATE	REVISION	INT.

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SAG HARBOR FORMER MGP SITE
FINAL REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

CHEMICAL DATA SUMMARY FOR
SURFACE SOIL SAMPLES

PROJECT NO. 1620-D8
DATE: DECEMBER 2003
SCALE: 1"=50'
DRAWING NO. **4F**

5.0 CONCLUSIONS

This section presents the conclusions with regard to the nature and extent of chemical constituents and other MGP residuals identified in on-site and off-site areas based on the results of the supplemental field program. Where appropriate, data from the initial field program, as well as historical data has been used in conjunction with data from the supplemental field program to develop the conclusions presented in this section. This section also presents the conclusions of the private well and basement survey, Qualitative Human Exposure Assessment (QHEA) and the Fish and Wildlife Resources Impact Analysis (FWRIA). **Appendix E** presents the detailed findings of the QHEA, FWRIA, and the private well and basement survey.

5.1 On-Site

Remedial Investigation

Surface Soil

- On-site surface soil samples were not collected in support of the supplemental field program. However, based on the findings of the initial field program, total PAH concentrations ranged from less than 1 mg/kg to 951 mg/kg in the 13 surface soil samples collected from the site. Metals were generally not detected above typical background concentrations for soil in the eastern United States, with the exception of mercury (which was detected above the typical background concentrations in 11 of the 13 samples) and lead (which was detected at 3,390 mg/kg in sample SHSS-07). Total cyanide was not detected above a concentration of 12.6 mg/kg. The entire Sag Harbor site is covered with 6 to 8 inches of crushed stone, limiting direct contact with surface soil.

Subsurface Soil

- Areas of subsurface soil, primarily in close proximity to the former MGP structures located in the eastern and central portions of the site, exhibited evidence of NAPL. Evidence of NAPL did not extend beyond a depth of 12 feet bgs at the majority of the completed soil borings and probes, indicating that the underlying peat/silt/clay unit limits the vertical migration of NAPL. However, in a localized area in the vicinity of the former Tar Separating Tank, where the peat/silt/clay unit appears to be relatively thin or absent, evidence of NAPL was found to extend to a depth of 90 feet bgs.

- BTEX and PAH concentrations in subsurface soil appear to decrease rapidly below the peat/silt/clay unit, even in areas exhibiting evidence of NAPL.

- Based on the BTEX/PAH soil data, evidence of NAPL in recovered soil samples, and the direction of groundwater flow, source areas of BTEX and PAH compounds appear to exist at the following former MGP structure locations:

  - Tar Separating Tank
  - Generator Room/Crude Oil Tank
  - Gas Holder No. 2
  - Gas Holder No. 3
  - Gas Oil Tank
  - Oil Tanks

- Metals detected in subsurface soil samples were found to be generally within or below typical background concentration ranges.

Groundwater

- Depth to groundwater at the site ranges from approximately 0.5 to 1.6 feet bgs and is tidally influenced. On-site groundwater predominantly flows in a northwest direction towards Sag Harbor Cove. However, in the southern portions of the site there also appears to be groundwater flow towards the west and south. There is also an easterly component of flow within the intermediate zone in the extreme eastern portion of the site.

- Although a number of samples collected from groundwater probes exhibited evidence of NAPL, on-site monitoring wells exhibited little evidence of any measurable separate-phase NAPL. The only exceptions to this was less than 0.1-foot of LNAPL, observed during the December 18, 2000 round of water level measurements in shallow groundwater monitoring well MW-05 (located in the northeastern portion of the site) and less than 0.2-foot of DNAPL observed during the April 2002 sample round in shallow groundwater monitoring well MW-02. Note that MW-02 does not have a sump for DNAPL collection.

- The highest concentrations of BTEX and PAH compounds were generally detected in shallow groundwater (i.e., above the peat/silt/clay unit) in the eastern and central portions of the site. However, BTEX and PAHs, as well as NAPL, have migrated to deeper intervals in the northeastern portion of the site below the peat/silt/clay unit. This is apparently due to the absence and/or thin nature of the peat unit in the eastern portions of the site. However, groundwater samples collected from these locations (i.e., SHGP-02 and SHGP-05) indicate that BTEX and PAH concentrations rapidly decrease at depths greater than 34 feet bgs in these areas of the site.

- Analysis of groundwater collected from on-site monitoring wells indicates metal concentrations to be generally within concentration ranges typical of ambient groundwater quality. Total cyanide concentrations were generally below the CRDL of 20 ug/l.

Qualitative Human Exposure Assessment

- Under current and future site use conditions, the potentially exposed populations (i.e., potential receptors) are those that might come into contact with the site-related chemicals of potential concern (COPCs). A summary of the potential exposure pathways, by receptor and medium, is presented in **Table 2-2** of **Appendix E** (see **Appendix E** for the complete qualitative human exposure assessment). **Table 2-3** (**Appendix E**) provides context, in qualitative terms, of the potential for the exposures discussed above to actually occur. For example, the potential for on-site trespasser exposure to site-related chemicals in surface soil at the site is considered minimal because access to the site is restricted by a gated fence that is maintained closed and locked.

Current Use

- Current human populations considered in the exposure assessment include on-site trespassers and adult on-site KeySpan workers. On-site trespassers were included in the exposure assessment since the possibility exists that these individuals could gain access to the site via breaches in the fencing that surrounds it. On-site exposure for trespassers is limited to surface soil via the ingestion (oral), dermal, and inhalation routes. Current on-site KeySpan workers are those individuals currently engaged in activities required for the function and maintenance of those portions of the site devoted to KeySpan operations (i.e., compressor station maintenance). These individuals may spend time both outdoors and indoors and, consequently, may potentially be exposed to chemicals in surface soil and subsurface soil via ingestion, dermal contact and inhalation during outdoor activities and also to COPCs in indoor air (via inhalation during indoor activities). Potential exposure to surface soil is unlikely under current site conditions given that the site is covered with crushed stone.

Future Use

- Future human populations considered in this exposure assessment include construction workers, commercial workers, and adult and child visitors to commercial establishments, if the site were converted to commercial use. The construction worker is considered since virtually any site redevelopment would involve construction activity in some form. Potential on-site exposure media for the construction worker include surface and subsurface soil (via ingestion and dermal contact), inhalation of soil particulates, dermal contact with groundwater, and volatilization of chemicals from soil and groundwater into ambient air during construction trenching activities.

- The possibility exists that the site may be used in the future for commercial purposes. Thus, absent remedial measures, potential exposures for adult commercial workers and adult and child visitors to future commercial establishments may exist. These individuals may be exposed to chemicals in indoor air that have volatilized out of the groundwater and subsurface soil underneath the commercial structure. It is expected that future on-site land use may be deed restricted to prevent residential development; however, because deed restrictions are not yet in place, a future on-site residential scenario is included here. Potential on-site exposure media for these future on-site residents includes surface and subsurface soil via ingestion and dermal contact, groundwater via dermal contact, ingestion and inhalation of volatiles while showering if an on-site well was installed for domestic use, and ambient and indoor air. It is likely; however, that if the site were converted to residential use, part of the redevelopment plans would include connection to the municipal water supply. Additionally, available data suggests that this would not likely be an exposure pathway of concern.

Fish and Wildlife Resources Impact Analysis

- Following Appendix 1C Decision Key in the NYSDEC's FWRIA guidance, a FWRIA was deemed required. Although this analysis indicated that several COPECs were detected at concentrations greater than the toxicological benchmark values, which may suggest a risk of impact to wildlife, the potential for an impact from MGP-related COPECs is minimal for several reasons. The low exposure frequency, low chemical concentrations (especially within six inches of the ground surface), indirect mechanism of exposure, and low duration of exposure suggests that the risk to wildlife is low. The site has minimal habitat areas in the form of "weedy" patches that would not support a wildlife population. Because only transient species and a few individual animals would use this area, the frequency and duration of exposure is limited. The future use of the site is expected to be of a type that will not provide a significant wildlife habitat. Thus, the observed MGP-related chemicals do not pose a current impact, nor is any expected in the future.

5.2 Off-Site

Remedial Investigation

Surface Soil

- Total BTEX concentrations in the five surface soil samples ranged from non-detect to a maximum of 0.004 mg/kg, with xylene being the only BTEX compound detected above method detection limits. SHSS-17 (0-2") exhibited the highest concentration of total BTEX, which is likely attributable to storm water runoff from adjacent roadways. This sample was collected adjacent to the intersection of Spring Street and Bridge Street, approximately 700 feet south of the former MGP site.

- Total PAH concentrations ranged from non-detect up to a maximum of 3.271 mg/kg in samples collected from the 0 to 2-inch interval below the soil surface in the five off-site surface soil sample locations. The 0 to 6-inch interval was also analyzed for PAHs from the sample collected immediately adjacent to the southwestern corner of the site (SHSS-14). This sample exhibited a concentration of 24.04 mg/kg of total PAHs. It is worthy to note that PAHs in the 0 to 2-inch interval below the soil surface in this location were non-detect. Since there is an extremely shallow depth to groundwater in this area, this indicates that the source of the PAHs at this location could be associated with groundwater conditions as opposed to storm water runoff from the site. **Table 4-4** summarizes the range of PAH concentrations associated with surface soil samples collected from off-site locations along with the location of the maximum detected concentration.

- As indicated above, the majority of the highest concentrations of metals were found in SHSS-17, which was located adjacent to the intersection of Spring Street and Bridge Street, approximately 700 feet south of the former MGP site. However, all results were within or below background concentrations for soil in the eastern United States, as presented on **Table 4-1**.

Subsurface Soil

- The highest off-site BTEX and PAH concentrations were observed between 2 and 10 feet bgs (i.e., above the peat/silt/clay unit), primarily to the south of the site. Southern off-site migration of BTEX appears to be attributable to a southern component of groundwater flow in the extreme southeastern portion of the site, as well as the downward gradient that appears to exist along the top of the peat layer that extends to the south of the site.

- Off-site migration of BTEX and PAHs in subsurface soil above the peat/silt/clay unit is also occurring to a lesser degree to the north, northwest and west.

- Relatively low concentrations of total BTEX exist in off-site locations at deeper intervals (i.e., concentrations do not exceed 0.186 mg/kg in any sample analyzed from a depth of 18 feet bgs or greater). However, migration of PAHs to the north, off the northeastern portion of the site, appears to have occurred at deeper intervals. This appears to be attributable to the relative absence or thin nature of the peat layer in the eastern portion of the former MGP site, and the northern component of groundwater flow from this portion of the site.

- BTEX and PAH concentrations generally tend to rapidly decrease with depth at the Sag Harbor site, with the exception of PAHs to the north of the northeastern portion of the site.

- RCRA metals were generally found to be within or below typical background concentrations for the eastern United States. Total cyanide was generally either not found at levels above method detection limits or was found at relatively low concentrations.

Groundwater

- Although evidence of NAPL was observed in several off-site subsurface soil samples, off-site monitoring wells did not exhibit any measurable separate-phase NAPL. This indicates that while NAPL is present in subsurface soil, it appears to be currently in a relatively immobile residual saturation state, trapped within subsurface soil. As a result, additional off-site migration of NAPL is unlikely. However, intrusive groundwork or other activities, which create heavy ground vibrations could potentially mobilize DNAPLs in the subsurface.

- Both the shallow groundwater (i.e., above the peat/silt/clay unit) and intermediate groundwater zones (i.e., below the peat/silt/clay unit) flow in multiple directions off-site, with the predominant flow being to the northwest.

- Based on the analytical data obtained in support of the remedial investigations, BTEX and PAHs have been shown to extend a limited distance beyond the site boundaries, with off-site migration primarily occurring to the northwest and west, towards Sag Harbor Cove. The majority of off-site migration of BTEX and PAHs appears to be occurring in the shallow groundwater zone. This is likely due to the semi-confining nature of the peat/silt/clay unit as well as due to the upward or groundwater discharging conditions observed in the intermediate and deep groundwater zones.

- Groundwater containing relatively low levels of BTEX and PAHs appear to be discharging to a relatively narrow zone of Sag Harbor Cove. However, surface water and pore water sampling conducted in the suspected discharge area found only trace concentrations of total BTEX in surface water (i.e., not exceeding 1 ug/l) and only trace concentrations of total PAHs in pore water (i.e., not exceeding 4 ug/l).

- Metal concentrations in groundwater samples collected from off-site monitoring wells are generally within typical background levels defined for the eastern United States. The majority of groundwater samples exhibited total cyanide concentrations below the CRDL of 20 ug/l, with a maximum total cyanide concentration of 103 ug/l observed at SHMW-07S, located approximately 40 feet south of the site. Free cyanide was not found above the CRDL of 20 ug/l.

Groundwater Seep

- Volatile organic compounds (VOCs) were not detected above method detection limits with the exception of acetone, which was detected at a relatively low concentration of 7 ug/l. This compound is a common laboratory contaminant.

- Semivolatile organic compounds (SVOCs) were not detected above method detection limits.

Sag Harbor Cove (Sediment, Pore Water and Surface Water Sampling)

- Although sediment samples were found to contain total PAHs at concentrations up to 46.76 mg/kg, this may be attributable to the extensive use of the cove by motorized watercraft and/or from storm water runoff from surrounding streets and parking lots discharged to this surface water body. Two sediment samples collected from Sag Harbor Cove to assess background conditions exhibited total PAH concentrations of 2.22 mg/kg and 4.04 mg/kg. Furthermore, surface water and pore water samples collected from the cove exhibited only trace concentrations of BTEX and PAH compounds. In surface water samples, total BTEX concentrations did not exceed 1 ug/l, and PAHs were not detected at concentrations above method detection limits. In pore water samples, BTEX compounds were not detected at concentrations above method detection limits, and total PAHs did not exceed 4 ug/l.

Private Water Supply Wells

- Based on the findings of a private water supply well survey, one inactive and two active private water supply wells were identified within the study area. Tap water samples collected from the two active wells showed no detectable concentrations of SVOCs. VOCs, RCRA metals and cyanide were also not detected with the exception of chloroform, barium and lead, which were all detected at concentrations that achieve New York State Department of Health (NYSDOH) standards/action levels. Additional information concerning the private well survey and sampling activities is provided below (Qualitative Human Exposure Assessment Findings).

Indoor Air

- Indoor air sampling for volatile organic compounds and naphthalene was conducted within several structures located adjacent to the site, where access was granted by property owners/occupants. Results of this sampling indicate that the majority of volatile organic compounds were reported as non-detect, and the compounds that were detected were either detected within the range of background concentrations as reported by the NYSDOH, were orders of magnitude below occupational standards, and/or were generally those not typically associated with MGP impacts. Additional information concerning the indoor air sampling activities is provided below (Qualitative Human Exposure Assessment Findings).

Qualitative Human Exposure Assessment

- Under current and future site use conditions, the potentially exposed populations (i.e., potential receptors) are those that might come into contact with the COPCs. A summary of the potential exposure pathways, by population and medium, is presented in **Table 2-2** of **Appendix E** (see **Appendix E** for the complete qualitative exposure assessment). **Table 2-3** (**Appendix E**) provides context, in qualitative terms, of the potential for the exposures discussed above to actually occur.

Current Scenarios

- Current off-site human populations considered in the exposure assessment include adult commercial workers; adult and child visitors to those commercial establishments; adult and child residents of the Harbor Close Condominium complex located to the southwest of the site; and commercial workers, visitors and adult and child residents of properties located to the north of the site. Indoor air exposure to chemicals volatilizing from groundwater and subsurface soil underneath structures was assumed to occur for these receptor populations. Potential exposure to chemicals in surface soil may be possible for these off-site residents. Additionally, potential inhalation exposure to wind-borne particulates from excavations is possible for off-site human populations; however, it is anticipated that this potential exposure would be short-term and if warranted, controlling measures would be used to further reduce potential exposure. Inhalation of site-related wind-borne particulates also is possible for these off-site populations; however, the potential for this exposure is considered limited given that the site is currently covered with bluestone, thereby reducing the potential for exposure. Additionally, given the high water table at Sag Harbor, direct contact with groundwater as well as subsurface soil by off-site residents is possible if they were to access the subsurface in their yards.

Future Scenarios

- Future human off-site populations considered in this exposure assessment include construction workers and utility workers. Off-site construction worker exposure to areas surrounding the site is possible in the event of future off-site redevelopment. Chemical exposures for nearby, off-site utility workers could be expected because of the presence of subsurface utility lines in areas adjacent to the site. Like the on-site construction worker, potential exposure pathways for off-site construction and utility workers include ingestion of and dermal contact with surface and subsurface soil, inhalation of soil particulates, dermal contact with groundwater, and volatilization of chemicals from soil and groundwater into ambient air during construction trenching activities.

- As mentioned above, persons residing or working in the vicinity of the site may be exposed to chemicals originating from subsurface soil or groundwater via inhalation of vapors in indoor air. Indoor air sampling has been performed at several properties in the vicinity of the site. Results of this sampling indicate that while the majority of volatile organic compounds were reported as non-detect, the compounds that were detected were either detected within the range of background concentrations as reported by the NYSDOH, are orders of magnitude below occupational standards, and/or are generally those not typically associated with MGP impacts.

- A basement survey was performed of properties in the vicinity of the site, as agreed upon by KeySpan and NYSDEC in April 2002. Results of the 39 questionnaires completed thus far indicate that an odor of potential concern, i.e., an odor that is characterized as “gasoline”, is present at one property when the basement is wet. Results of indoor air sampling conducted at this property when the basement was wet indicated the presence of four volatile organic compounds, none of which is associated with MGP impacts. In summary, results of the basement survey indicate that, at a very small number of properties, the potential for indoor air exposure exists. The owners of these properties were contacted and appropriate courses of action were taken. This survey information, coupled with results of the indoor air sampling performed to date, indicates that potential exposures to site-related chemicals via inhalation of indoor air in the vicinity of the site are minimal. Additional details concerning the results of the basement survey may be found in **Section 2.5** of **Appendix E**.

- Three of the 39 survey respondents reported the presence of a groundwater well on their property. Sampling of two wells was performed. Results of the sampling indicated the presence of barium and lead in both wells and the presence of chloroform, a trihalomethane commonly detected in treated water, in one of the wells. All three chemicals were present at concentrations that achieve NYSDOH public water supply standards/action levels. According to the survey respondent, the groundwater well at the third property is not used. The information collected to date indicates that the potential for exposure to site-related chemicals in groundwater is minimal. Additional details concerning the results of the private well survey may be found in **Section 2.5** of **Appendix E**.

Fish and Wildlife Resources Impact Analysis

- Wildlife resources in the commercial/residential areas surrounding the site are limited due to the lack of food and cover. Also, constant human disturbance limits the population to wildlife species more tolerant of human activity. Several state-listed endangered species are located within 2-miles of the site. In addition, state and federally regulated tidal wetlands are located in the Peconic Estuary. Wetlands are considered significant natural resources. However, these wetlands are currently too distant and/or up-gradient of the site for exposure to site-related chemicals. Also, most of the COPECs are PAHs and metals. The fate and transport mechanisms of these chemicals reduce the likelihood of future migration into these areas. Thus, the potential for exposure is limited to wildlife near, or immediately downgradient from the site. Because only transient species and a few individual animals would use this area, the frequency and duration of exposure is limited. Thus, the observed MGP-related chemicals do not pose a current impact, nor is any expected in the future.

- Several COPECs in Sag Harbor Cove sediment were detected at concentrations greater than the toxicological screening benchmark values. However, only one COPEC, phenanthrene, was detected in surface water above water quality criteria. These data suggest that while some COPECs may pose a risk to the aquatic environment, the potential effects are considered to have minimal ecological significance. Furthermore, these COPECs may be also attributable to the extensive use of the cove by motorized watercraft and/or from storm water runoff from surrounding streets, and parking lots that discharge to this surface water body. Based on these results, the Peconic Estuary and Sag Harbor Cove are not currently impacted by site-related constituents.

6.0 CONCEPTUAL SUMMARY

6.1 Introduction

This section presents a conceptual model that describes the evolution of current environmental conditions at and immediately adjacent to the site. The model is based on historical site information along with the qualitative and quantitative results of the various site assessments and investigations. The model was developed to provide an integrated summary of the key processes that have resulted in the existing conditions at the site and the affected off-site areas. In brief, the model addresses potential on-site source areas along with the key fate and transport mechanisms that are responsible for the migration of MGP-related materials and chemicals and their distribution in the environment.

While details regarding site history are limited, the site was initially developed in 1859, and was reportedly used to manufacture gas from coal or rosin. The Lowe Carbureted Water Gas Process was utilized on-site from 1892 to 1930. Gas was manufactured either intermittently or continuously on the site by several successor companies. In 1929, the Long Island Lighting Company (LILCO) purchased the site and the function of the site shifted from gas manufacturing to serving as a "link" in the gas distribution system. As a result, gas production at the Sag Harbor site ceased and storage capacity at the site was greatly increased. Structures that had been used for the manufacture of gas were later dismantled and removed from the site some time in the early 1960s. In 1998, KeySpan acquired the former MGP property through a merger with LILCO.

6.2 Hydrogeologic Setting

Historical records indicate that the Sag Harbor area consisted of large tracts of marshland which have been filled in since the 1730s to allow for development (Bill Bleyer, LI History.com; Sag Harbor Express, July, 1998). As a result, the site and surrounding properties are directly underlain by fill material consisting primarily of sand and silt along with varying amounts of clay, cobbles, brick, coal, ash and wood. The fill material is between 4 and 8 feet in thickness and rests directly on a peat deposit in most locations.

The peat deposit consists of a highly organic material containing plant fibers and roots, and occurs in conjunction with a fine-grained inorganic silt/clay sediment that are collectively referred to as the peat/silt/clay unit. The peat/silt/clay unit is found throughout the majority of the site, as well as areas to the south. It has an observed thickness of 0.5 to 14 feet. It is believed that the peat/silt/clay unit is associated with areas of mud flats, tidal wash and areas of salt grass that were filled during the development of Sag Harbor, discussed above. The unit appears to be absent in off-site areas to the north and northwest and appears to be absent or relatively thin within a portion of the site centered near the former Gas Holder No. 3 and the former Tar Separating Tank. The areas where the peat/silt/clay unit was found to be absent may have been associated with sandy tidal channels separating the tidal marshes and/or shallow sandy embayments similar to the setting presently found in the undeveloped portions of Sag Harbor Cove. Similar to the tidal marsh areas, the tidal channels and shallow embayments were filled during the development of Sag Harbor.

Where present, the peat/silt/clay unit appears to act as a confining layer, limiting the vertical flow of groundwater, as well as the vertical migration of MGP-related chemical constituents. Below the peat/silt/clay unit exists the shallow sand unit which consists of fairly well sorted fine to medium grained quartz sand characteristic of highly permeable glacial sands found throughout much of the south fork of Long Island. The shallow sand unit contains a number of discontinuous fine-sand/silt lenses. Due to their discontinuous nature, the fine-sand/silt lenses do not represent an effective confining layer.

Groundwater at the site ranges in depth from approximately 0.5 to 1.6 feet below ground surface (bgs). Groundwater flow is tidally influenced within the site as well as in areas to the north and northwest. Due to tidal influences, as well as the presence of the peat/silt/clay unit, groundwater flow within the site and surrounding area is relatively complex. However, throughout the tidal cycle, the predominant direction of groundwater flow is to the northwest towards Sag Harbor Cove. In addition, groundwater appears to flow to the south and also to the west. A localized easterly component of flow also exists along the eastern property boundary.

6.3 Fate and Transport of Nonaqueous Phase Liquids

Low viscosity tar and oil that may have been discharged at 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 less than 2 feet below grade across the majority of the site. If denser than water, the NAPL would likely continue to migrate below the water table and through the fill material reaching the peat/silt/clay unit where vertical migration would likely be impeded. The NAPL would likely become trapped in the pore spaces of the peat/silt/clay unit as well as the fill material. However, due to the relatively shallow nature of the peat/silt/clay unit, the accumulation of NAPL within and above this stratum may promote lateral movement of the NAPL away from source areas. In areas where the peat/silt/clay unit is absent or relatively thin, the dense NAPL (or DNAPL) may continue to migrate vertically through the confining unit and into the underlying shallow sand unit. Vertical migration may continue until the volume required to sustain gravity-driven migration becomes inadequate either due to solubilization or the loss of mass as the result of the DNAPL being immobilized in pore spaces.

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

Upon release, NAPLs typically distribute quickly within the subsurface (P.V. Noort, et al., 1994). Therefore, given that gas production operations ceased at least 70 years ago, it can be concluded that virtually all the NAPL present in the subsurface is likely to be at residual saturation levels within subsurface soil, and therefore, relatively immobile.

The majority of on-site locations included at least one sample collected above the peat/silt/clay unit which exhibited some evidence of NAPL. However, the strongest evidence of NAPL was observed within the eastern portion of the site centered around the former Tar Separating Tank, Gas Holder No. 3 and Generator Room/Crude Oil Tank area. Soil recovered north and to a lesser extent south of these former MGP structures suggests that lateral migration of NAPL has occurred in these areas above the peat/silt/clay unit. While isolated zones of NAPL saturated soil were encountered above the peat/silt/clay unit throughout much of the site, shallow on-site monitoring wells exhibited little evidence of any measurable separate-phase NAPL. This indicates that while NAPL is present above the peat/silt/clay unit, it appears to be currently in an relatively immobile residual saturation state trapped within subsurface soil. Therefore, continued off-site migration of NAPL is unlikely beyond its current extent. However, intrusive groundwork or other activities, which create heavy ground vibrations could potentially mobilize DNAPLs in the subsurface.

Considerably fewer locations revealed the presence of NAPL below the peat/silt/clay unit. This suggests that the stratum likely behaves as a partial confining unit limiting or retarding the vertical migration of NAPL. The majority of borings exhibiting NAPL below the peat/silt/clay unit are located in the eastern portion of the site where this unit is relatively thin or possibly absent. The only off-site boring exhibiting any significant evidence of NAPL at saturated levels below the peat/silt/clay unit was SHSB-15, located directly north of the eastern portion of the site, again in an area where this stratum is relatively thin. These field observations suggest that vertical migration of NAPL may continue in areas where the peat/silt/clay is thin or absent. However, no intermediate or deep monitoring wells set below the peat/silt/clay unit exhibited measurable separate-phase NAPL, indicating that while NAPL has been observed below this stratum in subsurface soil, it appears to be currently in a relatively immobile residual saturation state.

Within the immediate vicinity of the former Tar Separating Tank located in the eastern portion of the site, NAPL-saturated soil was encountered immediately above and within a fine-sand/silt lens at approximately 50 feet bgs, suggesting that this stratum may be acting as a DNAPL trap. However, soil borings SHSB-20, SHSB-21 and SHSB-22, completed as part of the supplemental field program in order to further define the presence of this deep NAPL zone did not encounter NAPL-saturated conditions at this interval. Soil recovered from SHSB-21 completed to the northeast of the former Tar Separating Tank did exhibit a slight sheen and naphthalene-like odor above and within this fine sand/silt lens. Based on this information, the extent of the NAPL-saturated conditions observed at a depth of 50 feet during the installation of SHMW-02D appear to be localized to immediately below the former Tar Separating Tank, and there does not appear to be a significant quantity of DNAPL trapped above and/or within this fine sand/silt lens. Furthermore, staining, odors and/or sheens were not observed within soil recovered from the three supplemental field program borings below a depth of 55 feet.

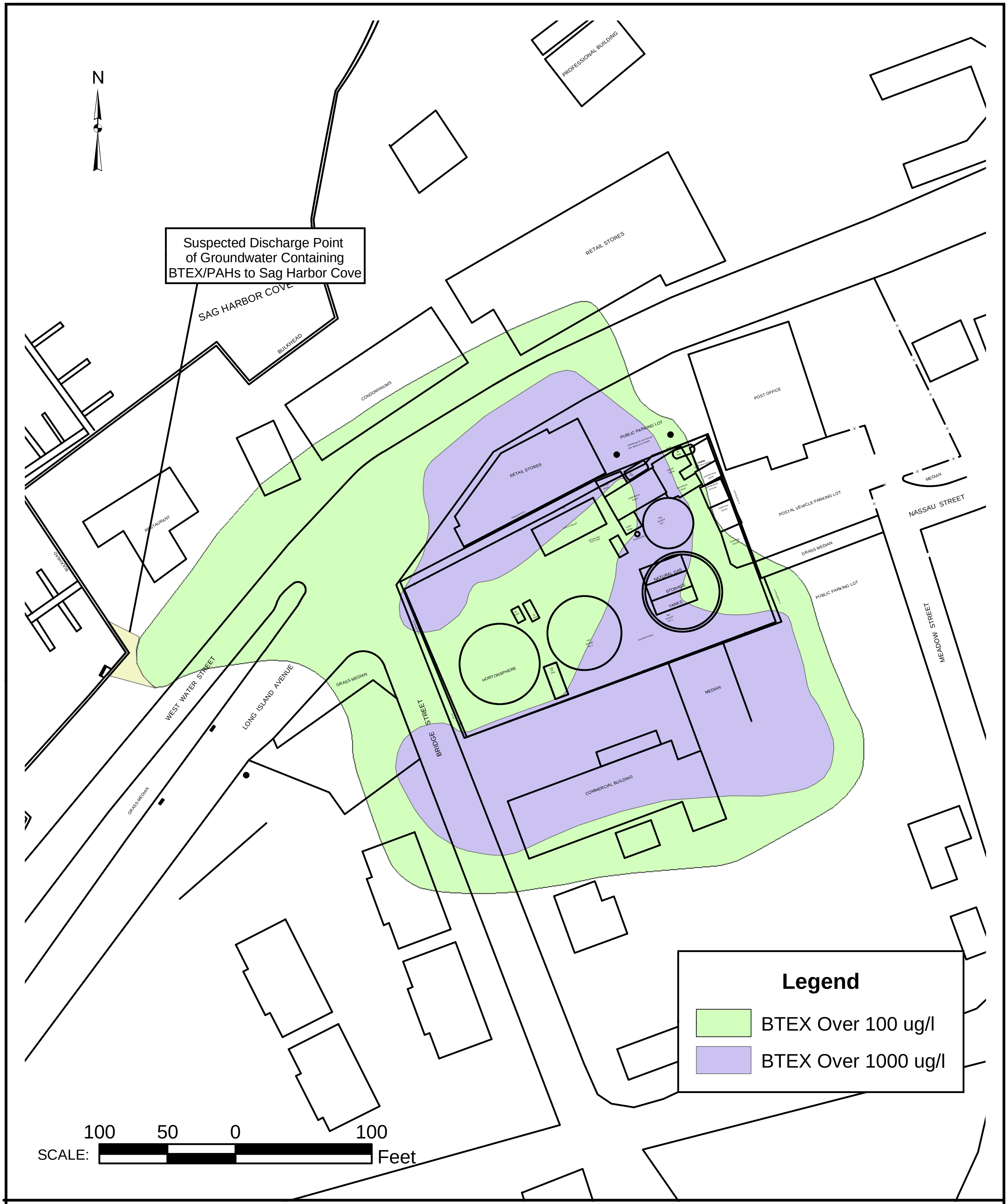
6.4 Fate and Transport of BTEX and PAHs

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. Soil within the BTEX/PAH source areas which include organic-rich peat deposits and fill material with relatively high levels of total organic carbon (TOC) will have a relatively high capacity to adsorb and retain much of the BTEX/PAHs, limiting their off-site migration in groundwater. Due to these conditions, 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 and near-site groundwater collected from areas which contain evidence of NAPL exhibit elevated levels of BTEX and low molecular weight PAHs in addition to relatively high concentrations of high molecular PAHs. In contrast, off-site groundwater data collected at least 50 feet from the site indicates the majority of groundwater exhibiting BTEX and PAHs primarily contain low molecular weight PAHs such as naphthalene, 2-methylnaphthalene and acenaphthylene.

As discussed above, dissolution of BTEX and PAHs from the on-site source areas into groundwater is the major transport mechanism for these compounds. This process has been ongoing since the compounds entered the subsurface environment a minimum of 70 years ago. Therefore, it can be concluded that dissolution along with volatilization and biodegradation processes, (collectively referred to as “weathering”) have been continuously reducing the overall concentration of these compounds within on-site source areas. Historical on-site groundwater data, while limited, does suggest that BTEX and PAH concentrations within the site have decreased in on-site groundwater over the 7-year period for which data is available. However, additional future monitoring would be needed to confirm these trends in BTEX and PAH concentrations.

Due to the relatively complex nature of groundwater flow and the presence of on-site source areas, a diffuse off-site zone of groundwater containing BTEX and PAHs exists primarily to the northwest, west and south of the site. BTEX and PAHs are found within the shallow groundwater zone (i.e., above the peat/silt/clay unit) and within the intermediate groundwater zone (i.e., below the peat/silt/clay unit); however, concentrations of these compounds were generally found to be higher in the shallow groundwater zone. This is likely due to the semi-confining nature of the peat/silt/clay unit as well as the upward or groundwater discharging conditions observed in the intermediate and deep groundwater zones.

Figures 6-1 and **6-2** depict this diffuse groundwater zone, with **Figure 6-1** representing the areal extent of BTEX and **Figure 6-2** representing the areal extent of PAHs. As indicated by these figures, BTEX and PAHs have primarily migrated to the northwest and west toward Sag Harbor Cove. Based on the supplemental field program data, groundwater containing relatively low levels of BTEX and PAHs appears to be discharging to a relatively narrow zone of Sag Harbor Cove to the west of the site, as illustrated on **Figures 6-1** and **6-2**. However, surface water and pore water sampling conducted in the suspected discharge area of the cove revealed only trace concentrations of BTEX in surface water (i.e., not exceeding 1 ug/l) and only trace concentrations of PAHs in pore water (i.e., not exceeding 4 ug/l). The lack of BTEX and PAHs in Sag Harbor Cove is likely attributable to the following:



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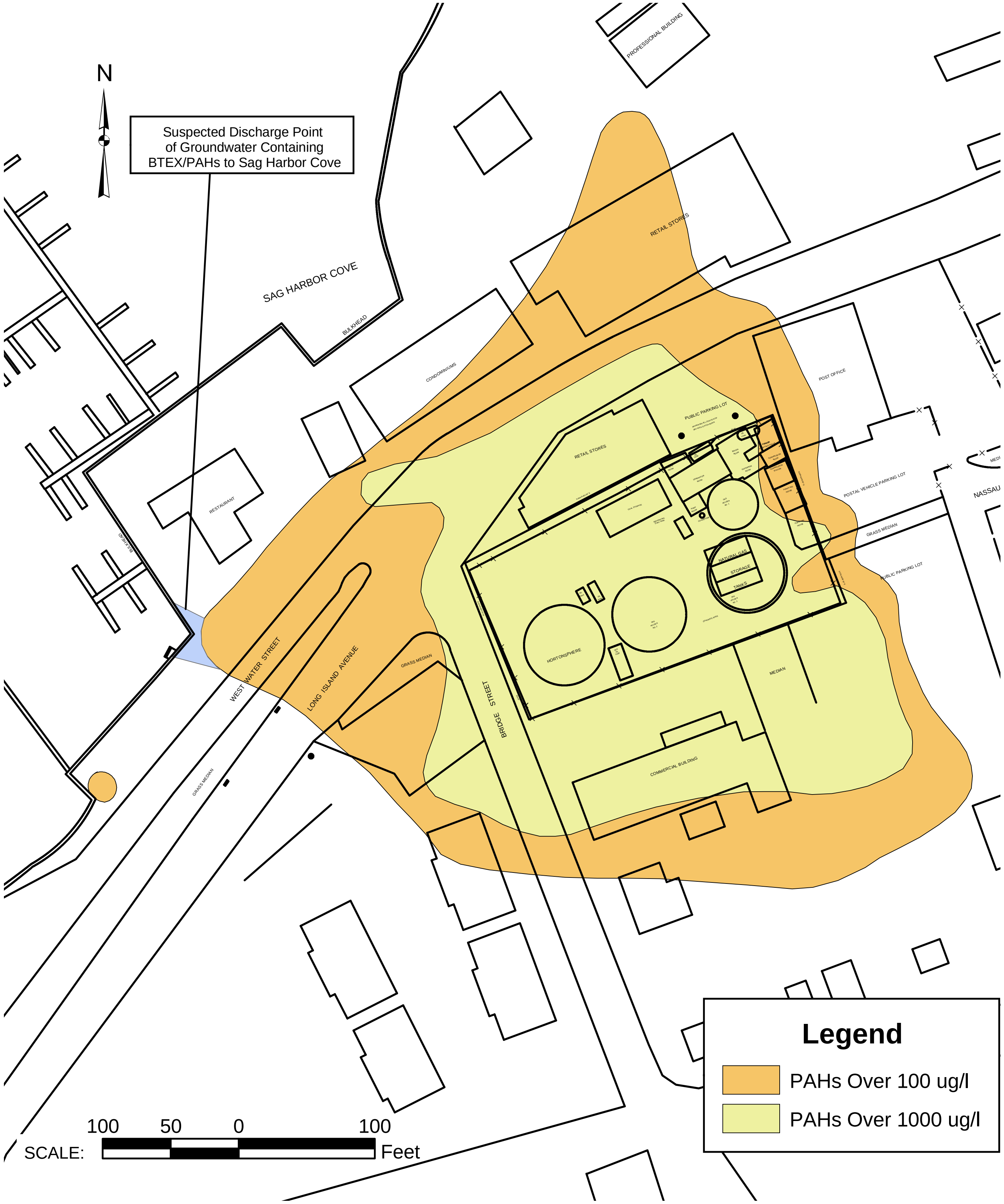
SAG HARBOR, NEW YORK

AREAL EXTENT OF BTEX IN GROUNDWATER

FIGURE 6-1

\\Nt4\cadwork\GIS_Arcview Projects\1620-D Sag Harbor\Maps - Fig 6-1.mxd



\\Nt4\cadwork\GIS_Arcview Projects\1620-D Sag Harbor\Maps - Fig 6-2.mxd

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SAG HARBOR, NEW YORK

AREAL EXTENT OF PAHs IN GROUNDWATER

FIGURE 6-2

- BTEX and PAH concentrations in groundwater discharging to the Sag Harbor Cove are relatively low.
- Groundwater containing BTEX and PAHs is rapidly diluted as a result of mixing with surface water and other water sources which also discharge to the cove.
- BTEX dissolved in surface water will have the propensity to volatilize from the water and undergo biological decay. Studies have shown that BTEX compounds readily degrade through natural processes within surface water.

Migration of BTEX and PAHs to the south of the site is also apparent. This appears to be attributable to a southern component of groundwater flow in the extreme southeastern portion of the site. However, it should be noted that during periods of high precipitation, there appears to be a more prominent southerly groundwater flow due to localized mounding of the water table, which may also have an influence on groundwater contaminant concentrations south of the site.

Southern migration of BTEX and PAHs may also have been influenced by the downward slope that appears to exist along the top of the peat layer that extends to the south of the site. In the southeastern portion of the site, in the former location of Gas Holder No. 3, the top of the peat layer appears to exist at approximately 2.2 feet below mean sea level. In the location of SHSB-38, to the east of the former Long Island Fisherman site, the top of the peat layer appears to exist at approximately 3.8 feet below mean sea level. As a result, this approximate 1.6 feet elevation change along the top of the peat layer, which acts as a confining unit when present in significant thicknesses, could further influence the southern trend of migration. Similar conditions exist at SHSB-12 and SHSB-33, located south of the site and just north of the building on the former Long Island Fisherman site.

7.0 REFERENCES

Borden, R.C., Gomez, C.A., Becker, M.T., Geochemical Indicators of Intrinsic Bioremediation, Vol. 33, No. 2, March-April 1995, Ground Water.

Dragun, J., The Soil Chemistry of Hazardous Materials, 1988, Hazardous Materials Control Resources Institute, Greenbelt, Maryland.

Durant, N.D., Jonkers, C.A.A., et al., Enhanced Biodegradation of Naphthalene in MGP Aquifer Microcosms, 1995, Bettelle Press, Columbus, Ohio.

Dvirka and Bartilucci Consulting Engineers, Sag Harbor Former Manufactured Gas Plant Site Remedial Investigation Report, Prepared for KeySpan Corporation, June 2002.

EDR: Environmental Data Resources, Inc.: Report ID 297846.6s, September 29, 1998.

Engineering-Science, Inc., Preliminary Site Assessment Sag Harbor Bridge Street Site, Sag Harbor, New York, 1993, prepared for the NYSDEC.

Fetter, C.W., Applied Hydrogeology, 1980, C.E. Merill Publishing Co., Columbus, Ohio.

Fluor Daniel GTI, Inc., Phase I Site Investigation Report, Sag Harbor, New York Site, April 1997, prepared for Long Island Lighting Company.

Freeze, R.A., Cherry, J.A., Groundwater, 1979, Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

Hayes, T.D., Linz, D.G., et al., Management of Manufactured Gas Plant Sites, Volumes I and II, 1996, Amherst Scientific Publishers, Amherst, Massachusetts.

Hinchee, R.E., Wilson, J.T., Downey, D.C., Intrinsic Bioremediation, 1995, Battelle Press, Columbus, Ohio.

Knox, R.C., Sabatini, D.A., Canter, L.W., Subsurface Transport and Fate Processes, 1993, Lewis Publishers, Ann Arbor, Michigan.

Landmeyer, J.E., Chapelle, F.H., Petkewich, M.D., Bradley, P.M., Assessment of natural attenuation of aromatic hydrocarbons in groundwater near a former manufactured-gas plant, South Carolina, USA, Vol. 34, No. 4, June 1998, Environmental Geology.

Lee, G.E., and Jones-Lee, A., Assessing and Managing Water Quality Impacts of Urban Stormwater Runoff, 1999, G. Fred Lee & Associates, El Macero, CA.

Long, R.L., and Morgan, L.G., The Potential for Biological Effects of Sediment-Sorbed Contaminants Tested in the National Status and Trends Program, National Oceanic and Atmospheric Administration, National Ocean Services Oceanography and Marine Assessment (NOAA/NOSOMA), 1991, Technical memorandum 52, Seattle, Washington.

Marquis, S.A., Smith, E.A., Assessment of Groundwater Flow and Chemical Transport in a Tidally Influenced Aquifer Using Geostatistical Filtering and Hydrocarbon Fingerprinting, March-April 1994, Groundwater Volume 32, No. 2.

McAllister, P.M., Chang, C.Y., A Practical Approach to Evaluating Natural Attenuation of Contaminants in Ground Water, Vol. 14, No. 2, 1994, Ground Water Monitoring and Remediation, Ground Water Publishing Co., Dublin, Ohio

McClymonds, N.E., Franke, O.L., Water Transmitting Properties of Aquifers on Long Island, New York, 1972, U.S. Geological Survey Professional Paper 627.E.

Montgomery, J.H., Welkom, L.M., Groundwaters Chemicals Desk Reference, 1990, Lewis Publishers, Ann Arbor, Michigan.

Nemickas, B. and Koszallca, E.J., Geohydrologic Appraisal of Water Resources of the South Fork, Long Island, New York, USGS Water Supply Paper 2073, 1983.

NUS Corporation Super Fund Division, Final Draft Listing Site Inspection Report, Sag Harbor Bridge Street, Sag Harbor, New York, Vol. IV, December 22, 1989, Prepared Under Technical Directive Document No. 68-01-7346, prepared for USEPA.

Rifai, H.S., Newell, C.J., et at., Intrinsic Bioattenuation for Subsurface Restoration, 1995, Battelle Press, Columbus, Ohio.

Rifai, H.S., Bedient, P.B., Wilson, J.T., Miller, K.M., Armstrong, J.M., Biodegradation modeling at an aviation fuel spill site, ASCE 114, 1988, Journal of Environmental Engineering

Salanitro, J.P., The Role of Bioattenuation in the Management of Aromatic Hydrocarbon Plumes in Aquifers, Vol. 13, No. 4, 1993, Ground Water Monitoring and Remediation, Ground Water Publishing Co., Dublin, Ohio.

Shacklette, H.T., and Boerngen, J.G., Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States, U.S. Geological Survey Professional Paper 1270, 1984.

Smolensky, D.A., Buxton, H.T., and Shernoff, P.K., Hydrologic Framework of Long Island, New York, 1989, Hydrologic Investigation Atlas HA-709, 1:250,000.

Suffolk County Department of Health Services, Water Table Contours and Location of Observation Wells in Suffolk County, New York, March 1999.

Suthersan, S.S., Remedial Engineering Design Concepts, 1997, CRC Press, Inc.

Toxics Targeting, Inc., Bridge Street, Sag Harbor, NY 11963, June 28, 2000.

United States Department of Agriculture Natural Resources Conservation Service, Soil Survey of Suffolk County, 1975.

USGS, Sag Harbor West Quadrangle, 1956.

Van Noort, P., Cipolletti, B., Sale, T., DNAPL Mobility Assessment at a Former Manufactured Gas Plant, Proceedings of the Focus Conference on Eastern Regional Ground Water Issues, October 3 – 5, 1994, Burlington, Vermont, 1994, Ground Water Publishing Company.

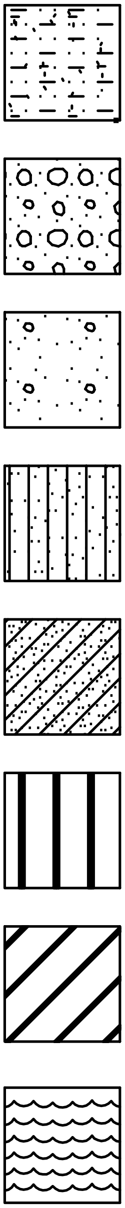
Van Noort, P., Cipolletti, R., et al., DNAPL Mobility Assessment at a Former Manufactured Gas Plant, October 1984, presented at the Focus Conference on Eastern Regional Groundwater Issues, Burlington, Vermont, October 1994, sponsored by the National Groundwater Association.

Wick, L.Y., McNeill, K., Rojo, M., Medilanski, E., Geschwend, P.M., Fate of Benzene in a Stratified Lake Receiving Contaminated Groundwater Discharges from a Superfund Site, Vol. 43, No. 20, Environmental Science and Technology.

APPENDIX A

SUPPLEMENTAL FIELD PROGRAM BORING LOGS

KEY TO LITHOLOGIC UNITS USED FOR GRAPHIC LOGS



Topsoil, artificial fill or pavement

Gravel to very gravelly sand

Sand, fine to coarse, may include some gravel

Silty sand to silt with sand

Clayey sand to sand/clay mixtures

Silt to clay rich silt

Clay

Peat deposit

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Site Id: SHSB-20
Location: Sag Harbor, New York
Purpose: Soil Boring
Date(s): 03/21/02 – 03/25/02
Total Depth: 101.00'
Remarks: Samples selected for analysis at 9–11', 31–33', 79–81', and 99–101'.
Geotech samples selected for analysis at 13–15', 59–61', and 77–79'.

Elevation: 4.85'
Datum: Mean Sea Level
Logged By: John Schafer
Drilling Method: Hand Augered 0–5', 4 1/4 HSA 5–101'
Contractor: Delta Well and Pump
Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–5'	20 ppm		Brown, medium–coarse sandy FILL w/some clay and fine–coarse gravel, metal parts, loose, very light staining, slight hydrocarbon–like odor, wet at 2'
5		5–7'	6.0 ppm 33 ppm		Brown, fine–coarse SAND w/fine–coarse gravel from 5–7', loose, black staining at 6', hydrocarbon–like odor, wet NO RECOVERY
		7–9'			Dark br, f–c SAND w/f gravel, loose, staining, naphthalene–like odor, wet
10		9–11'	90 ppm 160 ppm 60 ppm		Brown, fine SAND from 9.75–10.5', some medium sand and trace silt, wood stringers, medium dense, naphthalene–like odor, wet
		11–13'	9.0 ppm 0.0 ppm 0.0 ppm		Dark brown–red brown, fine SAND w/some medium sand, trace fine–coarse gravel, medium dense, slight naphthalene–like odor, wet
		13–15'	0.0 ppm 26 ppm 27 ppm		Dark brown, fine–medium SAND w/some coarse sand, some gravel from 13–13.5', trace gravel from 13.5–14.75', slight non–recognizable odor
15		15–17'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/some fine gravel, loose–medium dense, wet Dark brown, f SAND w/some m–c sand, trace gravel, medium dense, wet
		17–19'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND, trace fine gravel, loose–medium dense, wet
20		19–21'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–medium SAND, trace coarse sand, medium dense, wet
		21–23'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND, trace fine gravel, loose–medium dense, wet
		23–25'	0.0 ppm 0.0 ppm		Brown, fine SAND w/some medium sand, medium dense, wet
25		25–27'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–medium SAND w/some coarse sand, very fine gravel layer at 26.5'
		27–29'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND, loose–medium dense, wet
		29–31'	1.8 ppm 1.6 ppm		Brown, f–m SAND, medium dense, wet, to brown, vf–f SAND, dense, moist

Location: Sag Harbor, New York

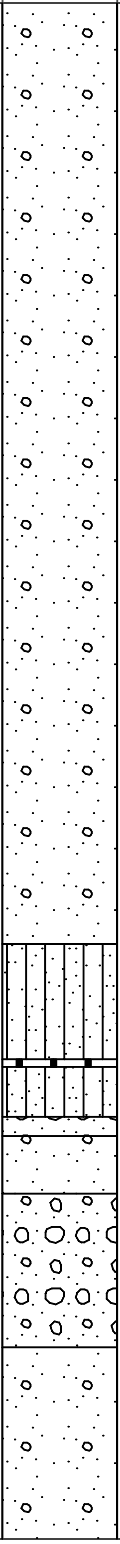
Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-20

Total Depth: 101.00'

Borehole Dia.: 6.50in



Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		31–33'	2.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine SAND, medium dense, wet Brown, very fine SAND, dense, moist
		33–35'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–very fine SAND, dense, moist
35		35–37'	0.4 ppm 0.6 ppm 1.1 ppm 1.2 ppm		Brown, very fine–fine SAND, dense, moist
		37–39'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, very fine–fine SAND from 37–38.5', dense, moist Brown, fine SAND w/some m–c sand, trace fine gravel, medium dense, moist
40		39–41'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND, trace fine gravel, loose, moist
		41–43'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/some fine gravel and trace coarse gravel, loose, wet
		43–45'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
45		45–47'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine SAND w/some medium–coarse sand, some fine gravel, loose–medium dense, wet
		47–49'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, w/some coarse gravel
50		49–51'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND, trace fine gravel, loose, wet
		51–53'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/some fine gravel, medium dense, wet
		53–55'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND, trace fine gravel, medium dense, wet Brown, silty fine–coarse SAND at 54.55', w/some fine gravel
55		55–57'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, silty fine–coarse SAND, some biotite from 54.55–55', pyrite, and quartz in tip of spoon, medium dense, wet
		57–59'	0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/silt layer at 57.5', medium dense, wet
60		59–61'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, gravelly fine–coarse SAND, loose, wet Brown, very fine SAND from 59.5–60.25', medium dense, wet
		61–63'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, gravelly fine–coarse SAND w/fine–coarse gravel, loose, wet
		63–65'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse gravelly SAND, gravel layer from 64.75–65', loose, wet
65		65–67'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Light brown–orange brown, fine–coarse SAND w/fine gravel and some coarse gravel, loose, moist
		67–69'	0.0 ppm 0.0 ppm 0.0 ppm		Light brown, fine–coarse SAND w/fine gravel, loose, wet
		69–71'	0.0 ppm 0.0 ppm		Orange–brown, f–c SAND w/f–c gravel, med. dense, moist

Location: Sag Harbor, New York	Site Id: SHSB-20
Purpose: Soil Boring	Total Depth: 101.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		71–73'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Orange–brown, fine–coarse SAND w/fine–coarse gravel, loose, wet
		73–75'	0.0 ppm 0.0 ppm 0.0 ppm		Orange–brown, fine–coarse SAND w/fine gravel, medium dense, moist
75		75–77'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/some fine gravel, loose, moist
		77–79'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, gravelly fine–coarse SAND, some mica flakes, medium dense, moist
80		79–81'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		81–83'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		83–85'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/some fine–coarse gravel, medium dense, moist
85		85–87'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/fine gravel and some coarse gravel, medium dense, moist
		87–89'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
90		89–91'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/some fine–coarse gravel, medium dense, moist
		91–93'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/some fine gravel, trace coarse gravel, medium dense, moist
		93–95'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
95		95–97'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND, trace fine gravel, some mica flakes, medium dense, moist
		97–99'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		99–101'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND, medium dense, moist
100					Base of boring – 101 ft.
105					

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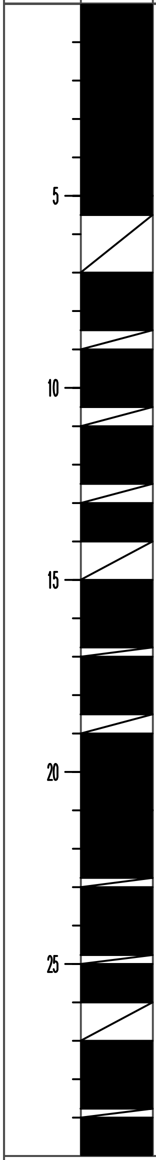
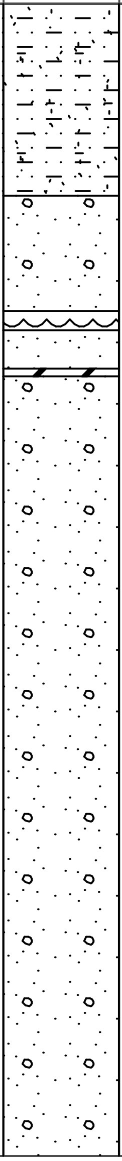
Site Id: SHSB-21
Location: Sag Harbor, New York
Purpose: Soil Boring
Date(s): 03/27/02 - 03/29/02
Total Depth: 101.00'
Elevation: 4.94'
Datum: Mean Sea Level
Logged By: John Schafer
Drilling Method: Hand Augered 0-5', 4 1/4 HSA 5-101'
Contractor: Delta Well and Pump
Borehole Dia.: 6.50in

Remarks: Samples selected for analysis at 7-9', 15-17', 31-33', 71-73', and 95-97'.
Geotech samples selected for analysis at 11-13', and 49-51'.

Depth (ft) / Recovery



Graphic Log



Sample Interval	PID	Material Description
0-5'	0.0 ppm	Dark brown, fine-coarse sandy FILL w/fine-coarse gravel, some ceramic pipe
5-7'	50 ppm	Black, very fine-fine SAND w/some medium-coarse sand, medium dense, black staining, naphthalene-like odor, moist
7-9'	84 ppm 300 ppm 250 ppm	Bk, f-m SAND w/some f gravel, some wood, loose, heavy bk staining, heavy naphthalene-like odor, wet, to br-orange br, PEAT, light, tightly packed, naphthalene-like odor, moist
9-11'	135 ppm 40 ppm 55 ppm	Dk bk, SAND from 9-9.5', clay lens with tar/oil at 9.5', heavy dark black staining, naphthalene-like odor
11-13'	100 ppm 85 ppm 65 ppm	Brown, vf-f SAND w/some m-c sand, medium dense, naphthalene-like odor Black, SAND w/trace clay, tar saturated, heavy naphthalene-like odor, wet Brown, f-m SAND w/some c sand, medium dense, naphthalene-like odor, moist
13-15'	255 ppm 617 ppm	Brown, very fine-fine SAND from 13-15', medium dense, tar saturated lens from 13.75-14', naphthalene-like odor, sheen, wet
15-17'	686 ppm 1200 ppm 250 ppm	Br, vf-f SAND w/some m sand and trace c sand, trace f gravel, med. dense, heavy tar stained-saturated to 16', naphthalene-like odor, sheen
17-19'	190 ppm 160 ppm 75 ppm	Brown, very fine-fine SAND, dense, heavy brown staining from 17-17.25', naphthalene-like odor, sheen, moist
19-21'	26 ppm 35 ppm 28 ppm 58 ppm	Brown, fine-coarse SAND, loose, naphthalene-like odor, sheen, wet
21-23'	60 ppm 80 ppm 90 ppm	Br, f-c SAND, loose, sporatic br staining, naph.-like odor, sheen, wet
23-25'	240 ppm 360 ppm 320 ppm	Brown, fine-coarse SAND, very fine dense sand lens from 24.5-24.75, loose, moderate brown staining, naphthalene-like odor, sheen, wet
25-27'	76 ppm 23 ppm	Light brown-gray, very fine-medium SAND, dense, naphthalene-like odor, moist
27-29'	40 ppm 120 ppm 9.0 ppm	Gray, very fine-medium SAND, dense, naphthalene-like odor, slight sheen, moist
29-31'	10 ppm 2.0 ppm	Light gray, f-c SAND, medium dense, slight napthalene-like odor, wet

Location: Sag Harbor, New York

Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

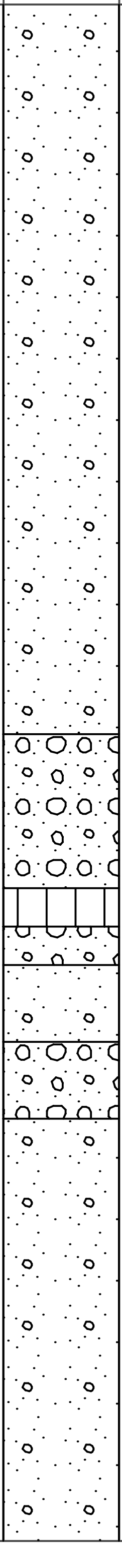
Site Id: SHSB-21

Total Depth: 101.00'

Borehole Dia.: 6.50in

Recovery

Graphic Log



Depth (ft)	Sample Interval	PID	Material Description
	31–33'	1.5 ppm 1.5 ppm 0.0 ppm 0.0 ppm	Light gray–brown, fine–coarse SAND w/very fine sand lens at 31.5', dense to loose
	33–35'	1.5 ppm 55 ppm 10 ppm 0.0 ppm	Light brown, fine–coarse SAND, medium dense, naphthalene–like odor, moist Light brown, very fine SAND from 33.75–34.5', very dense, moist
35	35–37'	6.0 ppm 86 ppm 86 ppm	Light brown, fine–medium SAND w/some coarse sand, dense, slight brown staining at 36', naphthalene–like odor, moist
	37–39'	21 ppm 4.0 ppm 5.0 ppm 0.0 ppm	Light brown, fine–coarse SAND, trace fine gravel, dense, slight naphthalene–like odor, moist
40	39–41'	15 ppm 20 ppm	Brown, fine–coarse SAND, medium dense, slight naphthalene–like odor, moist
	41–43'	13 ppm 16 ppm 0.0 ppm	Light brown, fine–coarse SAND, trace fine gravel, loose, slight naphthalene–like odor, wet
	43–45'	25 ppm 0.0 ppm 0.0 ppm	Same as above
45	45–47'	20 ppm 13 ppm 3.0 ppm	Brown, fine–coarse SAND w/some fine–coarse gravel, loose–medium dense, slight naphthalene–like odor, wet
	47–49'	33 ppm 3.0 ppm	Same as above
50	49–51'	13 ppm 5.0 ppm 0.0 ppm	Brown, gravelly fine–coarse SAND w/fine–coarse gravel, medium dense, slight naphthalene–like odor, wet
	51–53'	0.0 ppm 3.0 ppm 0.0 ppm	Brown, fine–SAND w/some medium–coarse sand, some coarse gravel, dense, slight naphthalene–like odor, wet
	53–55'	3.0 ppm 3.0 ppm	Br, sandy SILT w/some c sand and f gravel, f–c gravel lens with slight sheen, stiff, non–plastic, slight naphthalene–like odor, moist
55	55–57'	0.0 ppm 0.0 ppm 0.0 ppm	Brown, c SAND w/some f–m sand, fine–coarse gravel, dense, wet
	57–59'	0.0 ppm 0.0 ppm 0.0 ppm	Brown, gravelly fine–coarse SAND w/some fine–medium sand, loose, wet
60	59–61'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, coarse SAND w/some fine–medium sand, fine–coarse gravel, loose, wet
	61–63'	0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine–coarse SAND w/some fine–coarse gravel, loose, wet
	63–65'	0.0 ppm 0.0 ppm 0.0 ppm	Brown–orange brown, coarse SAND w/some fine–medium sand, fine–coarse gravel, loose, moist
65	65–67'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above
	67–69'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Orange–brown, fine–coarse SAND, trace fine gravel, loose, moist
	69–71'	0.0 ppm 0.0 ppm 0.0 ppm	Orange–brown, fine–coarse SAND, dense, moist

Location: Sag Harbor, New York

Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-21

Total Depth: 101.00'

Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		71-73'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND, trace fine gravel, loose, moist
		73-75'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND, loose, wet
75		75-77'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND, trace fine gravel, loose, wet
		77-79'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND, medium dense, wet
80		79-81'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, coarse SAND w/some fine-medium sand, fine-coarse gravel, loose, wet
		81-83'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, coarse SAND w/some fine-medium sand and some fine-coarse gravel, loose, wet
		83-85'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
85		85-87'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown-dark red brown, coarse SAND w/some fine-medium sand, fine gravel, loose, wet
		87-89'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine gravelly coarse SAND w/some fine-medium sand, loose, wet
90		89-91'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND w/fine gravel, loose, wet
		91-93'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND w/some fine gravel, loose, wet
		93-95'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND w/some fine gravel, loose-medium dense, wet
95		95-97'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND, trace fine gravel, loose-medium dense, wet
		97-99'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND w/some fine gravel, loose, wet
100		99-101'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
					Base of boring - 101 ft.
105					

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

Site Id: SHSB-22

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/01/02 – 04/02/02

Total Depth: 100.00'

Elevation: 4.61'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hand Augered 0-5', 4 1/4 HSA 5-100'

Contractor: Delta Well and Pump

Borehole Dia.: 6.50in

Remarks: Samples selected for analysis at 6-8', 20-22', 52-54', and 98-100'.
Geotech sample selected for analysis at 64-66'.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-5'			NO RECOVERY (0-5')
5		5-6'	40 ppm		Black, f-m SAND, loose, black staining, naphthalene-like odor, wet
		6-8'	95 ppm 50 ppm		Black, f-m SAND, loose, black staining, heavy naphthalene-like odor, wet Brown, PEAT, soft, plastic, light, heavy naphthalene-like odor
		8-10'	60 ppm 120 ppm 11 ppm		Bk-dark br, f-m SAND, loose, oil-like staining, heavy naphthalene-like odor, sheen, wet, to dk br, PEAT, plastic, organic (H2S-like) odor
10		10-12'	93 ppm 85 ppm		Bk, f-m SAND w/some c sand, peat lens, vf-f sand lens at 11.25' to soft liquid sand lens at 11.5', loose, black staining, heavy naphthalene-like odor, wet
		12-14'	23 ppm 26 ppm 28 ppm		Dk rd-br, vf-f SAND, m dense, some tar blebs, naph.-like odor, sheen, wet
15		14-16'	31 ppm 28 ppm		Dark red-brown, very fine-fine SAND w/some fine gravel, slight silt layer and sheen at 14.25', medium dense, naphthalene-like odor, moist
		16-18'	8.0 ppm 9.0 ppm 0.0 ppm		Br, f-c SAND w/trace f gravel, m dense, slight naphthalene-like odor, wet
		18-20'	4.0 ppm 0.0 ppm		Brown, fine-medium SAND w/some coarse sand and fine gravel, medium dense, wet
20		20-22'	2.8 ppm 1.8 ppm 0.0 ppm 0.0 ppm		Brown, fine-medium SAND w/some coarse sand, very fine sand layer at 21.75', medium dense, moist
		22-24'	1.2 ppm 0.0 ppm		Brown, fine-medium SAND, trace coarse sand, very fine-fine sand layer at 23', medium dense, wet
25		24-26'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND, medium dense, wet
		26-28'	0.0 ppm 0.0 ppm 0.0 ppm		Light brown-gray, fine-coarse SAND w/trace fine gravel, loose, wet
		28-30'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Light brown, fine-coarse SAND, loose, wet Brown, fine-coarse SAND, vf sand lens from 31.25-31.5', medium dense, wet

Location: Sag Harbor, New York

Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-22

Total Depth: 100.00'

Borehole Dia.: 6.50in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30–32'	0.0 ppm 0.0 ppm		Brown, fine–coarse SAND, vf sand lens from 31.25–31.5', medium dense, wet
		32–34'	0.0 ppm 0.0 ppm		Brown, fine–medium SAND w/very fine sand lens at 32.25', medium dense, moist
35		34–36'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–medium SAND w/some coarse sand, medium dense, wet
		36–38'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–medium SAND w/trace coarse sand, medium dense, moist
		38–40'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND, medium dense, wet
40		40–42'	10 ppm 5.0 ppm 2.0 ppm 1.0 ppm		Brown, fine–medium SAND w/some coarse sand, medium dense, slight naphthalene–like odor, moist
		42–44'	2.5 ppm 1.7 ppm 0.8 ppm		Brown, fine–medium SAND w/some coarse sand, some fine gravel, medium dense moist
45		44–46'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/some fine gravel, medium dense, wet
		46–48'	1.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/some fine gravel, trace coarse gravel, medium dense, moist
		48–50'	1.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/some fine–coarse gravel, medium dense, wet
50		50–52'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–medium SAND w/some coarse sand and fine–coarse gravel, medium dense, wet
		52–54'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, gravelly fine–coarse SAND w/some fine–medium sand, loose–medium dense, wet
55		54–56'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		56–58'	0.5 ppm 0.4 ppm 0.0 ppm 0.0 ppm		Brown–light gray, fine–coarse SAND, medium dense, moist
		58–60'	0.6 ppm 0.8 ppm 1.3 ppm 0.4 ppm		Gray, fine–coarse SAND w/fine–coarse gravel, medium dense, moist
60		60–62'	1.5 ppm 0.8 ppm 0.7 ppm 0.0 ppm		Gray–orange brown, fine–coarse SAND w/some fine gravel from 61–62', loose, wet
		62–64'	1.7 ppm 1.1 ppm 1.1 ppm		Yellow brown–orange brown, fine–coarse SAND w/fine gravel, loose, wet
65		64–66'	1.7 ppm 1.5 ppm 0.0 ppm 0.0 ppm		Orange–brown, coarse SAND w/some fine–medium sand and fine gravel, loose, moist
		66–68'	0.9 ppm 1.0 ppm 0.4 ppm 0.0 ppm		Brown, fine–coarse SAND w/fine–coarse gravel, loose, wet
		68–70'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/fine–coarse gravel, medium dense, wet

Location: Sag Harbor, New York

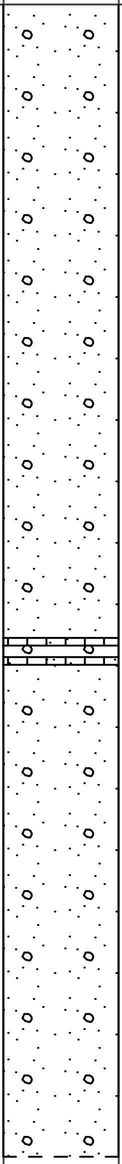
Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB–22

Total Depth: 100.00'

Borehole Dia.: 6.50in



Depth (ft)	Sample Interval	PID	Material Description
	70–72'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine–coarse SAND w/some fine–coarse gravel, loose, wet
	72–74'	0.0 ppm 0.0 ppm	Brown, fine–coarse SAND w/fine gravel, loose, wet
75	74–76'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, coarse SAND w/some fine–medium sand and fine–coarse gravel, loose, wet
	76–78'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine–coarse SAND, trace fine gravel, loose, wet
	78–80'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above
80	80–82'	1.5 ppm 1.2 ppm 0.7 ppm 0.4 ppm	Same as above
	82–84'	0.6 ppm 0.6 ppm 0.5 ppm 0.1 ppm	Brown, fine–coarse SAND w/some fine gravel, loose, wet
85	84–86'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, coarse SAND w/fine gravel, loose, wet
	86–88'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine–coarse SAND w/some fine gravel, slight very fine sand–silt lenses at 86.5' and 87', loose–medium dense, moist–wet
	88–90'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine–coarse SAND w/some fine–coarse gravel, medium dense, moist
90	90–92'	0.4 ppm 0.4 ppm 0.5 ppm 0.8 ppm	Same as above
	92–94'	0.0 ppm 0.0 ppm 1.4 ppm 0.7 ppm	Same as above
95	94–96'	12 ppm 0.7 ppm 1.1 ppm 0.4 ppm	Brown, fine–coarse SAND, medium dense, wet
	96–98'	0.5 ppm 1.1 ppm 1.3 ppm 0.3 ppm	Same as above
	98–100'	0.3 ppm 0.3 ppm 0.3 ppm 0.3 ppm	Brown, fine–coarse SAND w/fine gravel, medium dense, wet
100			Base of boring – 100 ft.
105			

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

Site Id: SHSB-23

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/04/02 – 04/04/02

Total Depth: 60.00'

Elevation: 6.02'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Remarks: Samples selected for analysis at 8–10', 17–19', 37–39', and 58–60'.
Geotech sample selected for analysis at 4–6'.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–4'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, FILL, top soil, grass/roots, some fine gravel, soft, slightly plastic Brown, FILL, silty fine sand w/trace fine gravel, medium dense, moist
5		4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, FILL, silty fine sand w/some fine gravel, loose, moist Brown, fine–medium sandy FILL w/some coarse sand, some fine gravel, some brick, medium dense, moist
10		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, silty very fine–fine SAND w/some medium–coarse sand and fine–coarse gravel, some shells and wood, medium dense, wet at 8.5'
15		12–16'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine SAND w/some medium sand, medium dense, wet
		16–20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine SAND w/some medium sand, trace coarse sand, medium dense, wet
20		20–24'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
25		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–SAND w/some medium sand, medium dense, wet
		28–32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above

Location: Sag Harbor, New York

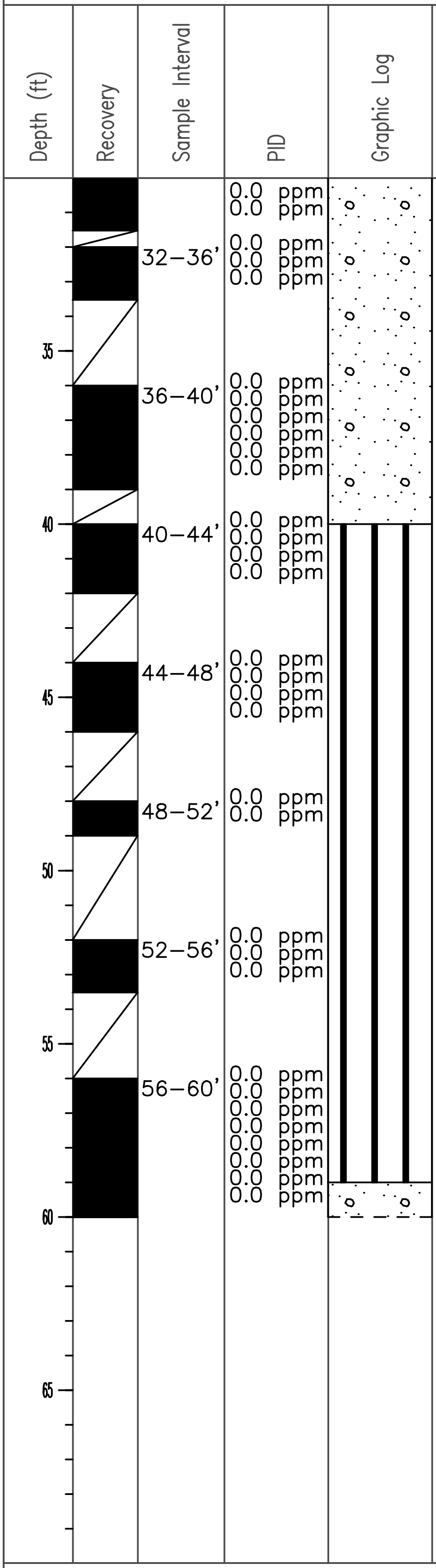
Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-23

Total Depth: 60.00'

Borehole Dia.: 2.00in



Sample Interval	PID	Material Description
	0.0 ppm 0.0 ppm	Brown, fine-SAND w/some medium sand, medium dense, wet
32-36'	0.0 ppm 0.0 ppm 0.0 ppm	Brown, very fine-fine SAND w/some medium sand, medium dense, wet
36-40'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown-orange brown, fine-medium SAND, medium dense, wet
40-44'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, SILT, soft, non-plastic, wet, nearly liquid
44-48'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above
48-52'	0.0 ppm 0.0 ppm	Same as above
52-56'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above
56-60'	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 Brown-orange brown, fine-coarse SAND, dense, wet Base of boring - 60 ft.

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Site Id: SHSB-24

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/16/02 – 04/17/02

Total Depth: 60.00'

Remarks: Samples selected for analysis at 20–22' and 56–58'.

Elevation: 7.67'

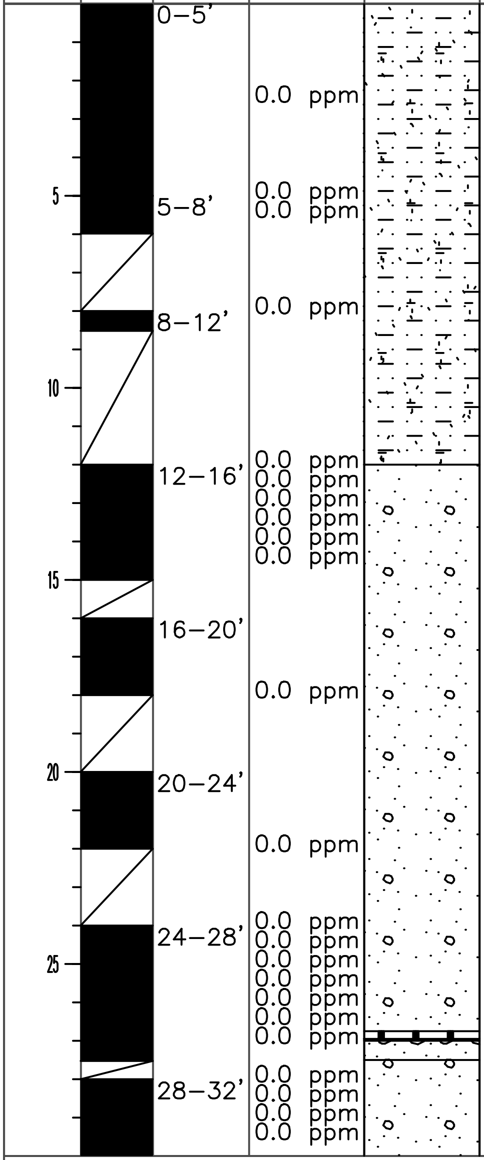
Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hand Augered 0–5', Geoprobe 5–60'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in



Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–5'	0.0 ppm		Brown, fine–medium sandy FILL w/fine–coarse gravel, large cobbles, cement, brick
5		5–8'	0.0 ppm 0.0 ppm		Brown, FILL, fine–coarse gravel/cement w/some fine–medium sand, loose, dry
10		8–12'	0.0 ppm		Brown, fine–coarse sandy FILL w/coal and brick fragments, some coarse gravel, loose, wet at 10'
15		12–16'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark gray, very fine–fine SAND, micaceous, medium dense, wet
		16–20'	0.0 ppm		Dark gray–brown, very fine–fine SAND, loose, wet (liner jammed, sample placed in bag, headspace PID)
20		20–24'	0.0 ppm		Dark brown, fine–medium SAND w/some coarse sand, loose, wet (liner jammed, sample placed in bag, headspace PID)
25		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, fine–medium SAND w/some coarse sand, some fine gravel at 27', silt lens at 26.75', micaceous, medium dense, wet
		28–32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, fine–medium SAND w/some coarse sand, micaceous, medium dense, organic (H2S–like) odor, wet

Location: Sag Harbor, New York

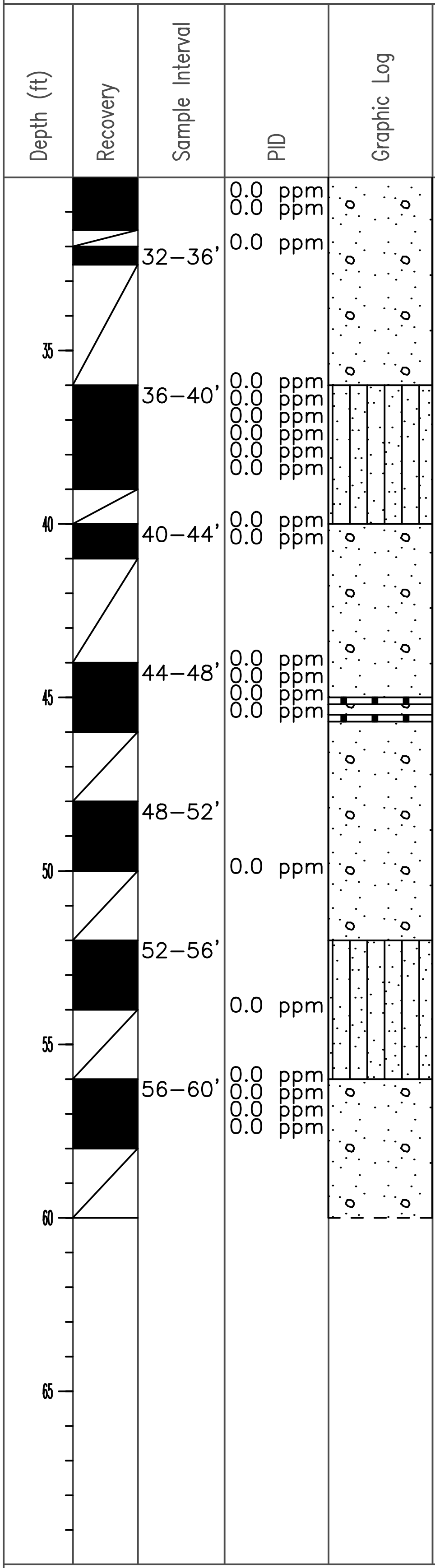
Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-24

Total Depth: 60.00'

Borehole Dia.: 2.00in



Sample Interval	PID	Material Description
	0.0 ppm 0.0 ppm	
32–36'	0.0 ppm	Brown, fine–medium SAND w/some coarse sand, slight organic (H2S–like) odor
36–40'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine–coarse SAND w/several thin silt lenses, loose–dense, wet
40–44'	0.0 ppm 0.0 ppm	Brown, fine–coarse SAND w/trace silt, loose, wet
44–48'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine–medium SAND w/some coarse sand, silt lenses at 45' and 45.5', medium dense, moist
48–52'	0.0 ppm	Light brown, fine–medium SAND w/some coarse sand, loose, wet (liner jammed, sample placed in bag, headspace PID)
52–56'	0.0 ppm	Light brown, fine–coarse SAND w/some silt lenses, loose–dense, wet (liner jammed, sample placed in bag, headspace PID)
56–60'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Light brown, very fine–medium SAND w/some coarse sand, medium dense, moist
		Base of boring – 60 ft.

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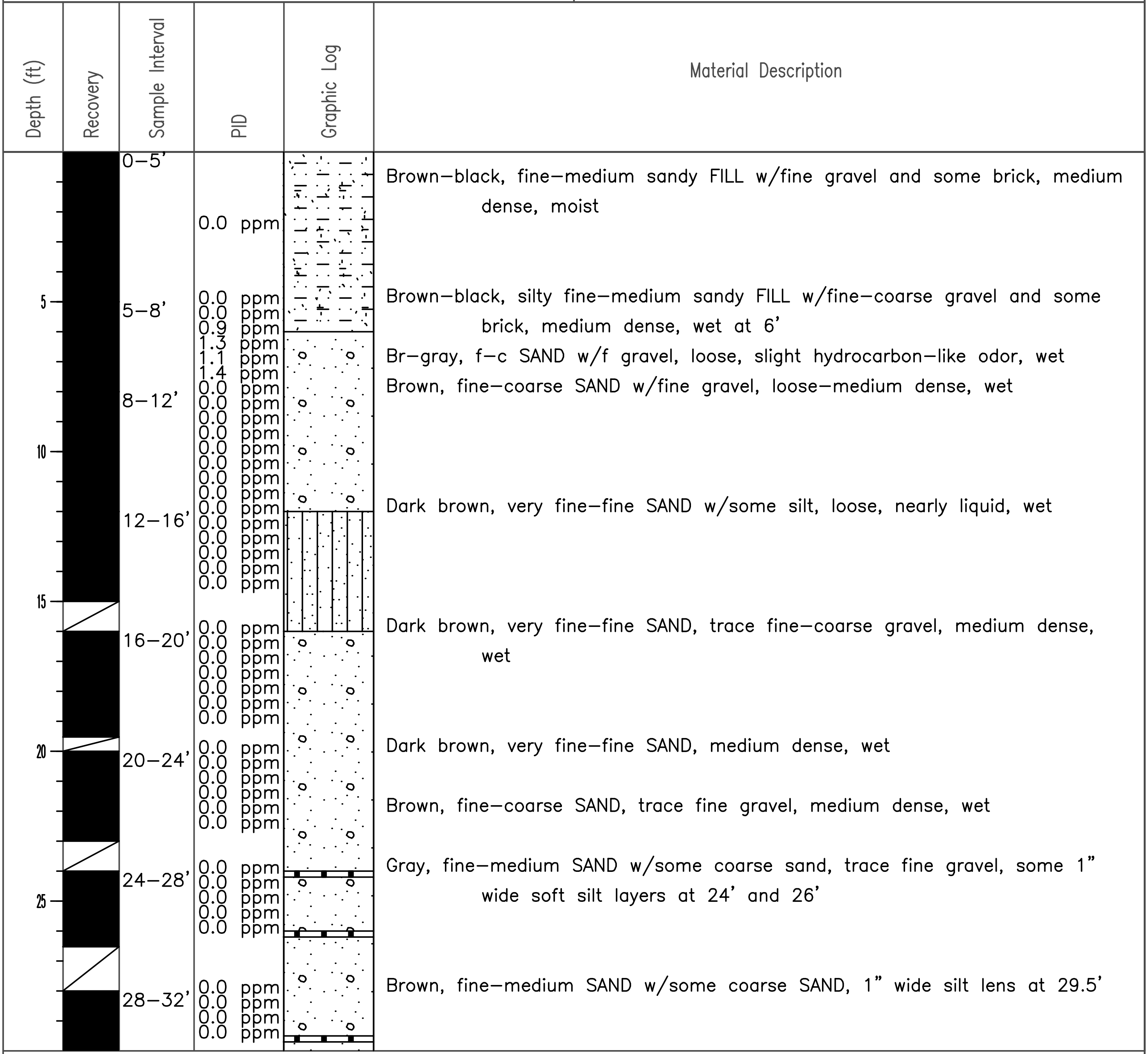
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

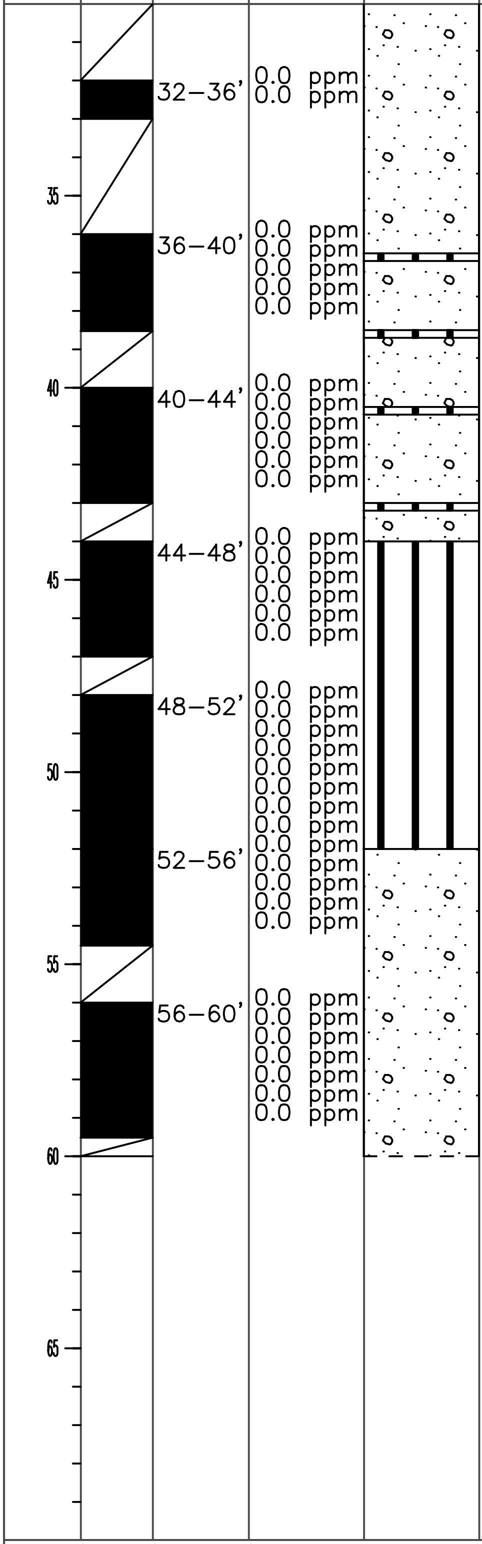
Site Id: SHSB-25
Location: Sag Harbor, New York
Purpose: Soil Boring
Date(s): 04/05/02 - 04/08/02
Total Depth: 60.00'
Remarks: Samples selected for analysis at 6-8', 21-23', 42-44', and 57-59'.

Elevation: 6.31'
Datum: Mean Sea Level
Logged By: John Schafer
Drilling Method: Hand Augered 0-5', Geoprobe 5-60'
Contractor: Zebra Environmental
Borehole Dia.: 2.00in



Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-5'	0.0 ppm		Brown-black, fine-medium sandy FILL w/fine gravel and some brick, medium dense, moist
5		5-8'	0.0 ppm 0.0 ppm 0.9 ppm 1.3 ppm 1.1 ppm 1.4 ppm		Brown-black, silty fine-medium sandy FILL w/fine-coarse gravel and some brick, medium dense, wet at 6' Br-gray, f-c SAND w/f gravel, loose, slight hydrocarbon-like odor, wet
10		8-12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND w/fine gravel, loose-medium dense, wet
15		12-16'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, very fine-fine SAND w/some silt, loose, nearly liquid, wet
		16-20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, very fine-fine SAND, trace fine-coarse gravel, medium dense, wet
20		20-24'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, very fine-fine SAND, medium dense, wet Brown, fine-coarse SAND, trace fine gravel, medium dense, wet
25		24-28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine-medium SAND w/some coarse sand, trace fine gravel, some 1" wide soft silt layers at 24' and 26'
		28-32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-medium SAND w/some coarse SAND, 1" wide silt lens at 29.5'

Location: Sag Harbor, New York	Site Id: SHSB-25
Purpose: Soil Boring	Total Depth: 60.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in



Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
					Brown, fine-medium SAND w/some coarse SAND, 1" wide silt lens at 29.5'
		32-36'	0.0 ppm 0.0 ppm		Brown, very fine SAND, medium dense, soft, wet
35		36-40'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, very fine-fine SAND, silt lenses at 36.5' and 38.5', medium dense, wet
40		40-44'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, very fine-fine SAND w/silt lenses at 40.5' and 43'
45		44-48'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, SILT, very soft, plastic, wet
50		48-52'	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
		52-56'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-medium SAND w/some coarse SAND, loose, wet
55		56-60'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-coarse SAND w/some fine-coarse gravel, medium dense, moist
					Brown, very fine SAND, dense, moist
60					Base of boring - 60 ft.
65					

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Site Id: SHSB-26

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/08/02 – 04/09/02

Total Depth: 60.00'

Remarks: Samples selected for analysis at 5–6', 16–18', 40–42', and 58–60'.

Elevation: 5.74'

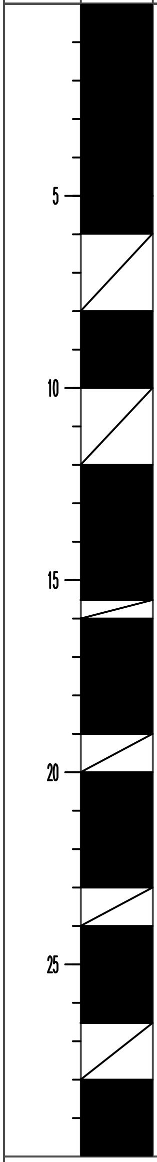
Datum: Mean Sea Level

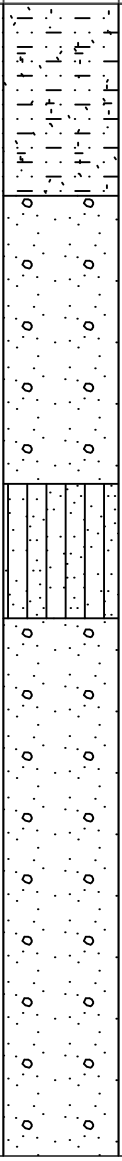
Logged By: John Schafer

Drilling Method: Hand Augered 0–5', Geoprobe 5–60'

Contractor: Zebra Environmental

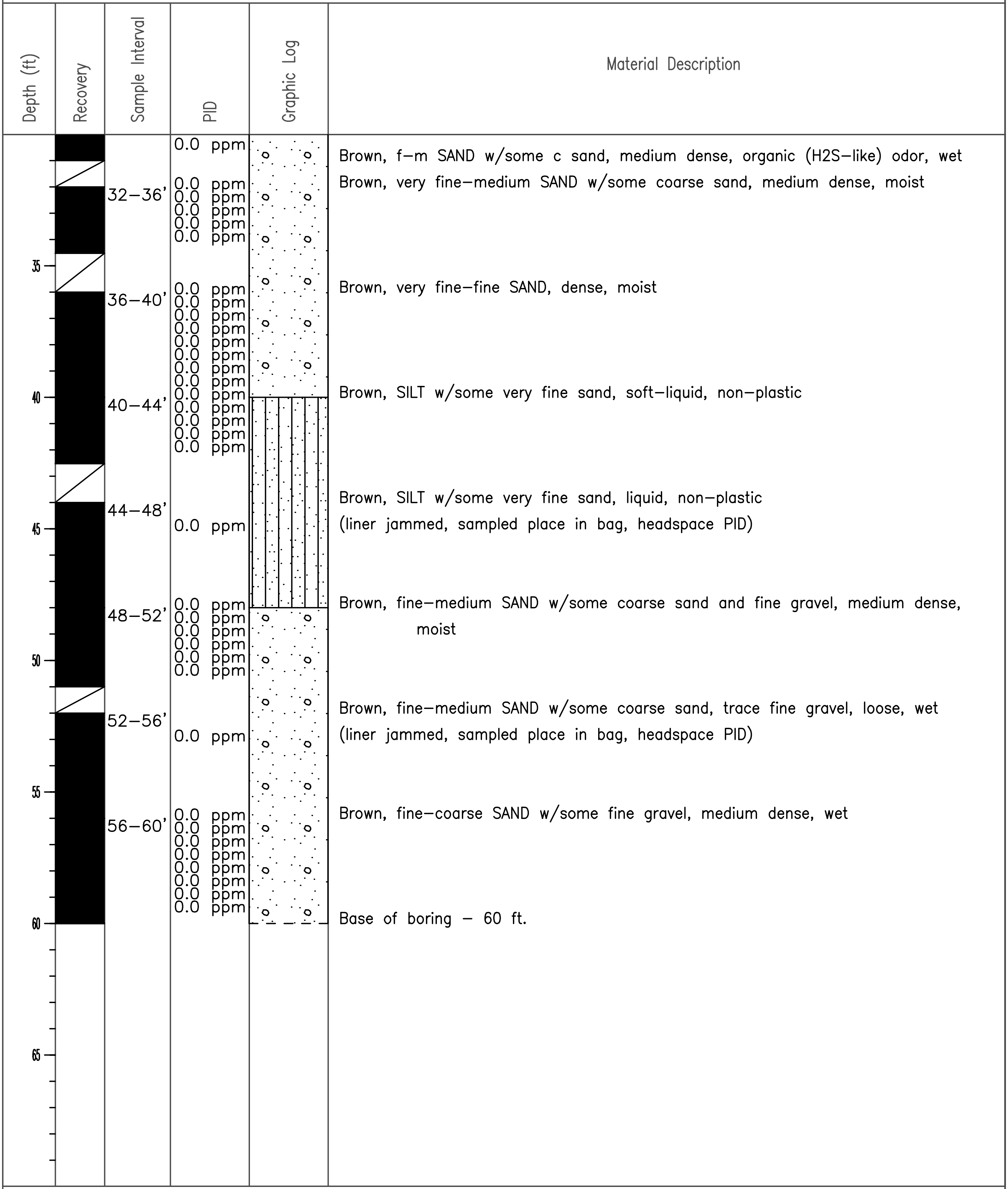
Borehole Dia.: 2.00in





Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–5'	0.0 ppm		Brown–black, fine–coarse sandy FILL w/fine–coarse gravel, coal, brick, loose, moist
5		5–8'	6.0 ppm 20 ppm		Brown, fine–coarse SAND w/some fine–coarse gravel, brown tar staining, naphthalene–like odor, loose
		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, f–c SAND w/some f gravel, loose, slight naphthalene–like odor, wet Gray, very fine–fine SAND, micaceous, medium dense, moist
10		12–16'	5.0 ppm 0.0 ppm 3.8 ppm 2.5 ppm 3.0 ppm 0.5 ppm 0.0 ppm		Gray, fine–coarse SAND, trace fine gravel, loose, slight naphthalene–like odor, wet Brown, very fine–fine SAND w/silt, medium dense, slight naphthalene–like odor, wet
15		16–20'	0.0 ppm 0.0 ppm 9.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, very fine–fine SAND, micaceous, medium dense, slight naphthalene–like odor, slight organic (H2S–like) odor, moist
20		20–24'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–medium SAND w/some coarse sand, medium dense, organic (H2S–like) odor, moist
25		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, very fine–fine SAND w/some medium–coarse sand, medium dense, moist
		28–32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–medium SAND w/some coarse sand, medium dense, organic (H2S–like) odor, wet

Location: Sag Harbor, New York
Purpose: Soil Boring
Consulting Firm: Dvirka & Bartilucci
Site Id: SHSB-26
Total Depth: 60.00'
Borehole Dia.: 2.00in



Sample Interval	PID	Material Description
	0.0 ppm	Brown, f-m SAND w/some c sand, medium dense, organic (H2S-like) odor, wet
32-36'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, very fine-medium SAND w/some coarse sand, medium dense, moist
36-40'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, very fine-fine SAND, dense, moist
40-44'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, SILT w/some very fine sand, soft-liquid, non-plastic
44-48'	0.0 ppm	Brown, SILT w/some very fine sand, liquid, non-plastic (liner jammed, sampled place in bag, headspace PID)
48-52'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine-medium SAND w/some coarse sand and fine gravel, medium dense, moist
52-56'	0.0 ppm	Brown, fine-medium SAND w/some coarse sand, trace fine gravel, loose, wet (liner jammed, sampled place in bag, headspace PID)
56-60'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine-coarse SAND w/some fine gravel, medium dense, wet
		Base of boring - 60 ft.

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Site Id: SHSB-27

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/11/02 – 04/11/02

Total Depth: 32.00'

Remarks: Sample selected for analysis at 5–7' and 28–30'

Elevation: 6.22'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hand Augered 0–5', Geoprobe 5–32'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–5'	0.0 ppm		Brown, fine–coarse sandy FILL w/some fine–coarse gravel, 3" asphalt w/crushed rock base, loose, moist
5		5–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown–tan, fine–coarse sandy FILL w/some fine–coarse gravel, asphalt w/fine gravel, 2" thick railroad base at 6', loose, wet at 5.5'
10		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine–coarse SAND w/fine–coarse gravel, 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 SAND, brown, very fine–fine SAND, medium dense, organic (H2S–like) odor, wet
		16–20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–very fine SAND, medium dense, organic (H2S–like) odor, 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		Brown, fine–very fine SAND, medium dense, wet
25		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, very fine–fine SAND, medium dense, wet
		28–32'	0.0 ppm		Brown, very fine–medium SAND, medium dense, moist (liner jammed, sample placed in bag, headspace PID)

Location: Sag Harbor, New York

Site Id: SHSB-27

Purpose: Soil Boring

Total Depth: 32.00'

Consulting Firm: Dvirka & Bartilucci

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
				▨	Brown, very fine–medium SAND, medium dense, moist (liner jammed, sample placed in bag, headspace PID); Base of boring – 32 ft.
35					
40					
45					
50					
55					
60					
65					

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Site Id: SHSB-28

Location: Sag Harbor, New York

Purpose: Soil Boring

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

Total Depth: 60.00'

Remarks: Samples selected for analysis at 10-12', 20-22', 38-40', and 58-60'.

Elevation: 6.81'

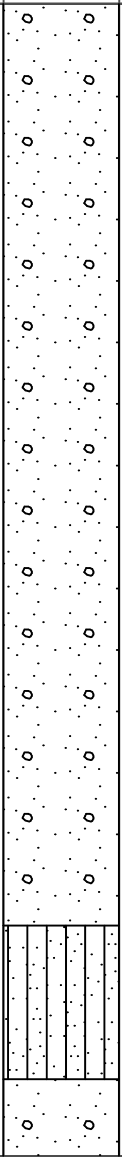
Datum: Mean Sea Level

Logged By: Matthew Bowman

Drilling Method: Hand Augered 0-5', Geoprobe 5-60'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in



Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-5'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-medium SAND w/pebbles, loose, moist Same as above Dark brown, fine-medium SAND w/pebbles, moist
5		5-6'	0.0 ppm 0.0 ppm		Brown, medium SAND w/coarse sand and gravel, wet
		6-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, to reddish brown, m SAND w/pebbles and c sand, loose, wet Tan, medium SAND w/some coarse sand and gravel, loose, wet
		8-10'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Tan-grayish to light-brown, medium-coarse SAND w/some gravel, loose, wet
10		10-12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown-gray brown, medium-coarse SAND w/gravel, wet Brown, fine-medium SAND w/trace peat, faint organic (H2S-like) odor
		12-14'	0.0 ppm 0.0 ppm		Brown, fine-medium SAND, wet
15		14-16'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		16-18'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine SAND w/some medium sand, wet
		18-20'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
20		20-22'	0.0 ppm 0.0 ppm 0.0 ppm		Light brown, silty fine SAND w/some small mica particles, wet
		22-24'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
25		24-26'	0.0 ppm 0.0 ppm		Light brown, fine SAND w/some medium sand and trace small mica particles, wet
		26-28'	0.0 ppm 0.0 ppm		Same as above
		28-30'	0.0 ppm 0.0 ppm		Tan, fine SAND w/trace medium sand, wet

Location: Sag Harbor, New York

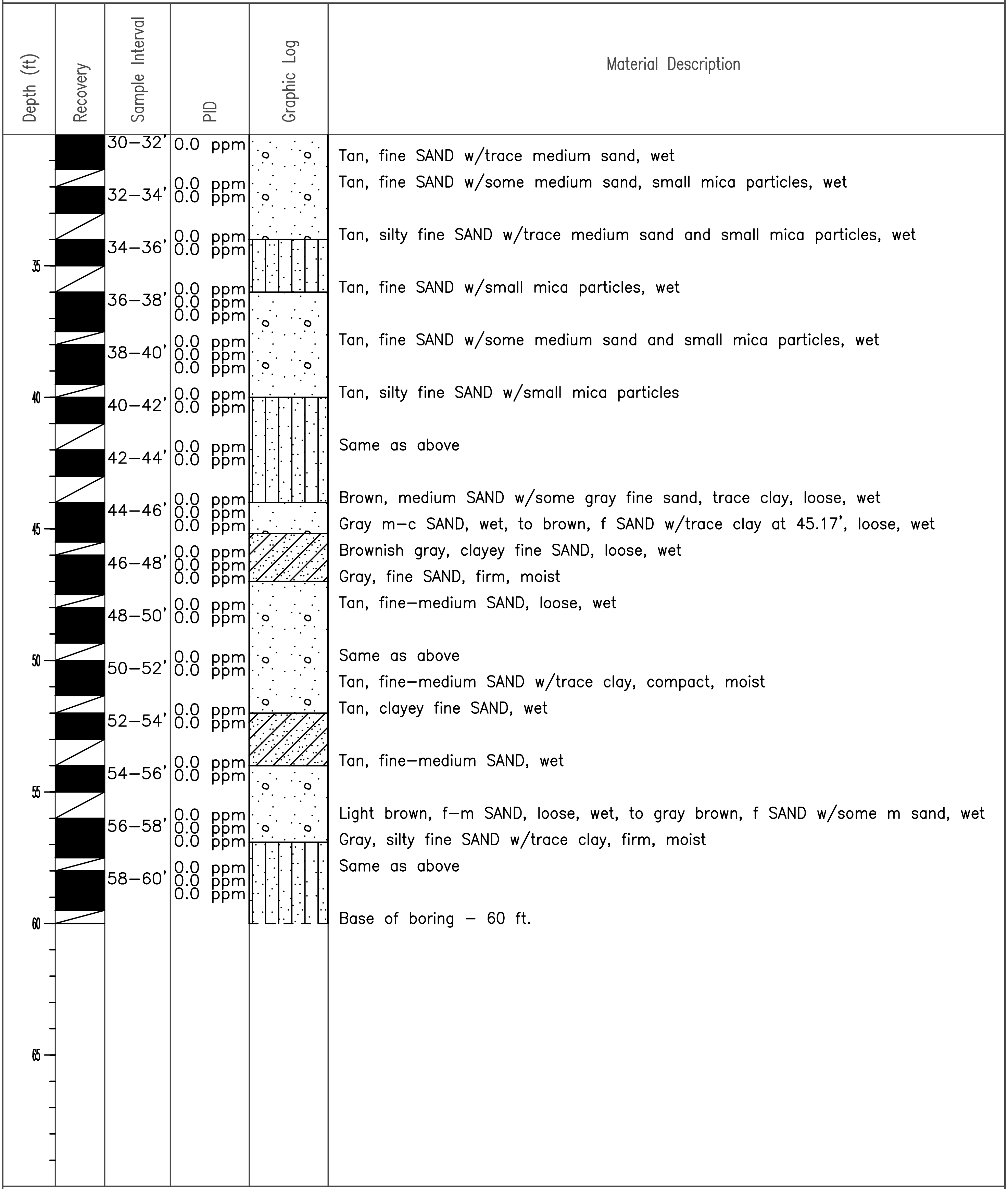
Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-28

Total Depth: 60.00'

Borehole Dia.: 2.00in



Sample Interval	PID	Material Description
30–32'	0.0 ppm	Tan, fine SAND w/trace medium sand, wet
32–34'	0.0 ppm 0.0 ppm	Tan, fine SAND w/some medium sand, small mica particles, wet
34–36'	0.0 ppm 0.0 ppm	Tan, silty fine SAND w/trace medium sand and small mica particles, wet
36–38'	0.0 ppm 0.0 ppm 0.0 ppm	Tan, fine SAND w/small mica particles, wet
38–40'	0.0 ppm 0.0 ppm 0.0 ppm	Tan, fine SAND w/some medium sand and small mica particles, wet
40–42'	0.0 ppm 0.0 ppm	Tan, silty fine SAND w/small mica particles
42–44'	0.0 ppm 0.0 ppm	Same as above
44–46'	0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium SAND w/some gray fine sand, trace clay, loose, wet Gray m–c SAND, wet, to brown, f SAND w/trace clay at 45.17', loose, wet
46–48'	0.0 ppm 0.0 ppm 0.0 ppm	Brownish gray, clayey fine SAND, loose, wet Gray, fine SAND, firm, moist
48–50'	0.0 ppm 0.0 ppm	Tan, fine–medium SAND, loose, wet
50–52'	0.0 ppm 0.0 ppm	Same as above Tan, fine–medium SAND w/trace clay, compact, moist
52–54'	0.0 ppm 0.0 ppm	Tan, clayey fine SAND, wet
54–56'	0.0 ppm 0.0 ppm	Tan, fine–medium SAND, wet
56–58'	0.0 ppm 0.0 ppm 0.0 ppm	Light brown, f–m SAND, loose, wet, to gray brown, f SAND w/some m sand, wet Gray, silty fine SAND w/trace clay, firm, moist
58–60'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above
		Base of boring – 60 ft.

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Site Id: SHSB-29

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/11/02 - 04/11/02

Total Depth: 60.00'

Remarks: Samples selected for analysis at 5-7', 12-14', 30-32', and 58-60'.

Elevation: 4.33'

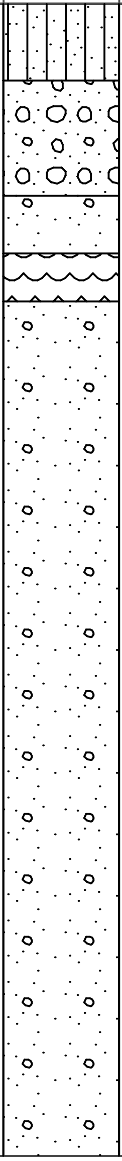
Datum: Mean Sea Level

Logged By: Matthew Bowman

Drilling Method: Hand Augered 0-5', Geoprobe 5-60'

Contractor: Zebra Environmental

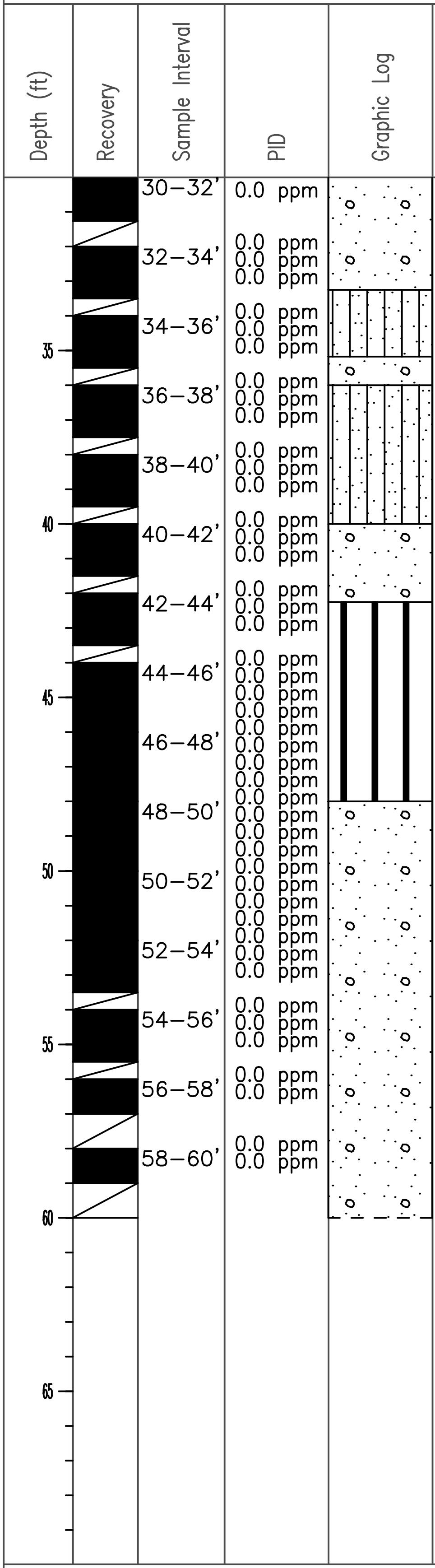
Borehole Dia.: 2.00in



Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-5'	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		Dark brown, f-m SAND w/some silt, pebbles, and wood fragments, wet at 1.5' Dark brown, gravelly fine-medium SAND w/wood fragments, loose, slight staining, faint naphthalene-like odor, sheen, wet Same as above
5		5-8'	56.1 ppm 35.3 ppm 82.1 ppm 6.3 ppm 2.4 ppm 0.2 ppm		Black, fine-medium SAND, some free NAPL, moderate staining, moderate naphthalene-like odor, to brown, PEAT, soft, moist, organic (H2S-like) odor, to fine sand, faint organic (H2S-like) odor
		8-10'	0.0 ppm 0.0 ppm		Brown, fine SAND, slight staining on outside of sample, faint naphthalene-like and organic (H2S-like) odors, wet
10		10-12'	0.0 ppm 0.0 ppm		Same as above
		12-14'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine SAND w/trace coarse sand and small gravel, faint organic (H2S-like) odor, wet
15		14-16'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		16-18'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-medium SAND, wet
		18-20'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, very fine-medium SAND w/some coarse sand
20		20-22'	0.0 ppm 0.0 ppm		Tan, very fine-medium SAND, wet
		22-24'	0.0 ppm 0.0 ppm		Tan, very fine-medium SAND, slight mottling, wet
25		24-26'	0.0 ppm 0.0 ppm		Same as above
		26-28'	0.0 ppm 0.0 ppm		Same as above, to light tan, fine-medium SAND, wet
		28-30'	0.0 ppm 0.0 ppm		Tan, fine-medium SAND, wet Same as above, to tan, very f-f SAND w/some medium sand at 30.25', wet

Location: Sag Harbor, New York
Purpose: Soil Boring
Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-29
Total Depth: 60.00'
Borehole Dia.: 2.00in



Sample Interval	PID
30-32'	0.0 ppm
32-34'	0.0 ppm 0.0 ppm 0.0 ppm
34-36'	0.0 ppm 0.0 ppm 0.0 ppm
36-38'	0.0 ppm 0.0 ppm 0.0 ppm
38-40'	0.0 ppm 0.0 ppm 0.0 ppm
40-42'	0.0 ppm 0.0 ppm 0.0 ppm
42-44'	0.0 ppm 0.0 ppm 0.0 ppm
44-46'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm
46-48'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm
48-50'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm
50-52'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm
52-54'	0.0 ppm 0.0 ppm 0.0 ppm
54-56'	0.0 ppm 0.0 ppm 0.0 ppm
56-58'	0.0 ppm 0.0 ppm
58-60'	0.0 ppm 0.0 ppm

Material Description

Tan, fine-medium SAND, wet, to tan, very f-f SAND w/some m sand, wet
Tan, fine-medium SAND, wet
Tan, SILT w/very fine sand, firm, wet
Same as above
Tan, fine-medium SAND, wet
Tan, silty very fine-fine SAND, wet
Same as above
Light reddish tan, very fine-fine SAND, slight oxidation, wet
Same as above, to lt br, SILT w/some f sand and trace clay, loose, wet
Same as above w/trace light orange oxidized fine sand
Tan, SILT w/some fine sand and some oxidized fine sand, very loose, wet
Tan, medium-coarse SAND w/round-slightly round pebbles, mica particles
Tan, medium SAND, wet
Reddish brown, fine-medium SAND w/some gravel
Tan, fine SAND w/some coarse sand, loose, wet
Same as above
Light orange tan, medium-coarse SAND w/gravel, loose, wet
Same as above
Tan, fine-medium SAND w/some lightly oxidized medium sand
Base of boring - 60 ft.

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Site Id: SHSB-30

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/01/02 – 04/01/02

Total Depth: 30.00'

Remarks: Samples selected for analysis at 5–6', and 28–30'.

Elevation: 4.44'

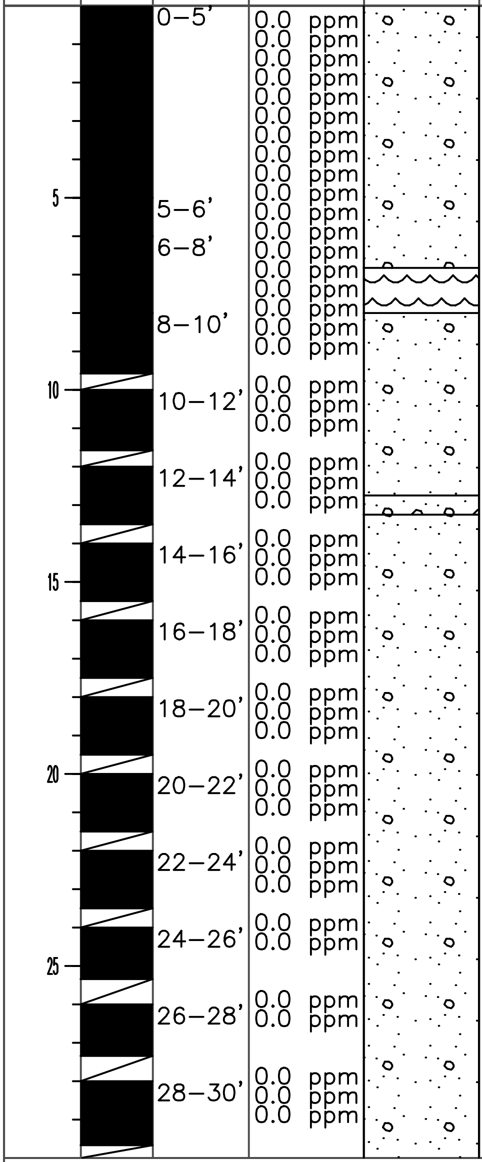
Datum: Mean Sea Level

Logged By: Matthew Bowman

Drilling Method: Hand Augered 0–5', Geoprobe 5–30'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in



Sample Interval	PID	Material Description
0–5'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine–medium SAND w/pebbles, some cobbles, dry Dark brown, medium SAND w/pebbles, wet at 2.5' Grayish brown, medium SAND w/few pebbles, wet Same as above
5–6'	0.0 ppm 0.0 ppm	Gray brown, fine–medium SAND w/some gravel, wet
6–8'	0.0 ppm 0.0 ppm 0.0 ppm	Br, m sandy PEAT, to dk br, clayey PEAT, slight organic (H2S–like) odor Brown, medium SAND w/some fine sand and peat
8–10'	0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine SAND w/some medium SAND and trace peat, wet
10–12'	0.0 ppm 0.0 ppm 0.0 ppm	Light brown, fine–medium SAND, wet
12–14'	0.0 ppm 0.0 ppm 0.0 ppm	Light brown, f–m SAND w/some gravel, 3" sandy gravel layer at 12.75' Light brown, fine SAND w/some medium sand, wet
14–16'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above
16–18'	0.0 ppm 0.0 ppm 0.0 ppm	Light brown, fine–medium SAND, wet
18–20'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above
20–22'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above Light brown, medium–coarse SAND
22–24'	0.0 ppm 0.0 ppm 0.0 ppm	Light red, medium SAND w/some fine sand, wet, to tan, fine SAND, wet Grayish brown, fine SAND
24–26'	0.0 ppm 0.0 ppm	Grayish brown, fine SAND w/some medium sand and mica particles, wet
26–28'	0.0 ppm 0.0 ppm	Grayish brown, fine SAND w/some medium sand and mica particles, trace clay, wet
28–30'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above Base of boring – 30 ft.

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Site Id: SHSB-31

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 03/28/02 – 03/28/02

Total Depth: 30.00'

Remarks: Samples selected for analysis at 4–6', 16–18', and 28–30'.

Elevation: 3.47'

Datum: Mean Sea Level

Logged By: Matthew Bowman

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'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, medium–coarse sandy FILL w/silt and pebbles, wet at 2' Brown, m–c sandy FILL w/some silt and pebbles, brick fragment at 3' Tan, fine–medium SAND w/few pebbles, wet
5		4–6'	28.5 ppm 16.4 ppm 29 ppm		Black, f–m SAND, staining, some free NAPL, naphthalene–like odor, wet Fine sandy PEAT at 4.42', some staining, naphthalene–like odor
		6–8'	34 ppm 28.8 ppm 54.1 ppm		Brown, PEAT, soft, moderate staining, naphthalene–like odor, moist Br, PEAT, naphthalene–like and organic (H2S–like) odors, to tan, f–m SAND
		8–10'	7.9 ppm 1.4 ppm 4.6 ppm		Reddish brown, fine–medium SAND w/some silt, soft, faint naphthalene–like odor, wet
10		10–12'	1.9 ppm 5.7 ppm 8.6 ppm		Same as above
		12–14'	12.2 ppm 0.0 ppm 0.0 ppm		Brown, fine–medium SAND w/some gravel, faint naphthalene–like odor, wet
15		14–16'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, medium SAND w/some gravel, faint naphthalene–like odor, wet
		16–18'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–medium SAND w/mica particles, wet
		18–20'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
20		20–22'	0.0 ppm 0.0 ppm 0.0 ppm		Tan, medium–coarse SAND w/some fine SAND and mica particles, wet Tan, medium SAND w/mica particles from 20.83'–21.25', wet
		22–24'	0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine–medium SAND w/some mica particles, wet
25		24–26'	0.0 ppm 0.0 ppm		Tan, fine–medium SAND, wet
		26–28'	0.0 ppm 0.0 ppm		Gray, fine SAND w/some medium sand, wet
		28–30'	0.0 ppm 0.0 ppm 0.0 ppm		Gray, fine SAND w/some medium sand, to gray, silty fine SAND, wet Base of boring – 30 ft.

Dvirka and Bartilucci
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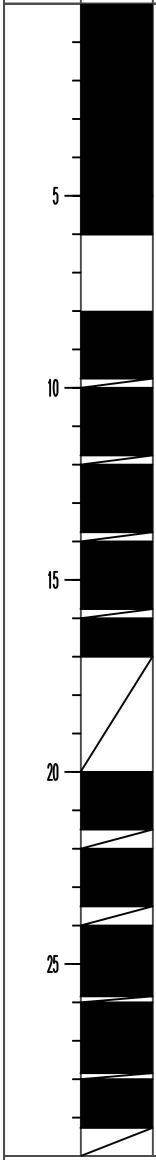
Site Id: SHSB-32
Location: Sag Harbor, New York
Purpose: Soil Boring
Date(s): 04/15/02 - 04/15/02
Total Depth: 32.00'
Remarks: Samples selected for analysis at 5-7', and 16-20'.

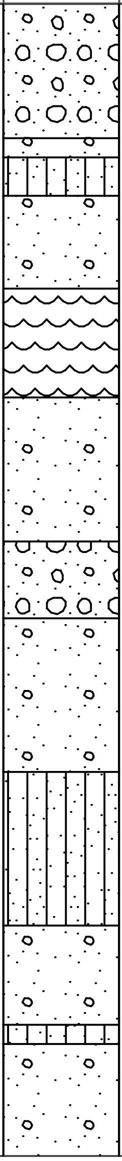
Elevation: 4.62'
Datum: Mean Sea Level
Logged By: Matthew Bowman
Drilling Method: Hand Augered 0-5', Geoprobe 5-32'
Contractor: Zebra Environmental
Borehole Dia.: 2.00in

Depth (ft) / Recovery



Sample Interval	PID
0-5'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 8.0 ppm 16.3 ppm 57.6 ppm
5-8'	117 ppm 52.3 ppm 42 ppm 23.5 ppm 54.1 ppm 290 ppm
8-10'	189 ppm 157 ppm
10-12'	10 ppm 15.5 ppm 60 ppm
12-14'	33.4 ppm 38.9 ppm 26.6 ppm
14-16'	2.7 ppm 22.4 ppm
16-18'	0.0 ppm
20-22'	0.0 ppm 0.0 ppm 0.0 ppm
22-24'	0.0 ppm 0.0 ppm 0.0 ppm
24-26'	0.0 ppm 0.0 ppm 0.0 ppm
26-28'	4.5 ppm 0.0 ppm 0.0 ppm
28-30'	0.0 ppm 0.0 ppm

Graphic Log



Material Description

Brown, gravelly fine-medium SAND, loose, moist
Brown, gravelly fine-coarse SAND w/large pebbles and small cobbles, wet
Tan, fine-medium SAND w/some small gravel
Dark brown, fine-medium SAND w/some silt and gravel, some free NAPL, moderate staining, faint naphthalene-like odor, sheen, wet
Dk br, f-m SAND w/some gravel, mod-heavy staining w/blebs of free NAPL, wood chips from 6.25-6.58', moderate naphthalene-like odor, wet
Gray, f-m SAND, faint naphthalene and organic (H2S-like) odors, wet
Brown, PEAT from 7.42-8', soft, strong organic (H2S-like) odor
Dark brown, PEAT from 8-10', soft, strong organic (H2S-like) odor, moist
Same as above from 10-10.25'
Reddish brown, fine SAND, moderate staining and sheen from 11.5-12', naphthalene-like odor, wet
Reddish brown, fine-medium SAND, band of tar from 13.25-13.58', sheen, light naphthalene and organic (H2S-like) odors, wet
Tan, gravelly fine-medium SAND, slight staining and naphthalene-like odor from 14-15', faint organic (H2S-like) odor, wet
Tan, f-m SAND from 16-20', faint organic (H2S-like) odor, wet
(liner jammed, sample placed in bag, headspace PID)
Tan, silty fine SAND, faint organic (H2S-like) odor, wet

Same as above
Tan, fine-medium SAND, faint organic (H2S-like) odor, wet
Tan, fine SAND, faint organic (H2S-like) odor, wet
Same as above
Gray-tan, silty vf SAND w/trace clay, firm, faint organic (H2S-like) odor
Tan, very fine-fine SAND, wet
Tan, very fine-fine SAND w/some medium sand, wet

Location: Sag Harbor, New York

Site Id: SHSB-32

Purpose: Soil Boring

Total Depth: 32.00'

Consulting Firm: Dvirka & Bartilucci

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
	■	30-32'	0.0 ppm	⁘	Tan, very fine-fine SAND w/some medium sand, wet Base of boring - 32 ft.
35					
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-33

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/15/02 – 04/15/02

Total Depth: 32.00'

Remarks: Samples selected for analysis at 5.5–7.5', and 12–14'.

Elevation: 4.41'

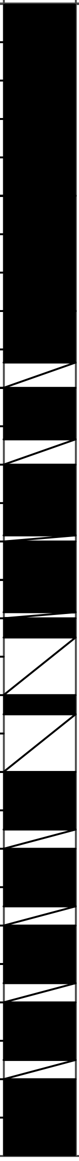
Datum: Mean Sea Level

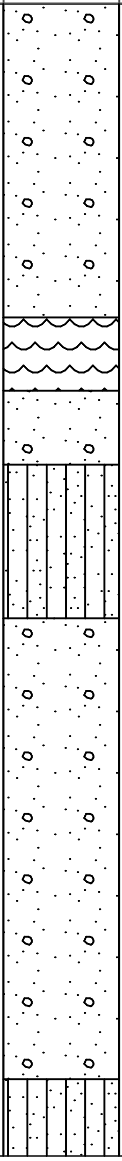
Logged By: Matthew Bowman

Drilling Method: Hand Augered 0–5', Geoprobe 5–32'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in





Depth (ft)	Sample Interval	PID	Material Description
	0–5'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 4.0 ppm 8.1 ppm	Brown–dark brown, fine–coarse SAND w/pebbles, wet at 2' Same as above from 2–3', to dark brown–black, fine–medium SAND w/pebbles, slight staining, naphthalene–like odor, wet Black, fine–medium SAND, moderate staining, naphthalene–like odor, sheen
5	5–8'	46.7 ppm 57.7 ppm 59.1 ppm 97.3 ppm 15.1 ppm 7.0 ppm	Black, fine–medium SAND, heavy staining, naphthalene–like odor, wet Gray, fine–medium SAND from 7.33–8', band of moderate staining, naphthalene and oraganic (H2S–like) odors, wet
	8–10'	215 ppm 94 ppm	Same as above from 8–8.17' Brown, PEAT, soft, heavy organic (H2S–like) odor, moist
10	10–12'	136 ppm 186 ppm	Same as above Brown, fine–medium SAND, organic (H2S–like) odor, wet
	12–14'	2.6 ppm 39 ppm 14.2 ppm	Dark reddish brown, silty fine SAND, loose, mild organic (H2S–like) odor, wet
15	14–16'	53.6 ppm 29.7 ppm 15 ppm	Reddish brown, silty fine SAND, organic (H2S–like) odor Tan, silty f SAND w/some c sand, firm, faint organic (H2S–like) odor
	16–18'	0.0 ppm	Tan, fine–medium SAND, wet (liner jammed, sample placed in bag, headspace PID)
	18–20'	0.0 ppm	Same as above (liner jammed, sample placed in bag, headspace PID)
20	20–22'	15.6 ppm 3.4 ppm 0.0 ppm	Tan, fine–medium SAND, organic (H2S–like) odor, wet (liner jammed, sample placed in bag, headspace PID)
	22–24'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above
25	24–26'	0.0 ppm 0.0 ppm 0.0 ppm	Tan, fine–medium SAND, wet
	26–28'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above
	28–30'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Tan, fine–medium SAND w/some silt, wet Same as above

Location: Sag Harbor, New York

Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB–33

Total Depth: 32.00'

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
	■	30–32'	0.0 ppm 0.0 ppm 0.0 ppm	▨	Tan, fine–medium SAND w/some silt, wet Base of boring – 32 ft.
35					
40					
45					
50					
55					
60					
65					

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CONSULTING ENGINEERS
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Site Id: SHSB-34

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/09/02 – 04/09/02

Total Depth: 30.00'

Remarks: Samples selected for analysis at 8–10', and 28–30'.

Elevation: 5.03'

Datum: Mean Sea Level

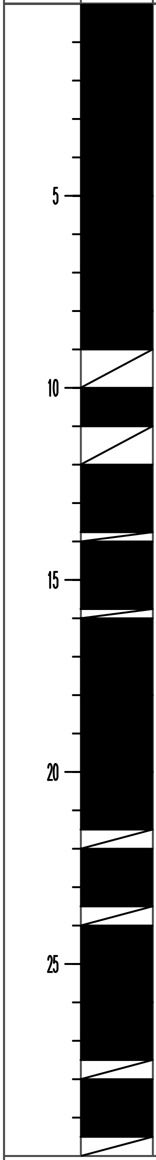
Logged By: Matthew Bowman

Drilling Method: Hand Augered 0–5', Geoprobe 5–30'

Contractor: Zebra Environmental

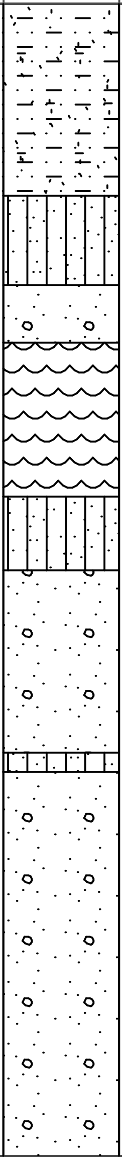
Borehole Dia.: 2.00in

Depth (ft) | Recovery



Sample Interval	PID
0–5'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm
5–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm
8–10'	0.0 ppm
10–12'	0.4 ppm 29.1 ppm
12–14'	12.8 ppm 5.3 ppm 0.8 ppm
14–16'	0.0 ppm 0.0 ppm 0.0 ppm
16–18'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm
18–20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm
20–22'	0.0 ppm 0.0 ppm 0.0 ppm
22–24'	0.0 ppm 0.0 ppm 0.0 ppm
24–26'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm
26–28'	0.0 ppm 0.0 ppm 0.0 ppm
28–30'	0.0 ppm 0.0 ppm 0.0 ppm

Graphic Log



Material Description

Tan, m–c sandy FILL w/some gravel, 4" asphalt layer at grade, moist

Dark brown, fine–medium sandy FILL w/some gravel at 2', silt and rock/brick fragments, trace peat and clay, wet

Brown, medium–coarse sandy FILL w/some fine sand, wet

Brown, gravelly m sandy FILL w/some c sand and brick fragments, wet

Brown–dark brown, gravelly fine–medium SAND w/some coarse sand and silt,

Gray, fine–medium SAND, wet

Same as above w/faint organic (H2S–like) odor

Brown, PEAT, soft, organic (H2S–like) odor, moist

Brown, PEAT, soft, organic (H2S–like) odor

Same as above

Reddish brown, silty fine SAND w/trace peat and medium sand, faint organic (H2S–like) odor, wet

Same as above

Br, f SAND w/some m sand and pebbles, faint organic (H2S–like) odor, wet

Brown, fine–medium SAND w/trace silt and a few pebbles, wet

Same as above

Tan, silty very fine–fine SAND, firm, moist

Brown, fine–medium SAND, wet

Same as above w/3" light reddish brown band of fine–medium sand

Tan, very fine SAND w/some medium sand, 2" reddish, medium–coarse sand/pebble layer at 25'

Tan–reddish tan, very fine–medium SAND w/few pebbles

Same as above

Base of boring – 30 ft.

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Site Id: SHSB-35

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/10/02 - 04/10/02

Total Depth: 32.00'

Remarks: Samples selected for analysis at 8-10', and 28-30'.

Elevation: 6.33'

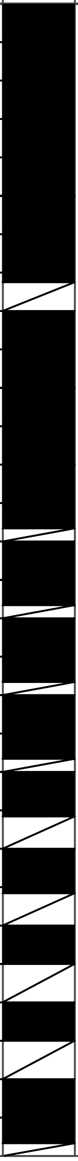
Datum: Mean Sea Level

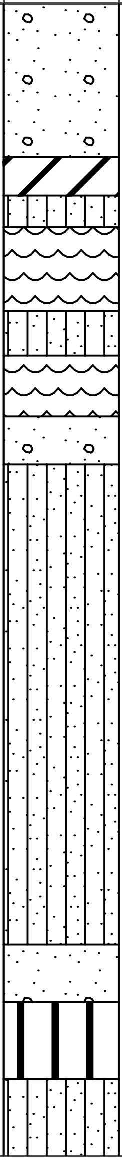
Logged By: Matthew Bowman

Drilling Method: Hand Augered 0-5', Geoprobe 5-32'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in





Depth (ft)	Sample Interval	PID	Material Description
	0-5'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine-medium SAND w/some pebbles and organic matter in top 3" Brown, fine-medium SAND w/some organic matter Gray black, silty CLAY, soft, moist Brown-dark brown, silty fine SAND w/some pebbles, wet
5	5-8'	0.0 ppm 0.0 ppm 0.0 ppm	Dark brown, fine sandy PEAT w/trace clay, soft, moist Dark brown, silty fine SAND w/clay, pebbles, and organic matter, wet
	8-10'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Dk br, clayey PEAT w/some f sand, soft, organic (H2S-like) odor, moist Same as above
10	10-12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, very fine-fine SAND w/some organic matter, wet Tan, silty fine SAND, wet
	12-14'	0.0 ppm 0.0 ppm	Tan, silty fine SAND w/few small pebbles, wet
15	14-16'	0.0 ppm 0.0 ppm 0.0 ppm	Tan, silty very fine SAND, wet
	16-18'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above
	18-20'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above
20	20-22'	0.0 ppm 0.0 ppm	Tan, silty fine SAND, wet
	22-24'	0.0 ppm 0.0 ppm	Tan, silty fine SAND, loose, wet
25	24-26'	0.0 ppm 0.0 ppm	Light orange-tan, fine-medium SAND, loose, wet Gray, SILT w/some fine sand and clay, firm, moist
	26-28'	0.0 ppm 0.0 ppm	Tan, silty fine SAND, loose, wet
	28-30'	0.0 ppm 0.0 ppm 0.0 ppm	Red, fine SAND, wet

Location: Sag Harbor, New York

Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-35

Total Depth: 32.00'

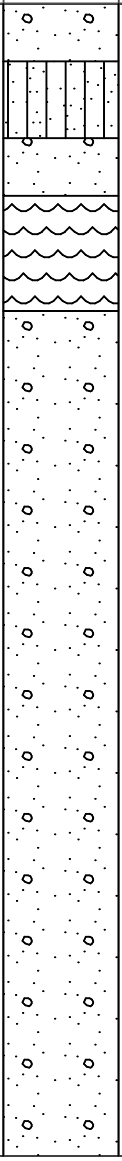
Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30-32'	0.0 ppm 0.0 ppm		Tan, SILT, wet, to tan, silty fine SAND, wet Base of boring - 32 ft.
35					
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-36
Location: Sag Harbor, New York
Purpose: Soil Boring
Date(s): 03/29/02 - 03/29/02
Total Depth: 30.00'
Remarks: Samples selected for analysis at 8-10', and 14-16'.

Elevation: 3.22'
Datum: Mean Sea Level
Logged By: Matthew Bowman
Drilling Method: Hand Augered 0-5', Geoprobe 5-30'
Contractor: Zebra Environmental
Borehole Dia.: 2.00in



Depth (ft)	Sample Interval	PID	Material Description
	0-5'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Dark brown, medium SAND w/some small gravel, trace clay Black, silty fine-medium SAND w/some coarse sand and small pebbles Grayish brown, fine-medium SAND w/some pebbles Brown, medium SAND w/some PEAT, soft, wet
5	5-6'	0.0 ppm 0.0 ppm	Same as above to 6.33'
	6-8'	0.0 ppm 0.0 ppm 0.0 ppm 3.2 ppm	Brown-dark brown, PEAT, soft, organic (H2S-like) odor, moist Tan, fine-medium SAND, organic (H2S-like) odor, wet
	8-10'	0.5 ppm 1.7 ppm	Reddish brown, fine-medium SAND, organic (H2S-like) odor, wet Same as above
10	10-12'	2.6 ppm 0.0 ppm 2.1 ppm	Same as above
	12-14'	5.3 ppm 0.0 ppm 0.0 ppm	Brown, medium SAND w/some pebbles, slight organic (H2S-like) odor, wet Brown, medium SAND, wet
15	14-16'	0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine-medium SAND, wet
	16-18'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above
	18-20'	0.0 ppm 0.0 ppm 0.0 ppm	Tan, fine SAND w/some medium sand, mica particles Same as above
20	20-22'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above
	22-24'	0.0 ppm 0.0 ppm 0.0 ppm	Tan, fine-medium SAND, wet
25	24-26'	0.0 ppm 0.0 ppm 0.0 ppm	Tan, medium SAND w/some fine sand, wet
	26-28'	0.0 ppm 0.0 ppm 0.0 ppm	Tan, medium SAND, wet
	28-30'	0.0 ppm 0.0 ppm 0.0 ppm	Base of boring - 30 ft.

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Site Id: SHSB-37

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/12/02 - 04/12/02

Total Depth: 32.00'

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

Elevation: 3.96'

Datum: Mean Sea Level

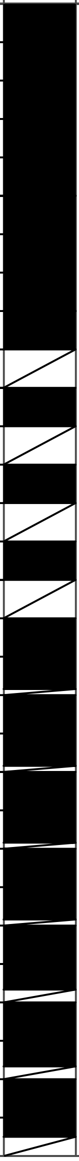
Logged By: Matthew Bowman

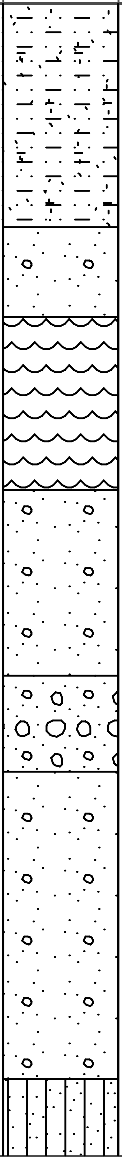
Drilling Method: Hand Augered 0-5', Geoprobe 5-32'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-5'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, medium-coarse sandy FILL w/some silt, organic matter, cylindrical beads (2mm x 2mm) from 1.5-2', moist Brown, FILL from 2-4', gravelly fine-coarse sand, wet Same as above Brown, FILL, fine-medium SAND w/some brown "beads", wet
5		5-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine-medium SAND, wood fragments, light-moderate staining from 7.25'-7.75', naphthalene-like odor, wet Tan, fine-medium SAND, wet
		8-10'	0.0 ppm		Brown, PEAT, soft, organic (H2S-like) odor, moist Same as above
10		10-12'	0.0 ppm 0.0 ppm		Same as above
		12-14'	0.0 ppm 0.1 ppm		Reddish br, oxidized f SAND, firm, moist, faint organic (H2S-like) odor
15		14-16'	0.0 ppm 11.9 ppm		
		16-18'	6.4 ppm 12.8 ppm 4.1 ppm		Same as above w/rock fragments from 17.5-18'
		18-20'	0.2 ppm 0.0 ppm 0.0 ppm		Tan, gravelly fine-medium SAND, faint organic (H2S-like) odor, wet
20		20-22'	0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine-medium SAND, wet
		22-24'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
25		24-26'	0.0 ppm 0.0 ppm 0.0 ppm		Tan, very fine-fine SAND w/some medium sand, firm, wet
		26-28'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		28-30'	0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine-medium SAND w/some silt, loose Same as above





Location: Sag Harbor, New York

Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB–37

Total Depth: 32.00'

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
	■	30–32'	0.0 ppm 0.0 ppm	▨	Tan, fine–medium SAND w/some silt, loose Base of boring – 32 ft.
35					
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-38

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/08/02 – 04/08/02

Total Depth: 32.00'

Remarks: Samples selected for analysis at 8-10', 12-14', and 22-24'.

Elevation: 4.66'

Datum: Mean Sea Level

Logged By: Matthew Bowman

Drilling Method: Hand Augered 0-5', Geoprobe 5-32'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-5'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		2" asphalt layer to brown, m sandy FILL w/some coarse sand and pebbles Same as above Dark brown, medium SAND w/some coarse sand and gravel/pebbles, wet Brown, fine-medium SAND, w/some coarse sand and pebbles, wet
5		5-8'	0.0 ppm 5.4 ppm 3.2 ppm		Dark brown, medium SAND w/some pebbles, slight staining and naphthalene-like odor, sheen Brown, medium SAND w/pebbles, slight naphthalene-like odor
		8-10'	156 ppm 10.4 ppm		Dark brown, medium SAND, moderate staining, strong naphthalene-like odor, Brown, clayey PEAT, soft, naphthalene-like odor, moist
10		10-12'	44.6 ppm 15.4 ppm		Dk br, PEAT, soft, organic (H2S-like) odor, slight naphthalene-like odor
		12-14'	71.5 ppm 16.7 ppm 6.3 ppm		Same as above Dark brown, silty f-m SAND, slight staining, organic (H2S-like) odor, wet
15		14-16'	9.6 ppm 16.8 ppm 12.7 ppm		Reddish brown, fine-medium SAND, faint organic (H2S-like) odor, wet
		16-18'	4.1 ppm 7.5 ppm 16.4 ppm 11 ppm		Reddish br, silty f SAND w/some gravel, faint organic (H2S-like) odor, wet
		18-20'	15.4 ppm 9.6 ppm 3.3 ppm 2.0 ppm		Lt rd br, f-m SAND w/some c sand and pebbles, faint organic (H2S-like) odor Tan, fine-medium SAND w/some coarse sand
20		20-22'	0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine-medium SAND w/some silt, wet
		22-24'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
25		24-26'	0.0 ppm 0.0 ppm		Tan, silty fine SAND w/some medium sand, wet
		26-28'	0.0 ppm 0.0 ppm		Tan, silty fine SAND w/trace medium sand, wet
		28-30'	0.0 ppm 0.0 ppm		Tan, silty fine-medium SAND, wet

Location: Sag Harbor, New York

Site Id: SHSB-38

Purpose: Soil Boring

Total Depth: 32.00'

Consulting Firm: Dvirka & Bartilucci

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30–32'	0.0 ppm		Tan, silty fine SAND, wet Grayish tan, silty fine SAND w/trace of clay from 30.58–31.16', wet Base of boring – 32 ft.
35					
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-39

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 03/27/02 – 03/27/02

Total Depth: 30.00'

Remarks: Samples selected for analysis at 8–10' and 16–18'.

Elevation: 5.01'

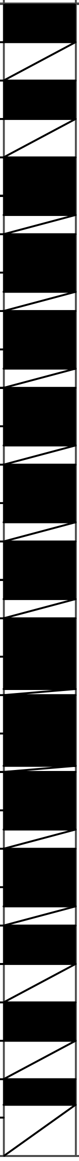
Datum: Mean Sea Level

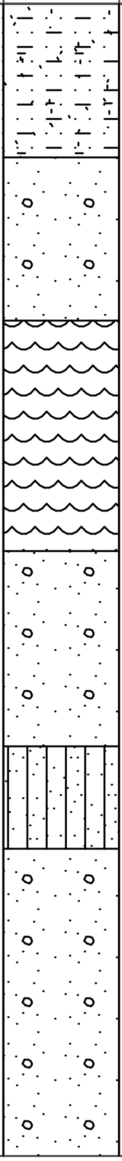
Logged By: Matthew Bowman

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in





Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–2'	0.0 ppm 0.0 ppm		Dark brown, fine–coarse sandy FILL w/rock fragments and pebbles, wet at 1'
		2–4'	0.0 ppm 0.0 ppm		Grayish brown, fine–medium sandy FILL w/pebbles and brick fragments, slight brackish–like odor at 2.5', wet
5		4–6'	0.0 ppm 0.0 ppm 0.0 ppm		Tan, fine–medium SAND w/trace gravel, wet
		6–8'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		8–10'	0.0 ppm 12.6 ppm 11 ppm		Same as above Grayish brown, clayey PEAT, soft, organic (H2S–like) odor, moist
10		10–12'	9.3 ppm 17.4 ppm 21.8 ppm		Same as above Brown, PEAT, soft, organic (H2S–like) odor, dry
		12–14'	2.4 ppm 0.0 ppm 0.0 ppm		Dark reddish brown, f–m SAND w/some peat, faint organic (H2S–like) odor
15		14–16'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above Brown, medium SAND w/some gravel, faint organic (H2S–like) odor
		16–18'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/some gravel, wet
		18–20'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above Brown, silty fine SAND w/trace clay and pebbles
20		20–22'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, medium SAND w/some silt and fine–coarse sand, small pebbles, wet
		22–24'	0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–medium SAND w/some coarse sand and pebbles, wet
25		24–26'	0.0 ppm 0.0 ppm		Same as above
		26–28'	0.0 ppm 0.0 ppm		Same as above Light brown, medium–coarse SAND w/some fine sand and pebbles
		28–30'	0.0 ppm		Tan, gravelly coarse SAND w/pebbles, wet(liner jammed, sample placed in bag, headspace PID); Base of boring – 30 ft.

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Site Id: SHSB-40

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/09/02 – 04/09/02

Total Depth: 32.00'

Remarks: Samples selected for analysis at 8–9', and 13–15'.

Elevation: 6.39'

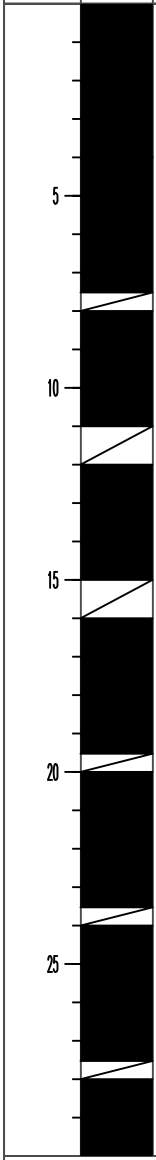
Datum: Mean Sea Level

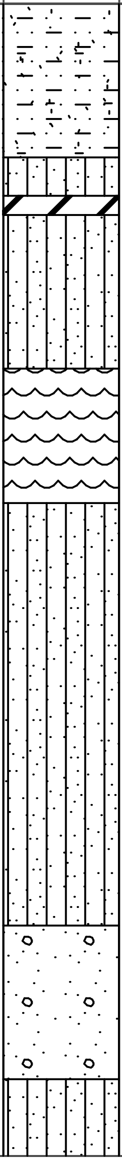
Logged By: Thomas P. Fox

Drilling Method: Hand Augered 0–4', Geoprobe 4–32'

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 0.0 ppm 0.0 ppm 0.0 ppm		Light gray, FILL, gravel, sand, silt Brown, silty sandy FILL w/gravel Gray–black, silty sandy FILL, coal and china fragments, wet at 3.5' Brown gray, SAND and SILT, loose, wet
		4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Black, silty CLAY Brown, medium–coarse SAND, some silt and fine gravel, loose, wet
		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, medium–coarse SAND, some silt, loose, wet Brown, silty PEAT, strong organic (H2S–like) odor, moist
		12–16'	27 ppm 10.5 ppm 24.6 ppm 29.7 ppm 41 ppm 49.6 ppm		Brown, PEAT, strong organic (H2S–like) odor Brown–red, medium SAND w/silt, well sorted, strong organic (H2S–like) odor, loose, wet
		16–20'	0.6 ppm 3.5 ppm 7.5 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown–red, medium SAND w/some gravel and silt, loose, moderate organic (H2S–like) odor, wet
		20–24'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, medium SAND w/some silt, loose, wet
		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Light brown, medium–coarse SAND, trace silt, well sorted, loose, wet
		28–32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Light brown, coarse SAND, some silt, loose, wet

Location: Sag Harbor, New York

Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-40

Total Depth: 32.00'

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
				▨	Light brown, coarse SAND, some silt, loose, wet
					Base of boring – 32 ft.
35					
40					
45					
50					
55					
60					
65					

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Site Id: SHSB-41

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/10/02 – 04/10/02

Total Depth: 32.00'

Remarks: Samples selected for analysis at 9–11', 16–18', and 28–30'.

Elevation: 6.47'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hand Augered 0–5', Geoprobe 5–32'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–5'	0.0 ppm		Br–bk, f–c sandy FILL w/some f–c gravel, asphalt layer from 0–3", coal fragments/powder, some brick, loose, moist Brown, fine–coarse SAND w/some fine–coarse gravel, loose, wet at 4'
5		5–9'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown–dark brown, fine–coarse SAND w/some fine gravel, trace coarse gravel, loose, slight hydrocarbon–like odor from 8.5–9', wet
10		9–12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, PEAT, soft, plastic, slight hydrocarbon–like odor Dark brown, fine–coarse SAND w/some fine gravel, peat lens w/sand from 10–10.25', loose, slight hydrocarbon–like odor, wet
15		12–16'	9.0 ppm 0.0 ppm 36 ppm 18 ppm 14 ppm 0.0 ppm		Dark brown, very fine–medium SAND, medium dense, organic (H2S–like) odor, wet
		16–20'	52 ppm 12 ppm 0.0 ppm 0.0 ppm 6.0 ppm 0.0 ppm 0.0 ppm		Same as above
20		20–24'	2.7 ppm 3.4 ppm 6.8 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
25		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, very fine–medium SAND, trace coarse sand, medium dense, wet
		28–32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, fine–coarse SAND w/some fine gravel, medium dense, wet

Location: Sag Harbor, New York

Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-41

Total Depth: 32.00'

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
	◩			▨	Dark brown, fine-coarse SAND w/some fine gravel, medium dense, wet Base of boring - 32 ft.
35					
40					
45					
50					
55					
60					
65					

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Site Id: SHSB-42

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/15/02 – 04/15/02

Total Depth: 32.00'

Remarks: Samples selected for analysis at 8–10', and 20–22'.

Elevation: 6.25'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Hand Augered 0–5', Geoprobe 5–32'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–5'			Black–tan, silty fine sandy FILL w/some medium–coarse sand, some fine–coarse gravel, brick, coal fragments, slight hydrocarbon–like odor
5		5–8'	75 ppm 100 ppm		Black–olive green, fine SAND w/some medium–coarse sand and fine gravel, loose, hydrocarbon–like odor, moist
10		8–12'	115 ppm 160 ppm 225 ppm 195 ppm 150 ppm 80 ppm		Brown–olive green, fine–coarse SAND w/some fine gravel, slight black–dark brown staining from 9–10', moderate–strong naphthalene–like odor, sheen, wet
15		12–16'	12 ppm 30 ppm 40 ppm 50 ppm 37 ppm		Dark brown, fine SAND, loose, slight naphthalene–like odor, wet
		16–20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, very fine–fine SAND, medium dense, organic (H2S–like) odor, wet
20		20–24'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Dark brown, very fine–fine SAND, loose, slight chemical–like odor, wet
25		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, very fine–medium SAND, loose, wet
		28–32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Light brown, fine–coarse SAND w/some fine gravel, loose, wet

Location: Sag Harbor, New York

Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-42

Total Depth: 32.00'

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
			0.0 ppm		Light brown, fine-coarse SAND w/some fine gravel, loose, wet Base of boring - 32 ft.
35					
40					
45					
50					
55					
60					
65					

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Site Id: SHSB-43

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/16/02 – 04/16/02

Total Depth: 32.00'

Remarks: Samples selected for analysis at 8–10', and 16–18'.

Elevation: 4.80'

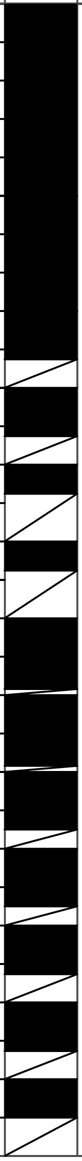
Datum: Mean Sea Level

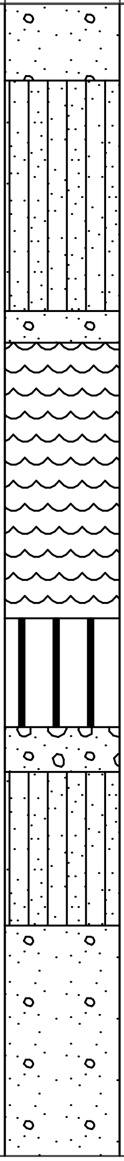
Logged By: Matthew Bowman

Drilling Method: Hand Augered 0–5', Geoprobe 5–32'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in





Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–5'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine–coarse SAND w/pebbles and some organic matter, loose, wet Dark brown, gravelly fine–medium SAND w/some silt, wet Same as above
5		5–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown–dark brown, gravelly medium SAND w/some silt/fine sand, wet
		8–10'	24.4 ppm		Grayish light brown, m SAND w/pebbles, firm, organic (H2S–like) odor, wet Brown, PEAT, pliable, organic (H2S–like) odor, moist
10		10–12'	273 ppm 176 ppm		Brown–dark brown, PEAT, soft, strong organic (H2S–like) odor, moist
		12–14'	185 ppm		Same as above
15		14–16'	413 ppm		Same as above
		16–18'	95.1 ppm 81.3 ppm 7.9 ppm		Dark reddish brown, SILT, oxidized fine–medium sand, strong organic (H2S–like) odor, wet
		18–20'	18.5 ppm 7.5 ppm 2.1 ppm		Same as above Brown, gravelly fine–medium SAND, strong organic (H2S–like) odor, wet
20		20–22'	25.7 ppm 14.2 ppm 6.8 ppm		Light brown, silty fine–medium SAND, mild organic (H2S–like) odor, wet
		22–24'	4.3 ppm 3.8 ppm 0.0 ppm		Same as above
25		24–26'	0.0 ppm 0.0 ppm		Tan, fine SAND w/some medium sand, wet
		26–28'	0.0 ppm 0.0 ppm		Same as above
		28–30'	0.0 ppm 0.0 ppm		Tan, fine–medium SAND w/trace coarse sand, wet

Location: Sag Harbor, New York

Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB–43

Total Depth: 32.00’

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
	■	30–32’	0.0 ppm	▨	Tan, fine–medium SAND w/trace coarse sand, 2” band of slightly oxidized medium sand at 30.75’, wet
					Base of boring – 32 ft.
35					
40					
45					
50					
55					
60					
65					

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Site Id: SHSB-44

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 04/17/02 – 04/17/02

Total Depth: 32.00'

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

Elevation: 4.47'

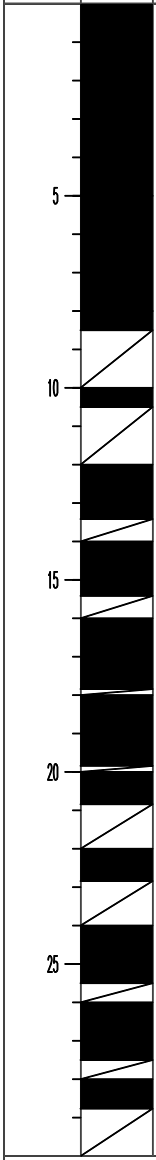
Datum: Mean Sea Level

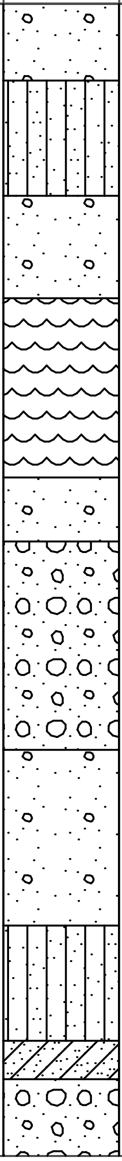
Logged By: Matthew Bowman

Drilling Method: Hand Augered 0–5', Geoprobe 5–32'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in





Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–5'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Br–dark br, f–m SAND w/pebbles and some organic matter, moist, wet at 2' Dark brown, silty fine SAND w/clay, medium sand, and pebbles/stone fragments Same as above
5		5–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine SAND w/some medium–coarse sand and shell fragments
		8–10'			Dark brown, sandy fine PEAT, soft, moist
10		10–12'	0.2 ppm		Dark brown, PEAT, soft, moderate organic (H2S–like) odor, moist
		12–14'	15.2 ppm 7.8 ppm		Dark brown, PEAT, soft, organic (H2S–like) odor, moist Dark reddish brown, fine SAND w/pebbles, organic (H2S–like) odor, wet
15		14–16'	0.6 ppm 2.0 ppm		Reddish brown, gravelly fine SAND w/some medium–coarse sand, organic (H2S–like) odor, wet
		16–18'	0.0 ppm 0.0 ppm 0.0 ppm		Light reddish brown, gravelly fine SAND, loose, faint organic (H2S–like) odor, wet
		18–20'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above Tan, fine–medium SAND, wet
20		20–22'	0.0 ppm		Same as above
		22–24'	0.0 ppm		Same as above
25		24–26'	0.0 ppm 0.0 ppm 0.0 ppm		Light brown, gravelly very fine–medium SAND w/some silt and clay, loose, wet
		26–28'	0.0 ppm 0.0 ppm 0.0 ppm		Same as above Light brown, fine–coarse SAND w/some clay
		28–30'	0.0 ppm		Tan, gravelly fine–coarse SAND, wet Same as above

Location: Sag Harbor, New York

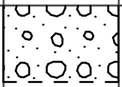
Purpose: Soil Boring

Consulting Firm: Dvirka & Bartilucci

Site Id: SHSB-44

Total Depth: 32.00'

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30–32'	0.0 ppm		Tan, gravelly fine–coarse SAND, wet Base of boring – 32 ft.
35					
40					
45					
50					
55					
60					
65					

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Site Id: SHSB-45
Location: Sag Harbor, New York
Purpose: Soil Boring
Date(s): 05/14/02 – 05/14/02
Total Depth: 2.00'
Remarks: Sample selected for analysis from 0–2'.

Elevation: 7.00'
Datum: Mean Sea Level
Logged By: Matthew Bowman
Drilling Method: Hand Augered
Contractor:
Borehole Dia.: 4.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
	■	0–2'	0.0 ppm 0.0 ppm 0.0 ppm		Tan–brown, silty fine sandy FILL w/some clay, organic matter, glass fragments and plastic, pebbles/stones at bottom Base of boring – 2 ft.
5					
10					
15					
20					
25					

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Site Id: SHSB-46

Location: Sag Harbor, New York

Purpose: Soil Boring

Date(s): 05/14/02 – 05/14/02

Total Depth: 2.00'

Remarks: Sample selected for analysis from 1.25–2.25'.

Elevation: 6.63'

Datum: Mean Sea Level

Logged By: Matthew Bowman

Drilling Method: Hand Augered

Contractor:

Borehole Dia.: 4.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
	■	0–2'	0.0 ppm 0.0 ppm 0.0 ppm	▨	Tan–brown, silty fine sandy FILL w/some clay, organic matter, glass fragments and plastic, pebbles/stones at bottom, small black fragments of coal and clinker at bottom 4"
					Base of boring – 2.25 ft.
5					
10					
15					
20					
25					

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

Site Id: SHMW-10I

Date(s): 05/07/02 – 05/07/02

Datum: Mean Sea Level

Elevation: 5.89'

Measuring Point: 5.69'

Completed Depth: 47.50'

Total Depth: 47.50'

Location: Sag Harbor, New York

Purpose: Monitoring Well, Intermediate

Logged By: Innocent

Drilling Method: Geoprobe

Borehole Dia.: 3.00in

Contractor: Zebra Environmental

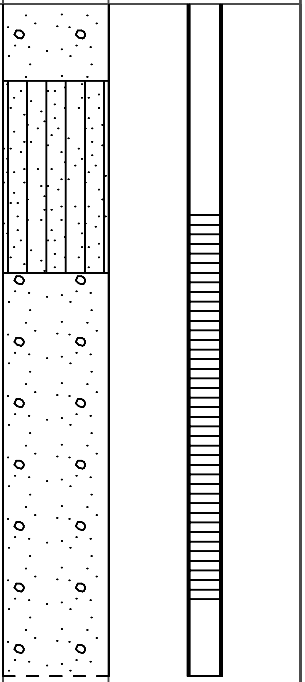
Screens:
type: Slotted size: 0.010in dia: 1.00in fm: 5.00' to: 15.00'
type: Slotted size: 0.010in dia: 1.00in fm: 35.50' to: 45.50'

Remarks: Includes well screens for monitoring wells: SHMW-10S AND SHMW-10I.

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Screen Zones
		0–5'		Brown, medium–coarse, SAND w/little–some gravel, minor trace wood, brick debris		
5		5–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Gray, fine–medium, SAND w/little gravel, some wood debris, loose, decomposing vegetable/organic (H2S–like) odor, wet Gray, fine SAND w/some silt, little clay, decomposing organic (H2S–like) odor		
10		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium–coarse SAND w/trace gravel, trace silt, loose, wet		
15		12–16'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine–medium SAND w/little silt, trace clay, loose, wet		
		16–20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium–coarse SAND, 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	Light brown, medium SAND, well sorted, loose, wet		
25		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Light brown, fine–medium SAND, loose, wet		
		28–32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above		

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-10I
Location: Sag Harbor, New York	Date(s): 05/07/02 - 05/07/02
Purpose: Monitoring Well, Intermediate	Total Depth: 47.50'

Depth (ft)	Recovery	Sample Interval	PID	Material Description
		32-36'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Silty SAND w/some clay, loose, wet
35		36-40'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above Brown, medium-coarse SAND, loose, reddish brown Fe-like staining, wet
40		40-44'	0.0 ppm	Brown, medium SAND, loose, wet
				Base of boring - 44'
45				
50				
55				
60				
65				



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Site Id: SHMW-11I

Date(s): 05/01/02 – 05/01/02

Datum: Mean Sea Level

Elevation: 5.79'

Measuring Point: 5.57'

Completed Depth: 47.00'

Total Depth: 48.00'

Location: Sag Harbor, New York

Purpose: Monitoring Well, Intermediate

Logged By: Matthew Bowman

Drilling Method: 4 1/4" Hollow Stem Auger

Borehole Dia.: 4.25in

Contractor: Zebra Environmental

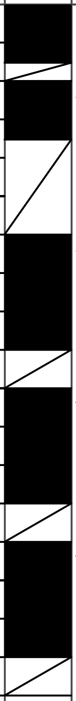
Screens:
type: Slotted size: 0.010in dia: 1.00in fm: 3.50' to: 13.50'
type: Slotted size: 0.010in dia: 1.00in fm: 35.00' to: 45.00'

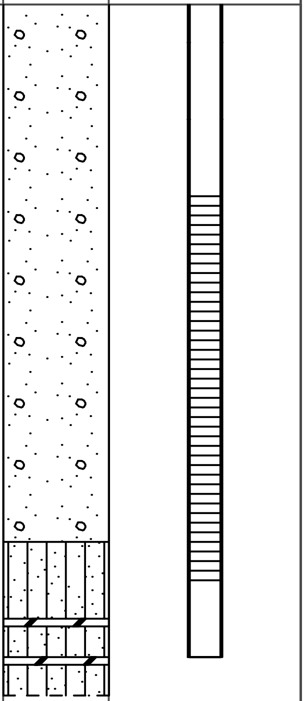
Remarks: Includes well screens for monitoring wells: SHMW-11S and SHMW-11I.

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Screen Zones
		0–4'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Asphalt paving over brown, coarse, sandy FILL w/coarse gravel concrete/brick debris, loose, moist-dry		
5		4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, coarse, sandy FILL w/some gravel, glass, concrete debris, loose, wet		
10		8–12'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, very fine SAND w/little silt, trace clay, loose, slight odor typical of decaying vegetable matter, wet		
15		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	Brown, fine-medium SAND w/little silt, trace clay, loose, wet		
		16–20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium SAND, 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	Brown, medium SAND, loose, well sorted, homogeneous, wet		
25		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium-coarse SAND, loose, wet		
		28–32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium-coarse SAND, loose, wet		

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-11I
Location: Sag Harbor, New York	Date(s): 05/01/02 – 05/01/02
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Screen Zones
			0.0 ppm 0.0 ppm			
		32–36'	0.0 ppm 0.0 ppm 0.0 ppm	Light brown, medium SAND, loose, wet		
			0.0 ppm			
35						
		36–40'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium SAND, loose, wet		
40		40–44'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Yellowish–brown, medium SAND, loose, tar–like staining, minor yellowish Fe staining, wet		
		44–48'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Light brown–tan, fine–medium SAND w/some silt, loose, wet		
45						
				Brown, silty SAND w/some clay		
				Base of boring – 48'		
50						
55						
60						
65						





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

Site Id: SHMW-12I

Date(s): 05/06/02 – 05/06/02

Datum: Mean Sea Level

Elevation: 3.29'

Measuring Point: 2.88'

Completed Depth: 47.00'

Total Depth: 47.00'

Location: Sag Harbor, New York

Purpose: Monitoring Well, Intermediate

Logged By: Innocent

Drilling Method: Geoprobe

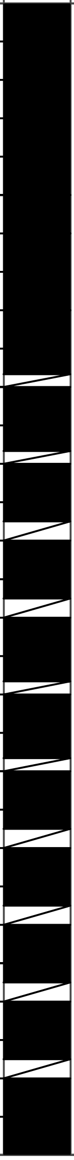
Borehole Dia.: 3.00in

Contractor: Zebra Environmental

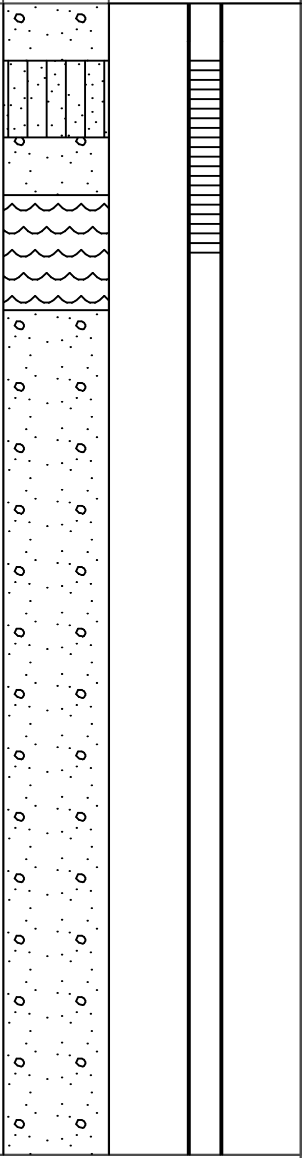
Screens:

type: Slotted	size: 0.005in	dia: 1.00in	fm: 1.50'	to: 6.50'
type: Slotted	size: 0.010in	dia: 1.00in	fm: 35.00'	to: 45.00'

Remarks: Includes well screens for monitoring wells: SHMW-12S and SHMW-12I.

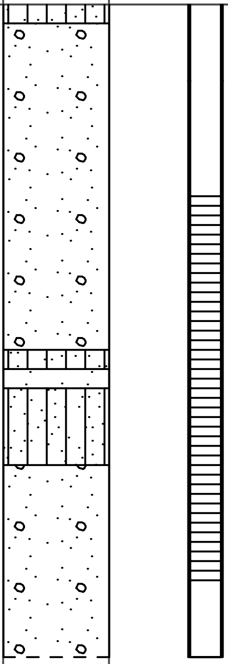


Depth (ft)	Sample Interval	PID	Material Description
	0–5'	0.0 ppm	
		0.0 ppm	Dark brown, medium SAND w/some small gravel, trace clay
		0.0 ppm	
		0.0 ppm	Black, silty fine–medium SAND w/some coarse sand and small pebbles
		0.0 ppm	
		0.0 ppm	Grayish brown, fine–medium SAND w/some pebbles
		0.0 ppm	
		0.0 ppm	
		0.0 ppm	
5		0.0 ppm	Brown, medium SAND w/some PEAT, soft, wet
	5–6'	0.0 ppm	
		0.0 ppm	Same as above to 6.33'
	6–8'	0.0 ppm	
		0.0 ppm	Brown–dark brown, PEAT, soft, organic (H2S–like) odor, moist
		0.0 ppm	
		3.2 ppm	Tan, fine–medium SAND, H2S–like odor, wet
	8–10'	0.5 ppm	
		1.7 ppm	Reddish brown, fine–medium SAND, organic (H2S–like) odor, wet
10		2.6 ppm	Same as above
	10–12'	0.0 ppm	
		2.1 ppm	
		5.3 ppm	Same as above
	12–14'	0.0 ppm	
		0.0 ppm	Brown, medium SAND w/some pebbles, slight organic (H2S–like) odor, wet
		0.0 ppm	
		0.0 ppm	Brown, medium SAND, wet
	14–16'	0.0 ppm	
15		0.0 ppm	
		0.0 ppm	Brown, fine–medium SAND, wet
	16–18'	0.0 ppm	
		0.0 ppm	
	18–20'	0.0 ppm	Same as above
		0.0 ppm	Tan, fine SAND w/some medium sand, mica particles
20		0.0 ppm	Same as above
	20–22'	0.0 ppm	
		0.0 ppm	
		0.0 ppm	Same as above
	22–24'	0.0 ppm	
		0.0 ppm	
		0.0 ppm	Tan, fine–medium SAND, wet
	24–26'	0.0 ppm	
25		0.0 ppm	
		0.0 ppm	Tan, medium SAND w/some fine sand, wet
	26–28'	0.0 ppm	
		0.0 ppm	
		0.0 ppm	Light brown–white, fine–medium SAND, loose, wet
	28–32'	0.0 ppm	
		0.0 ppm	
		0.0 ppm	



Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW–12I
Location: Sag Harbor, New York	Date(s): 05/06/02 – 05/06/02
Purpose: Monitoring Well, Intermediate	Total Depth: 47.00’

Depth (ft)	Recovery	Sample Interval	PID	Material Description
				Silty SAND
		32–36’	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Light brown–white, fine–medium SAND, loose, wet
35				
		36–40’	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above w/little silt at 39–39.5’
40		40–44’	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Light brown–white, silty SAND, loose, wet Light brown–white, fine–medium SAND, loose, wet
		44–48’	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Light brown–white, fine–medium SAND, loose, wet
45				
				Base of boring – 48’
50				
55				
60				
65				



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

Site Id: SHMW-13I

Date(s): 05/08/02 - 05/08/02

Datum: Mean Sea Level

Elevation: 4.70'

Measuring Point: 4.47'

Completed Depth: 52.00'

Total Depth: 52.00'

Location: Sag Harbor, New York

Purpose: Monitoring Well, Intermediate

Logged By: Matthew Bowman

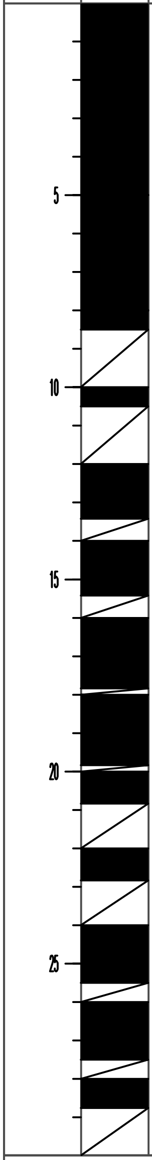
Drilling Method: Geoprobe

Borehole Dia.: 3.00in

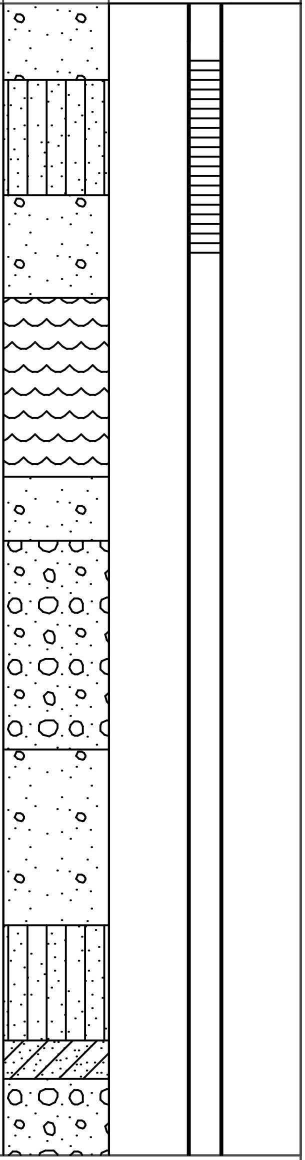
Contractor: Zebra Environmental

Screens:
type: Slotted size: 0.005in dia: 1.00in fm: 1.50' to: 6.50'
type: Slotted size: 0.010in dia: 1.00in fm: 35.00' to: 45.00'

Remarks: Includes well screens for monitoring wells SHMW-13S and SHMW-13I.



Sample Interval	PID	Material Description
0-5'	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	Br-dark br, f-m SAND w/pebbles and some organic matter, moist, wet at 2' Dark brown, silty fine SAND w/clay, medium sand, and pebbles/stone fragments Same as above
5-8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, fine SAND w/some medium-coarse sand and shell fragments
8-10'	0.0 ppm	Dark brown, sandy fine PEAT, soft, moist
10-12'	0.0 ppm	Dark brown, PEAT, soft, moderate organic (H2S-like) odor, moist
12-14'	15.2 ppm 7.8 ppm	Dark brown, PEAT, soft, organic (H2S-like) odor, moist Dark reddish brown, fine SAND w/pebbles, organic (H2S-like) odor, wet
14-16'	0.6 ppm 2.0 ppm	Reddish brown, gravelly fine SAND w/some medium-coarse sand, organic (H2S-like) odor, wet
16-18'	0.0 ppm 0.0 ppm 0.0 ppm	Light reddish brown, gravelly fine SAND, loose, faint organic (H2S-like) odor, wet
18-20'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above Tan, fine-medium SAND, wet
20-22'	0.0 ppm	Same as above
22-24'	0.0 ppm	Same as above
24-26'	0.0 ppm 0.0 ppm 0.0 ppm	Light brown, gravelly very fine-medium SAND w/some silt and clay, loose, wet
26-28'	0.0 ppm 0.0 ppm 0.0 ppm	Same as above Light brown, fine-coarse SAND w/some clay
28-30'	0.0 ppm	Tan, gravelly fine-coarse SAND, wet Same as above



Consulting Firm: Dvirka & Bartilucci

Site Id: SHMW-13I

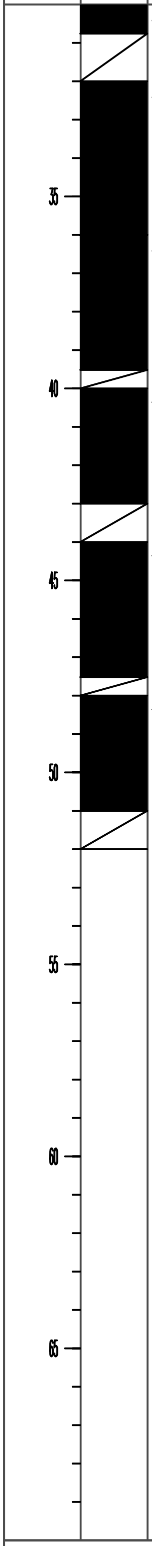
Location: Sag Harbor, New York

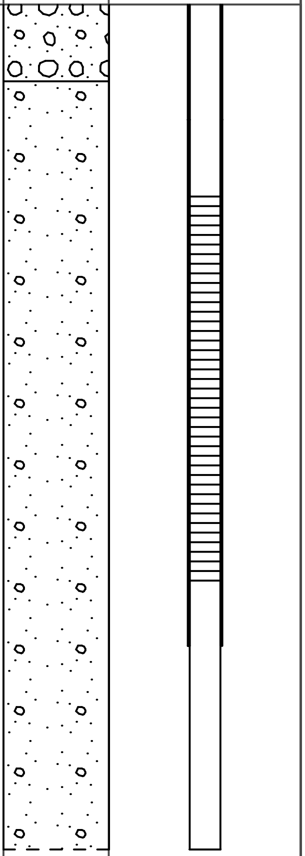
Date(s): 05/08/02 – 05/08/02

Purpose: Monitoring Well, Intermediate

Total Depth: 52.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Screen Zones
		30–32'	0.0 ppm	Tan, gravelly fine–coarse SAND, 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	Pale brown–pink, coarse SAND w/some gravel, loose, wet		
		36–40'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Yellowish brown, coarse SAND w/some gravel, loose, wet		
		40–44'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Yellowish brown, medium–coarse SAND w/little gravel		
		44–48'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Pale brown, coarse SAND w/some coarse gravel		
		48–52'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, coarse SAND w/some gravel		
				Base or boring – 52'		





APPENDIX B

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 C

SUPPLEMENTAL FIELD PROGRAM ANALYTICAL RESULTS - DATA SUMMARY TABLES

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

INDEX OF CHEMICAL DATA TABLES

Table No.	Location	Matrix	Analytical Parameter
C-1	Off-Site	Surface Soil	BTEX Compounds
C-2	Off-Site	Surface Soil	Polycyclic Aromatic Hydrocarbons (PAHs)
C-3	Off-Site	Surface Soil	RCRA Metals and Total Cyanide
C-4	On-Site	Subsurface Soil	BTEX Compounds
C-5	On-Site	Subsurface Soil	Polycyclic Aromatic Hydrocarbons (PAHs)
C-6	On-Site	Subsurface Soil	RCRA Metals and Total Cyanide
C-7	On-Site	Subsurface Soil	Volatile Organic Compounds (VOCs)
C-8	On-Site	Subsurface Soil	Semivolatile Organic Compounds (SVOCs)
C-9	On-Site	Subsurface Soil	Pesticides and PCBs
C-10	On-Site	Subsurface Soil	Target Analyte List (TAL) Metals
C-11	Off-Site	Subsurface Soil	BTEX Compounds
C-12	Off-Site	Subsurface Soil	Polycyclic Aromatic Hydrocarbons (PAHs)
C-13	Off-Site	Subsurface Soil	RCRA Metals and Total Cyanide
C-14	On-Site	Groundwater Monitoring Well	BTEX Compounds
C-15	On-Site	Groundwater Monitoring Well	Polycyclic Aromatic Hydrocarbons (PAHs)
C-16	On-Site	Groundwater Monitoring Well	RCRA Metals and Total Cyanide
C-17	On-Site	Groundwater Monitoring Well	Geochemical Parameters
C-18	On-Site	Groundwater Monitoring Well	Field Parameters
C-19	Off-Site	Groundwater Monitoring Well	BTEX Compounds
C-20	Off-Site	Groundwater Monitoring Well	Polycyclic Aromatic Hydrocarbons (PAHs)
C-21	Off-Site	Groundwater Monitoring Well	RCRA Metals and Total Cyanide
C-22	Off-Site	Groundwater Monitoring Well	Free Cyanide
C-23	Off-Site	Groundwater Monitoring Well	Geochemical Parameters
C-24	Off-Site	Groundwater Monitoring Well	Field Parameters
C-25	Off-Site	Groundwater Probe	BTEX Compounds and MTBE
C-26	Off-Site	Groundwater Probe	Polycyclic Aromatic Hydrocarbons (PAHs)
C-27	Off-Site	Pore Water	BTEX Compounds
C-28	Off-Site	Pore Water	Polycyclic Aromatic Hydrocarbons (PAHs)
C-29	Off-Site	Surface Water	BTEX Compounds
C-30	Off-Site	Surface Water	Polycyclic Aromatic Hydrocarbons (PAHs)
C-31	Off-Site	Sediment	BTEX Compounds
C-32	Off-Site	Sediment	Polycyclic Aromatic Hydrocarbons (PAHs)
C-33	Off-Site	Sediment	Total Organic Carbon
C-34	Off-Site	Groundwater Seep	Volatile Organic Compounds (VOCs)
C-35	Off-Site	Groundwater Seep	Semivolatile Organic Compounds (SVOCs)
C-36	Off-Site	Tap Water	Volatile Organic Compounds (VOCs)
C-37	Off-Site	Tap Water	Semivolatile Organic Compounds (SVOCs)
C-38	Off-Site	Tap Water	RCRA Metals and Total Cyanide
C-39	Off-Site	Indoor Air	Volatile Organic Compounds (VOCs) and Naphthalene

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 C-1
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 04/17/2002 thru 05/17/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSS-14 SHSS-14(0-2") 05/15/2002 0.00	SHSS-15 SHSS-15(0-2") 05/09/2002 0.00	SHSS-16 SHSS-16(0-2") 05/09/2002 0.00	SHSS-17 SHSS-17(0-2") 05/09/2002 0.00	SHSS-18 SHSS-18(0-2") 05/17/2002 0.00
Benzene	(mg/kg)	0.06	0.006 U	0.001 U	0.001 U	0.002 U	0.001 U
Toluene	(mg/kg)	1.5	0.006 U	0.001 U	0.001 U	0.002 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.006 U	0.001 U	0.001 U	0.002 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.006 U	0.001	0.003	0.004	0.001 U
Total BTEX	(mg/kg)		0.00	0.001	0.003	0.004	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 04/17/2002 thru 05/17/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSS-14 SHSS-14(0-6") 04/17/2002 0.00	SHSS-14 SHSS-14(0-2") 05/15/2002 0.00	SHSS-15 SHSS-15(0-2") 05/09/2002 0.00	SHSS-16 SHSS-16(0-2") 05/09/2002 0.00	SHSS-17 SHSS-17(0-2") 05/09/2002 0.00
Naphthalene	(mg/kg)	13	4.1 U	3.9 U	0.41 U	0.4 U	0.54 U
2-Methylnaphthalene	(mg/kg)	36.4	4.1 U	3.9 U	0.41 U	0.4 U	0.54 U
Acenaphthylene	(mg/kg)	41	1.6 J	3.9 U	0.41 U	0.16 J	0.54 U
Acenaphthene	(mg/kg)	50	4.1 U	3.9 U	0.41 U	0.4 U	0.54 U
Dibenzofuran	(mg/kg)	6.2	4.1 U	3.9 U	0.41 U	0.4 U	0.54 U
Fluorene	(mg/kg)	50	4.1 U	3.9 U	0.41 U	0.4 U	0.54 U
Phenanthrene	(mg/kg)	50	0.65 J	3.9 U	0.41 U	0.11 J	0.24 J
Anthracene	(mg/kg)	50	0.69 J	3.9 U	0.41 U	0.061 J	0.061 J
Fluoranthene	(mg/kg)	50	2.3 J	3.9 U	0.054 J	0.3 J	0.57
Pyrene	(mg/kg)	50	4.3	3.9 U	0.073 J	0.42	0.64
Benz(a)anthracene	(mg/kg)	0.224	[1.8] J	3.9 U	0.41 U	0.18 J	[0.25] J
Chrysene	(mg/kg)	0.4	[2.5] J	3.9 U	0.41 U	0.32 J	[0.4] J
Benzo(b)fluoranthene	(mg/kg)	1.1	[2.4] J	3.9 U	0.41 U	0.36 J	0.42 J
Benzo(k)fluoranthene	(mg/kg)	1.1	[1.3] J	3.9 U	0.41 U	0.19 J	0.28 J
Benzo(a)pyrene	(mg/kg)	0.061	[2.1] J	3.9 U	0.41 U	[0.22] J	[0.28] J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	1.8 J	3.9 U	0.41 U	0.14 J	0.13 J
Dibenz(a,h)anthracene	(mg/kg)	0.014	4.1 U	3.9 U	0.41 U	0.4 U	0.54 U
Benzo(g,h,i)perylene	(mg/kg)	50	2.6 J	3.9 U	0.41 U	0.16 J	0.54 U
Total CAPAHs	(mg/kg)	10	[11.90]	0.00	0.00	1.41	1.760
Total PAHs	(mg/kg)	500	24.04	0.00	0.127	2.621	3.271

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 04/17/2002 thru 05/17/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSS-18 SHSS-18(0-2") 05/17/2002 0.00
Naphthalene	(mg/kg)	13	0.35 U
2-Methylnaphthalene	(mg/kg)	36.4	0.35 U
Acenaphthylene	(mg/kg)	41	0.35 U
Acenaphthene	(mg/kg)	50	0.35 U
Dibenzofuran	(mg/kg)	6.2	0.35 U
Fluorene	(mg/kg)	50	0.35 U
Phenanthrene	(mg/kg)	50	0.054 J
Anthracene	(mg/kg)	50	0.35 U
Fluoranthene	(mg/kg)	50	0.1 J
Pyrene	(mg/kg)	50	0.12 J
Benz(a)anthracene	(mg/kg)	0.224	0.058 J
Chrysene	(mg/kg)	0.4	0.067 J
Benzo(b)fluoranthene	(mg/kg)	1.1	0.064 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.35 U
Benzo(a)pyrene	(mg/kg)	0.061	0.048 J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.35 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.35 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.35 U
Total CAPAHs	(mg/kg)	10	0.237
Total PAHs	(mg/kg)	500	0.511

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 04/17/2002 thru 05/17/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSS-14 SHSS-14(0-2") 05/15/2002 0.00	SHSS-15 SHSS-15(0-2") 05/09/2002 0.00	SHSS-16 SHSS-16(0-2") 05/09/2002 0.00	SHSS-17 SHSS-17(0-2") 05/09/2002 0.00	SHSS-18 SHSS-18(0-2") 05/17/2002 0.00
Arsenic	(mg/kg)	7.5	2.5	5.9	2.2	[27.1]	1.3
Barium	(mg/kg)	300	37.8 B	24.0	27.1	32.3	8.8
Cadmium	(mg/kg)	10	0.065 B*	0.018 U	0.018 U	0.13 B	0.088 U
Chromium	(mg/kg)	50	8.2	8.5	4.8	19.7	3.1
Lead	(mg/kg)	500	47.1	12.9	63.9	101	14.2
Mercury	(mg/kg)	0.10	0.030 B*	0.037	0.061	[0.12]	0.020 B
Selenium	(mg/kg)	2	0.11 U	0.56 B	0.66 B	0.67 B	0.35 U
Silver	(mg/kg)		0.017 U	0.018 U	0.018 U	0.021 U	0.088 U
Cyanide	(mg/kg)		0.25 U	0.28 B	0.25 B	0.47 B	0.25 U

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-4
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-20 SHSB-20(9-11) 03/21/2002 9.00	SHSB-20 SHSB-20(31-33) 03/22/2002 31.00	SHSB-20 SHSB-20(79-81) 03/25/2002 79.00	SHSB-20 SHSB-20(99-101) 03/25/2002 99.00	SHSB-21 SHSB-21(7-9) 03/27/2002 7.00
Benzene	(mg/kg)	0.06	[0.55]	0.003	0.001 U	0.001 U	[3.5]
Toluene	(mg/kg)	1.5	0.23	0.001 U	0.001 U	0.001 U	[3.7]
Ethyl benzene	(mg/kg)	5.5	[6.6]	0.002	0.001 U	0.001 U	[13]
Xylene (total)	(mg/kg)	1.2	[11]	0.004	0.002	0.001 U	[15]
Total BTEX	(mg/kg)		18.38	0.009	0.002	0.00	35.2

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-4
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-21 SHSB-21(15-17) 03/27/2002 15.00	SHSB-21 SHSB-21(71-73) 03/28/2002 71.00	SHSB-21 SHSB-21(95-97) 03/29/2002 95.00	SHSB-22 SHSB-22(6-7) 04/01/2002 6.00	SHSB-22 SHSB-22(20-22) 04/01/2002 20.00
Benzene	(mg/kg)	0.06	[11]	0.001 U	0.001 U	[15]	0.001 U
Toluene	(mg/kg)	1.5	[16]	0.001 U	0.001 U	0.2 J	0.001 U
Ethyl benzene	(mg/kg)	5.5	[28]	0.001 U	0.001 U	[22]	0.001 U
Xylene (total)	(mg/kg)	1.2	[37]	0.001 U	0.001 U	[22]	0.001 U
Total BTEX	(mg/kg)		92	0.00	0.00	59.20	0.00

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-4
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-22 SHSB-22(52-54) 04/02/2002 52.00	SHSB-22 SHSB-22(98-100) 04/02/2002 98.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.00	0.00

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-20 SHSB-20(9-11) 03/21/2002 9.00	SHSB-20 SHSB-20(31-33) 03/22/2002 31.00	SHSB-20 SHSB-20(79-81) 03/25/2002 79.00	SHSB-20 SHSB-20(99-101) 03/25/2002 99.00	SHSB-21 SHSB-21(7-9) 03/27/2002 7.00
Naphthalene	(mg/kg)	13	[60] D	0.4 U	0.39 U	0.4 U	[300]
2-Methylnaphthalene	(mg/kg)	36.4	[39] D	0.4 U	0.39 U	0.4 U	[190]
Acenaphthylene	(mg/kg)	41	2.6	0.4 U	0.39 U	0.4 U	[110]
Acenaphthene	(mg/kg)	50	30 D	0.4 U	0.39 U	0.4 U	[130]
Dibenzofuran	(mg/kg)	6.2	0.36 J	0.4 U	0.39 U	0.4 U	[14] J
Fluorene	(mg/kg)	50	15 D	0.4 U	0.39 U	0.4 U	[130]
Phenanthrene	(mg/kg)	50	[60] D	0.12 J	0.39 U	0.4 U	[440]
Anthracene	(mg/kg)	50	17 D	0.4 U	0.39 U	0.4 U	[140]
Fluoranthene	(mg/kg)	50	20 D	0.046 J	0.39 U	0.4 U	[330]
Pyrene	(mg/kg)	50	34 D	0.072 J	0.39 U	0.4 U	[380]
Benz(a)anthracene	(mg/kg)	0.224	[12] D	0.4 U	0.39 U	0.4 U	[170]
Chrysene	(mg/kg)	0.4	[12] D	0.4 U	0.39 U	0.4 U	[180]
Benzo(b)fluoranthene	(mg/kg)	1.1	[4.9]	0.4 U	0.39 U	0.4 U	[140]
Benzo(k)fluoranthene	(mg/kg)	1.1	[2.1]	0.4 U	0.39 U	0.4 U	[74]
Benzo(a)pyrene	(mg/kg)	0.061	[6.3]	0.4 U	0.39 U	0.4 U	[170]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	1.9	0.4 U	0.39 U	0.4 U	[100]
Dibenz(a,h)anthracene	(mg/kg)	0.014	[0.82]	0.4 U	0.39 U	0.4 U	[22] J
Benzo(g,h,i)perylene	(mg/kg)	50	2.5	0.4 U	0.39 U	0.4 U	[120]
Total CAPAHs	(mg/kg)	10	[40.02]	0.00	0.00	0.00	[856.00]
Total PAHs	(mg/kg)	500	320.48	0.24	0.00	0.00	[3140.00]

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE		SHSB-21	SHSB-21	SHSB-21	SHSB-22	SHSB-22
	SAMPLE ID	NYSDEC	SHSB-21(15-17)	SHSB-21(71-73)	SHSB-21(95-97)	SHSB-22(6-7)	SHSB-22(20-22)
	DATE	SCG	03/27/2002	03/28/2002	03/29/2002	04/01/2002	04/01/2002
	DEPTH (ft)		15.00	71.00	95.00	6.00	20.00
Naphthalene	(mg/kg)	13	12 D	0.39 U	0.38 U	[130] D	0.4 U
2-Methylnaphthalene	(mg/kg)	36.4	9.3 D	0.39 U	0.38 U	[59]	0.4 U
Acenaphthylene	(mg/kg)	41	2.2	0.39 U	0.38 U	5.9 J	0.4 U
Acenaphthene	(mg/kg)	50	5.7	0.39 U	0.38 U	[65]	0.048 J
Dibenzofuran	(mg/kg)	6.2	0.4 U	0.39 U	0.38 U	1.4 J	0.4 U
Fluorene	(mg/kg)	50	2.9	0.39 U	0.38 U	29	0.4 U
Phenanthrene	(mg/kg)	50	16 D	0.16 J	0.1 J	[130] D	0.19 J
Anthracene	(mg/kg)	50	2.8	0.39 U	0.38 U	35	0.05 J
Fluoranthene	(mg/kg)	50	2.4	0.063 J	0.044 J	47	0.095 J
Pyrene	(mg/kg)	50	4.1	0.081 J	0.057 J	[64]	0.11 J
Benz(a)anthracene	(mg/kg)	0.224	[1.4]	0.39 U	0.38 U	[25]	0.058 J
Chrysene	(mg/kg)	0.4	[1.4]	0.39 U	0.38 U	[24]	0.051 J
Benzo(b)fluoranthene	(mg/kg)	1.1	0.89	0.39 U	0.38 U	[14]	0.4 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.31 J	0.39 U	0.38 U	[6]	0.4 U
Benzo(a)pyrene	(mg/kg)	0.061	[1.2]	0.39 U	0.38 U	[19]	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.41	0.39 U	0.38 U	[8]	0.4 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	[0.14] J	0.39 U	0.38 U	[2.4] J	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.5	0.39 U	0.38 U	10	0.4 U
Total CAPAHs	(mg/kg)	10	5.75	0.00	0.00	[98.40]	0.11
Total PAHs	(mg/kg)	500	63.65	0.30	0.2	[674.70]	0.60

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-22 SHSB-22(52-54) 04/02/2002 52.00	SHSB-22 SHSB-22(98-100) 04/02/2002 98.00
Naphthalene	(mg/kg)	13	0.36 U	0.37 U
2-Methylnaphthalene	(mg/kg)	36.4	0.36 U	0.37 U
Acenaphthylene	(mg/kg)	41	0.36 U	0.37 U
Acenaphthene	(mg/kg)	50	0.36 U	0.37 U
Dibenzofuran	(mg/kg)	6.2	0.36 U	0.37 U
Fluorene	(mg/kg)	50	0.36 U	0.37 U
Phenanthrene	(mg/kg)	50	0.36 U	0.37 U
Anthracene	(mg/kg)	50	0.36 U	0.37 U
Fluoranthene	(mg/kg)	50	0.36 U	0.37 U
Pyrene	(mg/kg)	50	0.36 U	0.37 U
Benz(a)anthracene	(mg/kg)	0.224	0.36 U	0.37 U
Chrysene	(mg/kg)	0.4	0.36 U	0.37 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.36 U	0.37 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.36 U	0.37 U
Benzo(a)pyrene	(mg/kg)	0.061	0.36 U	0.37 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.36 U	0.37 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.36 U	0.37 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.36 U	0.37 U
Total CAPAHs	(mg/kg)	10	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.00

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-20 SHSB-20(9-11) 03/21/2002 9.00	SHSB-20 SHSB-20(31-33) 03/22/2002 31.00	SHSB-20 SHSB-20(79-81) 03/25/2002 79.00	SHSB-20 SHSB-20(99-101) 03/25/2002 99.00	SHSB-21 SHSB-21(7-9) 03/27/2002 7.00
Arsenic	(mg/kg)	7.5	0.65 B	0.34 B	0.17 B*	0.35 B*	3.5 *
Barium	(mg/kg)	300	9.2	8.3 B	2.8 B	5.7 B	21.7
Cadmium	(mg/kg)	10	0.12 U	0.12 U	0.11 U	0.1 U	0.38
Chromium	(mg/kg)	50	6.6	3.8	1.1	2.9	3.1 *
Lead	(mg/kg)	500	16.2	1.2	0.45 B	0.73	[1320] *
Mercury	(mg/kg)	0.10	0.017 U	0.017 U	0.018 U	0.018 U	[0.36]
Selenium	(mg/kg)	2	0.48 U	0.46 U	0.45 U	0.41 U	0.76 B
Silver	(mg/kg)		0.12 U	0.12 U	0.11 U	0.1 U	0.11 U
Cyanide	(mg/kg)		0.3 U	0.28 U	0.67 U	0.72 U	0.29 B

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-21 SHSB-21(15-17) 03/27/2002 15.00	SHSB-21 SHSB-21(71-73) 03/28/2002 71.00	SHSB-21 SHSB-21(95-97) 03/29/2002 95.00	SHSB-22 SHSB-22(6-7) 04/01/2002 6.00	SHSB-22 SHSB-22(20-22) 04/01/2002 20.00
Arsenic	(mg/kg)	7.5	0.65 B*	0.27 B*	0.17 U	0.66 B	0.34 B
Barium	(mg/kg)	300	6.6 B	2.3 B	3.6 B	5.1 B	3.4 B
Cadmium	(mg/kg)	10	0.12 U	0.11 U	0.11 U	0.16 U	0.12 U
Chromium	(mg/kg)	50	4.2 *	1.7 *	1.6	2.7	2.3
Lead	(mg/kg)	500	2.2 *	0.42 B*	0.48 B	3.8	1
Mercury	(mg/kg)	0.10	0.018 U	0.018 U	0.089	0.025 U	0.019 U
Selenium	(mg/kg)	2	0.48 U	0.44 U	0.45 U	0.64 U	0.46 U
Silver	(mg/kg)		0.12 U	0.11 U	0.11 U	0.16 U	0.12 U
Cyanide	(mg/kg)		0.3 U	0.27 U	0.34 U	0.64 U	0.31 U

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-22 SHSB-22(52-54) 04/02/2002 52.00	SHSB-22 SHSB-22(98-100) 04/02/2002 98.00
Arsenic	(mg/kg)	7.5	0.63 B	0.16 B
Barium	(mg/kg)	300	13	3.4 B
Cadmium	(mg/kg)	10	0.096 U	0.1 U
Chromium	(mg/kg)	50	9.5	2.2
Lead	(mg/kg)	500	4	0.36 B
Mercury	(mg/kg)	0.10	0.016 U	0.017 U
Selenium	(mg/kg)	2	0.38 U	0.42 U
Silver	(mg/kg)		0.096 U	0.1 U
Cyanide	(mg/kg)		0.34 U	0.34 U

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-7
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-21 SHSB-21(15-17) 03/27/2002 15.00	SHSB-22 SHSB-22(6-7) 04/01/2002 6.00
Chloromethane	(mg/kg)		1.2 U	0.76 U
Bromomethane	(mg/kg)		1.2 U	0.76 U
Vinyl chloride	(mg/kg)	0.2	1.2 U	0.76 U
Chloroethane	(mg/kg)	1.9	1.2 U	0.76 U
Methylene chloride	(mg/kg)	0.1	1.2 U	0.76 U
Acetone	(mg/kg)	0.2	1.2 U	0.76 U
Carbon disulfide	(mg/kg)	2.7	1.2 U	0.76 U
1,1-Dichloroethene	(mg/kg)	0.4	1.2 U	0.76 U
1,1-Dichloroethane	(mg/kg)	0.2	1.2 U	0.76 U
Chloroform	(mg/kg)	0.3	1.2 U	0.76 U
1,2-Dichloroethane	(mg/kg)	0.1	1.2 U	0.76 U
2-Butanone	(mg/kg)	0.3	1.2 U	0.76 U
1,1,1-Trichloroethane	(mg/kg)	0.8	1.2 U	0.76 U
Carbon tetrachloride	(mg/kg)	0.6	1.2 U	0.76 U
Bromodichloromethane	(mg/kg)		1.2 U	0.76 U
1,2-Dichloropropane	(mg/kg)		1.2 U	0.76 U
cis-1,3-Dichloropropene	(mg/kg)		1.2 U	0.76 U
Trichloroethene	(mg/kg)	0.7	1.2 U	0.76 U
Dibromochloromethane	(mg/kg)		1.2 U	0.76 U
1,1,2-Trichloroethane	(mg/kg)		1.2 U	0.76 U
trans-1,3-Dichloropropene	(mg/kg)		1.2 U	0.76 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

*: BTEX compounds not included (see BTEX table)

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-7
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-21 SHSB-21(15-17) 03/27/2002 15.00	SHSB-22 SHSB-22(6-7) 04/01/2002 6.00
Bromoform	(mg/kg)		1.2 U	0.76 U
2-Hexanone	(mg/kg)		1.2 U	0.76 U
4-Methyl-2-pentanone	(mg/kg)	1	1.2 U	0.76 U
Tetrachloroethene	(mg/kg)	1.4	1.2 U	0.76 U
1,1,2,2-Tetrachloroethane	(mg/kg)	0.6	1.2 U	0.76 U
Chlorobenzene	(mg/kg)	1.7	1.2 U	0.76 U
Styrene	(mg/kg)		0.43 J	0.24 J

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

*: BTEX compounds not included (see BTEX table)

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-8
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-21 SHSB-21(15-17) 03/27/2002 15.00	SHSB-22 SHSB-22(6-7) 04/01/2002 6.00
Phenol	(mg/kg)	0.03	0.4 U	6 U
Bis(2-chloroethyl)ether	(mg/kg)		0.4 U	6 U
2-Chlorophenol	(mg/kg)	0.8	0.4 U	6 U
1,3-Dichlorobenzene	(mg/kg)	1.6	0.4 U	6 U
1,4-Dichlorobenzene	(mg/kg)	8.5	0.4 U	6 U
1,2-Dichlorobenzene	(mg/kg)	7.9	0.4 U	6 U
2-Methylphenol	(mg/kg)	0.1	0.4 U	6 U
4-Methylphenol	(mg/kg)	0.9	0.4 U	6 U
N-Nitroso-di-n-propylamine	(mg/kg)		0.4 U	6 U
Hexachloroethane	(mg/kg)		0.4 U	6 U
Nitrobenzene	(mg/kg)	0.2	0.4 U	6 U
Isophorone	(mg/kg)	4.4	0.4 U	6 U
2-Nitrophenol	(mg/kg)	0.33	0.4 U	6 U
2,4-Dimethylphenol	(mg/kg)		0.4 U	6 U
Bis(2-chloroethoxy)methane	(mg/kg)		0.4 U	6 U
2,4-Dichlorophenol	(mg/kg)	0.4	0.4 U	6 U
1,2,4-Trichlorobenzene	(mg/kg)	3.4	0.4 U	6 U
4-Chloroaniline	(mg/kg)	0.22	0.4 U	6 U
Hexachlorobutadiene	(mg/kg)		0.4 U	6 U
4-Chloro-3-methylphenol	(mg/kg)	0.24	0.4 U	6 U
Hexachlorocyclopentadiene	(mg/kg)		0.4 U	6 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

*: PAH compounds not included (see PAH table)

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-8
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-21 SHSB-21(15-17) 03/27/2002 15.00	SHSB-22 SHSB-22(6-7) 04/01/2002 6.00
2,4,6-Trichlorophenol	(mg/kg)		0.4 U	6 U
2,4,5-Trichlorophenol	(mg/kg)	0.1	0.82 U	12 U
2-Chloronaphthalene	(mg/kg)		0.4 U	6 U
2-Nitroaniline	(mg/kg)	0.43	0.82 U	12 U
Dimethyl phthalate	(mg/kg)	2	0.4 U	6 U
2,6-Dinitrotoluene	(mg/kg)	1	0.4 U	6 U
3-Nitroaniline	(mg/kg)	0.5	0.82 U	12 U
2,4-Dinitrophenol	(mg/kg)	0.2	0.82 U	12 U
4-Nitrophenol	(mg/kg)	0.1	0.82 U	12 U
2,4-Dinitrotoluene	(mg/kg)		0.4 U	6 U
Diethylphthalate	(mg/kg)	7.1	0.4 U	6 U
4-Chlorophenyl phenylether	(mg/kg)		0.4 U	6 U
4-Nitroaniline	(mg/kg)		0.82 U	12 U
4,6-Dinitro,2-methylphenol	(mg/kg)		0.82 U	12 U
N-Nitrosodiphenylamine (1)	(mg/kg)		0.4 U	6 U
Hexachlorobenzene	(mg/kg)	0.41	0.4 U	6 U
Pentachlorophenol	(mg/kg)	1	0.82 U	12 U
Di-n-butylphthalate	(mg/kg)	8.1	0.4 U	6 U
Butylbenzylphthalate	(mg/kg)	50	0.4 U	6 U
3,3'-Dichlorobenzidine	(mg/kg)		0.4 U	6 U
Bis(2-ethylhexyl)phthalate	(mg/kg)	50	0.05 J	6 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

*: PAH compounds not included (see PAH table)

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-8
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-21 SHSB-21(15-17) 03/27/2002 15.00	SHSB-22 SHSB-22(6-7) 04/01/2002 6.00
Di-n-octyl phthalate	(mg/kg)	50	0.4 U	6 U
Carbazole	(mg/kg)		0.4 U	6 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

*: PAH compounds not included (see PAH table)

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-9
SAG HARBOR FORMER MGP SITE SUPPLEMENTAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS (PCBs)

PERIOD: From 03/27/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE		SHSB-21	SHSB-22
	SAMPLE ID	NYSDEC	SHSB-21(15-17)	SHSB-22(6-7)
	DATE	SCG	03/27/2002	04/01/2002
	DEPTH (ft)		15.00	6.00
alpha-BHC	(mg/kg)	0.11	0.002 U	0.0031 U
beta-BHC	(mg/kg)	0.2	0.002 U	0.0031 U
delta-BHC	(mg/kg)	0.3	0.002 U	0.0031 U
gamma-BHC (Lindane)	(mg/kg)	0.06	0.002 U	0.0031 U
Heptachlor	(mg/kg)	0.1	0.002 U	0.0031 U
Aldrin	(mg/kg)	0.041	0.002 U	0.0031 U
Heptachlor epoxide	(mg/kg)	0.02	0.002 U	0.0031 U
Endosulfan I	(mg/kg)	0.9	0.002 U	0.0031 U
Dieldrin	(mg/kg)	0.044	0.004 U	0.006 U
4,4-DDE	(mg/kg)	2.1	0.004 U	0.006 U
Endrin	(mg/kg)	0.1	0.004 U	0.006 U
Endosulfan II	(mg/kg)	0.9	0.004 U	0.006 U
4,4-DDD	(mg/kg)	2.9	0.004 U	0.011 U
Endosulfan sulfate	(mg/kg)	1	0.004 U	0.006 U
4,4-DDT	(mg/kg)	2.1	0.004 U	0.031
Methoxychlor	(mg/kg)		0.02 U	0.031 U
Endrin ketone	(mg/kg)		0.004 U	0.006 U
alpha-Chlordane	(mg/kg)	0.54	0.002 U	0.0031 U
gamma-Chlordane	(mg/kg)	0.54	0.002 U	0.0031 U
Toxaphene	(mg/kg)		0.2 U	0.31 U
Aroclor-1016	(mg/kg)	10	0.04 U	0.06 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---:Not Analyzed

TABLE C-9
SAG HARBOR FORMER MGP SITE SUPPLEMENTAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDES/POLYCHLORINATED BIPHENYLS (PCBs)

PERIOD: From 03/27/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-21 SHSB-21(15-17) 03/27/2002 15.00	SHSB-22 SHSB-22(6-7) 04/01/2002 6.00
Aroclor-1221	(mg/kg)	10	0.04 U	0.06 U
Aroclor-1232	(mg/kg)	10	0.04 U	0.06 U
Aroclor-1242	(mg/kg)	10	0.04 U	0.06 U
Aroclor-1248	(mg/kg)	10	0.04 U	0.06 U
Aroclor-1254	(mg/kg)	10	0.04 U	0.06 U
Aroclor-1260	(mg/kg)	10	0.04 U	0.06 U
Endrin aldehyde	(mg/kg)		0.004 U	0.0062 P

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---:Not Analyzed

TABLE C-10
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS*

PERIOD: From 03/21/2002 thru 04/12/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-21 SHSB-21(15-17) 03/27/2002 15.00	SHSB-22 SHSB-22(6-7) 04/01/2002 6.00
Aluminum	(mg/kg)		2590	1030
Antimony	(mg/kg)		0.18 U	0.24 U
Beryllium	(mg/kg)	0.16	0.12 U	0.16 U
Calcium	(mg/kg)		338	938
Cobalt	(mg/kg)	30	1.2 B	0.64 B
Copper	(mg/kg)	25	3.9	2.9
Iron	(mg/kg)	2000	[2210]	[2280]
Magnesium	(mg/kg)		667	670
Manganese	(mg/kg)		24.4	19.8
Nickel	(mg/kg)	13	2.7 B	1.6 B
Potassium	(mg/kg)		388	148
Sodium	(mg/kg)		67.9 E	108
Thallium	(mg/kg)		0.24 U	0.32 U
Vanadium	(mg/kg)	150	5.5	4.3
Zinc	(mg/kg)	20	8.8	3.9 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

*: RCRA Metals not included (see RCRA Metals and Cyanide table)

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

	SITE		SHSB-23	SHSB-23	SHSB-23	SHSB-23	SHSB-24
	SAMPLE ID	NYSDEC	SHSB-23(8-10)	SHSB-23(17-19)	SHSB-23(37-39)	SHSB-23(58-60)	SHSB-24(12-14)
CONSTITUENT	DATE	SCG	04/04/2002	04/04/2002	04/04/2002	04/04/2002	04/16/2002
	DEPTH (ft)		8.00	17.00	37.00	58.00	12.00
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	0.003
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.00	0.003

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-24 SHSB-24(20-22) 04/16/2002 20.00	SHSB-24 SHSB-24(40-42) 04/16/2002 40.00	SHSB-24 SHSB-24(56-58) 04/17/2002 56.00	SHSB-25 SHSB-25(6-8) 04/05/2002 6.00	SHSB-25 SHSB-25(21-23) 04/05/2002 21.00
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 C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-25 SHSB-25(42-44) 04/08/2002 42.00	SHSB-25 SHSB-25(57-59) 04/08/2002 57.00	SHSB-26 SHSB-26(40-42) 04/08/2002 40.00	SHSB-26 SHSB-26(5-6) 04/08/2002 5.00	SHSB-26 SHSB-26(16-18) 04/08/2002 16.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.004	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.017	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.002 U	0.002
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001 U	0.041	0.001 U
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.062	2.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE		SHSB-26	SHSB-27	SHSB-27	SHSB-28	SHSB-28
	SAMPLE ID	NYSDEC	SHSB-26(58-60)	SHSB-27(5-7)	SHSB-27(28-30)	SHSB-28(10-12)	SHSB-28(20-22)
	DATE	SCG	04/09/2002	04/11/2002	04/11/2002	04/02/2002	04/02/2002
	DEPTH (ft)		58.00	5.00	28.00	10.00	20.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 J	0.002
Toluene	(mg/kg)	1.5	0.001 U	0.002	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	0.009
Xylene (total)	(mg/kg)	1.2	0.001 U	0.006	0.001 U	0.001 U	0.005
Total BTEX	(mg/kg)		0.00	0.008	0.00	0.001	0.016

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-28 SHSB-28(38-40) 04/02/2002 38.00	SHSB-28 SHSB-28(58-60) 04/02/2002 58.00	SHSB-29 SHSB-29(5-7) 04/11/2002 5.00	SHSB-29 SHSB-29(12-14) 04/11/2002 12.00	SHSB-29 SHSB-29(30-32) 04/11/2002 30.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.62 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.68	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	[27]	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	[32]	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.00	0.00	59.68	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-29 SHSB-29(58-60) 04/11/2002 58.00	SHSB-30 SHSB-30(5-6) 04/01/2002 5.00	SHSB-30 SHSB-30(28-30) 04/01/2002 28.00	SHSB-31 SHSB-31(4-6) 03/28/2002 4.00	SHSB-31 SHSB-31(16-18) 03/28/2002 16.00
Benzene	(mg/kg)	0.06	0.001 U	0.002	0.001 U	0.39 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.002 U	0.001 U	0.39 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.002 U	0.001 U	[16]	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.008	0.001 U	[13]	0.001 U
Total BTEX	(mg/kg)		0.00	0.010	0.00	29.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-31 SHSB-31(28-30) 03/28/2002 28.00	SHSB-32 SHSB-32(5-7) 04/15/2002 5.00	SHSB-32 SHSB-32(16-20) 04/15/2002 16.00	SHSB-33 SHSB-33(5.5-7.5 04/15/2002 5.50	SHSB-33 SHSB-33(12-14) 04/15/2002 12.00
Benzene	(mg/kg)	0.06	0.001 U	[0.57]	0.001 U	[1.1] J	0.034
Toluene	(mg/kg)	1.5	0.001 U	0.31 U	0.001 U	1.1 U	0.002
Ethyl benzene	(mg/kg)	5.5	0.001 U	[23]	0.001 U	[65]	0.001 J
Xylene (total)	(mg/kg)	1.2	0.001 U	[11]	0.001 U	[58]	0.004
Total BTEX	(mg/kg)		0.00	34.57	0.00	124.10	0.041

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-34 SHSB-34(8-10) 04/09/2002 8.00	SHSB-34 SHSB-34(28-30) 04/09/2002 28.00	SHSB-35 SHSB-35(8-10) 04/10/2002 8.00	SHSB-35 SHSB-35(28-30) 04/10/2002 28.00	SHSB-36 SHSB-36(8-10) 03/29/2002 8.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.009
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	0.009

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERID: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-36 SHSB-36(14-16) 03/29/2002 14.00	SHSB-37 SHSB37(6-8) 04/12/2002 6.00	SHSB-37 SHSB37(10-12) 04/12/2002 10.00	SHSB-37 SHSB37(14-16) 04/12/2002 14.00	SHSB-38 SHSB-38(8-10) 04/08/2002 8.00
Benzene	(mg/kg)	0.06	0.001 U	0.002	[0.36]	0.001 U	[14]
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.005 U	0.001 U	[17]
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.003	0.005	0.001 U	[140]
Xylene (total)	(mg/kg)	1.2	0.001 U	0.008	0.009	0.006	[130]
Total BTEX	(mg/kg)		0.00	0.013	0.374	0.006	301

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-38 SHSB-38(12-14) 04/08/2002 12.00	SHSB-38 SHSB-38(22-24) 04/08/2002 22.00	SHSB-39 SHSB-39(8-10) 03/27/2002 8.00	SHSB-39 SHSB-39(16-18) 03/27/2002 16.00	SHSB-40 SHSB-40(8-9) 04/09/2002 8.00
Benzene	(mg/kg)	0.06	0.065 U	0.001 U	0.003 U	0.001 U	0.001 U
Toluene	(mg/kg)	1.5	0.16	0.001 U	0.003 U	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.75	0.001 U	0.003 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	1.2	0.78	0.001 U	0.003 U	0.001 U	0.001 U
Total BTEX	(mg/kg)		1.69	0.00	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-40 SHSB-40(13-15) 04/09/2002 13.00	SHSB-41 SHSB-41(9-11) 04/11/2002 9.00	SHSB-41 SHSB-41(16-18) 04/11/2002 16.00	SHSB-42 SHSB-42(8-10) 04/15/2002 8.00	SHSB-42 SHSB-42(20-22) 04/15/2002 20.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.26 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.26 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	[16]	0.001 U
Xylene (total)	(mg/kg)	1.2	0.002	0.007	0.001 U	[17]	0.001 U
Total BTEX	(mg/kg)		0.002	0.01	0.00	33.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-43 SHSB-43(8-10) 04/16/2002 8.00	SHSB-43 SHSB-43(16-18) 04/16/2002 16.00	SHSB-44 SHSB-44(6-8) 04/17/2002 6.00	SHSB-44 SHSB-44(28-30) 04/17/2002 28.00	SHSB-45 SHSB-45(0-2) 05/14/2002 0.00
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	0.002	0.001 U	0.001 U	0.001 U
Total BTEX	(mg/kg)		0.00	0.002	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-11
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-46 SHSB-461.252.25 05/14/2002 1.25
Benzene	(mg/kg)	0.06	0.001 U
Toluene	(mg/kg)	1.5	0.001
Ethyl benzene	(mg/kg)	5.5	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U
Total BTEX	(mg/kg)		0.001

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-23 SHSB-23(8-10) 04/04/2002 8.00	SHSB-23 SHSB-23(17-19) 04/04/2002 17.00	SHSB-23 SHSB-23(37-39) 04/04/2002 37.00	SHSB-23 SHSB-23(58-60) 04/04/2002 58.00	SHSB-24 SHSB-24(12-14) 04/16/2002 12.00
Naphthalene	(mg/kg)	13	0.41 U	0.4 U	0.39 U	0.4 U	0.43 U
2-Methylnaphthalene	(mg/kg)	36.4	0.41 U	0.4 U	0.39 U	0.4 U	0.43 U
Acenaphthylene	(mg/kg)	41	0.33 J	0.4 U	0.39 U	0.4 U	0.43 U
Acenaphthene	(mg/kg)	50	0.41 U	0.4 U	0.39 U	0.4 U	0.09 J
Dibenzofuran	(mg/kg)	6.2	0.41 U	0.4 U	0.39 U	0.4 U	0.43 U
Fluorene	(mg/kg)	50	0.41 U	0.4 U	0.39 U	0.4 U	0.43 U
Phenanthrene	(mg/kg)	50	0.042 J	0.4 U	0.39 U	0.4 U	0.43 U
Anthracene	(mg/kg)	50	0.12 J	0.4 U	0.39 U	0.4 U	0.43 U
Fluoranthene	(mg/kg)	50	0.86	0.4 U	0.39 U	0.4 U	0.43 U
Pyrene	(mg/kg)	50	1.4	0.4 U	0.39 U	0.4 U	0.43 U
Benz(a)anthracene	(mg/kg)	0.224	[0.8]	0.4 U	0.39 U	0.4 U	0.43 U
Chrysene	(mg/kg)	0.4	[0.93]	0.4 U	0.39 U	0.4 U	0.43 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.89	0.4 U	0.39 U	0.4 U	0.43 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.32 J	0.4 U	0.39 U	0.4 U	0.43 U
Benzo(a)pyrene	(mg/kg)	0.061	[0.91]	0.4 U	0.39 U	0.4 U	0.43 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.39 J	0.4 U	0.39 U	0.4 U	0.43 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	[0.1] J	0.4 U	0.39 U	0.4 U	0.43 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.5	0.4 U	0.39 U	0.4 U	0.43 U
Total CAPAHs	(mg/kg)	10	4.34	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	7.59	0.00	0.00	0.00	0.09

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-24 SHSB-24(20-22) 04/16/2002 20.00	SHSB-24 SHSB-24(40-42) 04/16/2002 40.00	SHSB-24 SHSB-24(56-58) 04/17/2002 56.00	SHSB-25 SHSB-25(6-8) 04/05/2002 6.00	SHSB-25 SHSB-25(21-23) 04/05/2002 21.00
Naphthalene	(mg/kg)	13	0.4 U	0.42 U	0.4 U	0.14 J	0.4 U
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	0.42 U	0.4 U	0.051 J	0.4 U
Acenaphthylene	(mg/kg)	41	0.4 U	0.42 U	0.4 U	0.38 U	0.4 U
Acenaphthene	(mg/kg)	50	0.4 U	0.42 U	0.4 U	0.13 J	0.4 U
Dibenzofuran	(mg/kg)	6.2	0.4 U	0.42 U	0.4 U	0.38 U	0.4 U
Fluorene	(mg/kg)	50	0.4 U	0.42 U	0.4 U	0.088 J	0.4 U
Phenanthrene	(mg/kg)	50	0.14 J	0.42 U	0.4 U	0.44	0.4 U
Anthracene	(mg/kg)	50	0.4 U	0.42 U	0.4 U	0.12 J	0.4 U
Fluoranthene	(mg/kg)	50	0.4 U	0.42 U	0.4 U	0.15 J	0.4 U
Pyrene	(mg/kg)	50	0.4 U	0.42 U	0.4 U	0.22 J	0.4 U
Benz(a)anthracene	(mg/kg)	0.224	0.4 U	0.42 U	0.4 U	0.38 U	0.4 U
Chrysene	(mg/kg)	0.4	0.4 U	0.42 U	0.4 U	0.38 U	0.4 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.4 U	0.42 U	0.4 U	0.38 U	0.4 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	0.42 U	0.4 U	0.38 U	0.4 U
Benzo(a)pyrene	(mg/kg)	0.061	0.4 U	0.42 U	0.4 U	0.38 U	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	0.42 U	0.4 U	0.38 U	0.4 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.4 U	0.42 U	0.4 U	0.38 U	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	0.42 U	0.4 U	0.38 U	0.4 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	0.14	0.00	0.00	1.34	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-25 SHSB-25(42-44) 04/08/2002 42.00	SHSB-25 SHSB-25(57-59) 04/08/2002 57.00	SHSB-26 SHSB-26(40-42) 04/08/2002 40.00	SHSB-26 SHSB-26(5-6) 04/08/2002 5.00	SHSB-26 SHSB-26(16-18) 04/08/2002 16.00
Naphthalene	(mg/kg)	13	0.42 U	0.4 U	0.4 U	22 U	0.4 U
2-Methylnaphthalene	(mg/kg)	36.4	0.42 U	0.4 U	0.4 U	22 J	0.4 U
Acenaphthylene	(mg/kg)	41	0.42 U	0.4 U	0.4 U	[76]	0.4 U
Acenaphthene	(mg/kg)	50	0.42 U	0.4 U	0.4 U	[96]	0.12 J
Dibenzofuran	(mg/kg)	6.2	0.42 U	0.4 U	0.4 U	22 U	0.4 U
Fluorene	(mg/kg)	50	0.42 U	0.4 U	0.4 U	[110]	0.078 J
Phenanthrene	(mg/kg)	50	0.42 U	0.4 U	0.4 U	[240]	0.32 J
Anthracene	(mg/kg)	50	0.42 U	0.4 U	0.4 U	[120]	0.094 J
Fluoranthene	(mg/kg)	50	0.42 U	0.4 U	0.4 U	[190]	0.16 J
Pyrene	(mg/kg)	50	0.42 U	0.4 U	0.4 U	[280]	0.22 J
Benz(a)anthracene	(mg/kg)	0.224	0.42 U	0.4 U	0.4 U	[110]	0.07 J
Chrysene	(mg/kg)	0.4	0.42 U	0.4 U	0.4 U	[110]	0.078 J
Benzo(b)fluoranthene	(mg/kg)	1.1	0.42 U	0.4 U	0.4 U	[61]	0.4 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.42 U	0.4 U	0.4 U	[34]	0.4 U
Benzo(a)pyrene	(mg/kg)	0.061	0.42 U	0.4 U	0.4 U	[75]	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.42 U	0.4 U	0.4 U	[26]	0.4 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.42 U	0.4 U	0.4 U	[9.4] J	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.42 U	0.4 U	0.4 U	29	0.4 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	[425.40]	0.15
Total PAHs	(mg/kg)	500	0.00	0.00	0.00	[1588.40]	1.14

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-26 SHSB-26(58-60) 04/09/2002 58.00	SHSB-27 SHSB-27(5-7) 04/11/2002 5.00	SHSB-27 SHSB-27(28-30) 04/11/2002 28.00	SHSB-28 SHSB-28(10-12) 04/02/2002 10.00	SHSB-28 SHSB-28(20-22) 04/02/2002 20.00
Naphthalene	(mg/kg)	13	0.39 U	0.18 J	0.38 U	1	0.41 U
2-Methylnaphthalene	(mg/kg)	36.4	0.39 U	0.1 J	0.38 U	0.1 J	0.41 U
Acenaphthylene	(mg/kg)	41	0.39 U	0.64	0.38 U	0.39 U	0.41 U
Acenaphthene	(mg/kg)	50	0.39 U	0.34 J	0.38 U	0.3 J	0.41 U
Dibenzofuran	(mg/kg)	6.2	0.39 U	0.36 U	0.38 U	0.39 U	0.41 U
Fluorene	(mg/kg)	50	0.39 U	0.22 J	0.38 U	0.088 J	0.41 U
Phenanthrene	(mg/kg)	50	0.39 U	0.28 J	0.38 U	0.071 J	0.41 U
Anthracene	(mg/kg)	50	0.39 U	0.41	0.38 U	0.39 U	0.41 U
Fluoranthene	(mg/kg)	50	0.39 U	0.73	0.38 U	0.39 U	0.41 U
Pyrene	(mg/kg)	50	0.39 U	1.4	0.38 U	0.39 U	0.41 U
Benz(a)anthracene	(mg/kg)	0.224	0.39 U	[0.44]	0.38 U	0.39 U	0.41 U
Chrysene	(mg/kg)	0.4	0.39 U	[0.49]	0.38 U	0.39 U	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.39 U	0.47	0.38 U	0.39 U	0.41 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.39 U	0.19 J	0.38 U	0.39 U	0.41 U
Benzo(a)pyrene	(mg/kg)	0.061	0.39 U	[0.57]	0.38 U	0.39 U	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.39 U	0.35 J	0.38 U	0.39 U	0.41 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.39 U	[0.09] J	0.38 U	0.39 U	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.39 U	0.43	0.38 U	0.39 U	0.41 U
Total CAPAHs	(mg/kg)	10	0.00	2.60	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	7.33	0.00	1.56	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-28 SHSB-28(38-40) 04/02/2002 38.00	SHSB-28 SHSB-28(58-60) 04/02/2002 58.00	SHSB-29 SHSB-29(5-7) 04/11/2002 5.00	SHSB-29 SHSB-29(12-14) 04/11/2002 12.00	SHSB-29 SHSB-29(30-32) 04/11/2002 30.00
Naphthalene	(mg/kg)	13	0.41 U	0.4 U	[900] D	0.41 U	0.41 U
2-Methylnaphthalene	(mg/kg)	36.4	0.41 U	0.4 U	[480] D	0.41 U	0.41 U
Acenaphthylene	(mg/kg)	41	0.41 U	0.4 U	[45]	0.41 U	0.41 U
Acenaphthene	(mg/kg)	50	0.41 U	0.4 U	[440] D	0.41 U	0.41 U
Dibenzofuran	(mg/kg)	6.2	0.41 U	0.4 U	[13]	0.41 U	0.41 U
Fluorene	(mg/kg)	50	0.41 U	0.4 U	[230] D	0.41 U	0.41 U
Phenanthrene	(mg/kg)	50	0.41 U	0.4 U	[840] D	0.41 U	0.41 U
Anthracene	(mg/kg)	50	0.41 U	0.4 U	[440] D	0.41 U	0.41 U
Fluoranthene	(mg/kg)	50	0.41 U	0.4 U	[330] D	0.41 U	0.41 U
Pyrene	(mg/kg)	50	0.41 U	0.4 U	[430] D	0.41 U	0.41 U
Benz(a)anthracene	(mg/kg)	0.224	0.41 U	0.4 U	[160] D	0.41 U	0.41 U
Chrysene	(mg/kg)	0.4	0.41 U	0.4 U	[150] D	0.41 U	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.41 U	0.4 U	[88] D	0.41 U	0.41 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.41 U	0.4 U	[35]	0.41 U	0.41 U
Benzo(a)pyrene	(mg/kg)	0.061	0.41 U	0.4 U	[110] D	0.41 U	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.41 U	0.4 U	[46]	0.41 U	0.41 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.41 U	0.4 U	[12]	0.41 U	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.41 U	0.4 U	[54]	0.41 U	0.41 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	[601.00]	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	0.00	[4803.00]	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-29 SHSB-29(58-60) 04/11/2002 58.00	SHSB-30 SHSB-30(5-6) 04/01/2002 5.00	SHSB-30 SHSB-30(28-30) 04/01/2002 28.00	SHSB-31 SHSB-31(4-6) 03/28/2002 4.00	SHSB-31 SHSB-31(16-18) 03/28/2002 16.00
Naphthalene	(mg/kg)	13	0.36 U	2.3	0.41 U	[300] D	0.4 U
2-Methylnaphthalene	(mg/kg)	36.4	0.36 U	0.49 U	0.41 U	[130] D	0.4 U
Acenaphthylene	(mg/kg)	41	0.36 U	0.49 U	0.41 U	14	0.4 U
Acenaphthene	(mg/kg)	50	0.36 U	0.5	0.41 U	[120] D	0.4 U
Dibenzofuran	(mg/kg)	6.2	0.36 U	0.49 U	0.41 U	5.4	0.4 U
Fluorene	(mg/kg)	50	0.36 U	0.49 U	0.41 U	48	0.4 U
Phenanthrene	(mg/kg)	50	0.13 J	0.49 U	0.41 U	[190] D	0.11 J
Anthracene	(mg/kg)	50	0.36 U	0.49 U	0.41 U	[57]	0.4 U
Fluoranthene	(mg/kg)	50	0.06 J	0.49 U	0.41 U	[68]	0.049 J
Pyrene	(mg/kg)	50	0.096 J	0.49 U	0.41 U	[74]	0.058 J
Benz(a)anthracene	(mg/kg)	0.224	0.36 U	0.49 U	0.41 U	[40]	0.4 U
Chrysene	(mg/kg)	0.4	0.36 U	0.49 U	0.41 U	[41]	0.4 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.36 U	0.49 U	0.41 U	[24]	0.4 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.36 U	0.49 U	0.41 U	[10]	0.4 U
Benzo(a)pyrene	(mg/kg)	0.061	0.36 U	0.49 U	0.41 U	[27]	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.36 U	0.49 U	0.41 U	[9.2]	0.4 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.36 U	0.49 U	0.41 U	[2.5] J	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.36 U	0.49 U	0.41 U	9.3	0.4 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	[153.70]	0.00
Total PAHs	(mg/kg)	500	(0.29)	2.80	0.00	[1169.40]	0.22

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE		SHSB-32	SHSB-32	SHSB-33	SHSB-33	SHSB-34
	SAMPLE ID	NYSDEC	SHSB-32(5-7)	SHSB-32(16-20)	SHSB-33(5.5-7.5	SHSB-33(12-14)	SHSB-34(8-10)
	DATE	SCG	04/15/2002	04/15/2002	04/15/2002	04/15/2002	04/09/2002
	DEPTH (ft)		5.00	16.00	5.50	12.00	8.00
Naphthalene	(mg/kg)	13	[130] D	0.046 J	[1700] D	0.41 U	0.46 U
2-Methylnaphthalene	(mg/kg)	36.4	[60] D	0.4 U	[680] D	0.41 U	0.46 U
Acenaphthylene	(mg/kg)	41	5.7	0.4 U	[45]	0.41 U	0.46 U
Acenaphthene	(mg/kg)	50	[65] D	0.4 U	[620] D	0.41 U	0.46 U
Dibenzofuran	(mg/kg)	6.2	2.5	0.4 U	[18]	0.41 U	0.46 U
Fluorene	(mg/kg)	50	28 D	0.4 U	[280] D	0.41 U	0.46 U
Phenanthrene	(mg/kg)	50	[110] D	0.12 J	[1000] D	0.41 U	0.46 U
Anthracene	(mg/kg)	50	34 D	0.4 U	[280] D	0.41 U	0.46 U
Fluoranthene	(mg/kg)	50	44 D	0.052 J	[380] D	0.41 U	0.46 U
Pyrene	(mg/kg)	50	[57] D	0.073 J	[490] D	0.41 U	0.063 J
Benz(a)anthracene	(mg/kg)	0.224	[21] D	0.4 U	[180] D	0.41 U	0.46 U
Chrysene	(mg/kg)	0.4	[22] D	0.4 U	[180] D	0.41 U	0.46 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[13]	0.4 U	[110] DJ	0.41 U	0.46 U
Benzo(k)fluoranthene	(mg/kg)	1.1	[5.7]	0.4 U	[33]	0.41 U	0.46 U
Benzo(a)pyrene	(mg/kg)	0.061	[16] D	0.4 U	[120] DJ	0.41 U	0.46 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[7.3]	0.4 U	[45]	0.41 U	0.46 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	[1.9]	0.4 U	[11]	0.41 U	0.46 U
Benzo(g,h,i)perylene	(mg/kg)	50	8.3	0.4 U	[50]	0.41 U	0.46 U
Total CAPAHs	(mg/kg)	10	[86.90]	0.00	[679.00]	0.00	0.00
Total PAHs	(mg/kg)	500	[631.40]	0.29	[6222.00]	0.00	0.06

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

	SITE		SHSB-34	SHSB-35	SHSB-35	SHSB-36	SHSB-36
	SAMPLE ID	NYSDEC	SHSB-34(28-30)	SHSB-35(8-10)	SHSB-35(28-30)	SHSB-36(8-10)	SHSB-36(14-16)
CONSTITUENT	DATE	SCG	04/09/2002	04/10/2002	04/10/2002	03/29/2002	03/29/2002
	DEPTH (ft)		28.00	8.00	28.00	8.00	14.00
Naphthalene	(mg/kg)	13	0.4 U	0.09 J	0.41 U	0.42 U	0.4 U
2-Methylnaphthalene	(mg/kg)	36.4	0.4 U	0.47 U	0.41 U	0.42 U	0.4 U
Acenaphthylene	(mg/kg)	41	0.4 U	0.16 J	0.41 U	0.42 U	0.4 U
Acenaphthene	(mg/kg)	50	0.4 U	0.11 J	0.41 U	0.42 U	0.4 U
Dibenzofuran	(mg/kg)	6.2	0.4 U	0.064 J	0.41 U	0.42 U	0.4 U
Fluorene	(mg/kg)	50	0.4 U	0.14 J	0.41 U	0.42 U	0.4 U
Phenanthrene	(mg/kg)	50	0.4 U	1.7	0.41 U	0.42 U	0.4 U
Anthracene	(mg/kg)	50	0.4 U	0.41 J	0.41 U	0.42 U	0.4 U
Fluoranthene	(mg/kg)	50	0.4 U	2.9	0.41 U	0.42 U	0.4 U
Pyrene	(mg/kg)	50	0.4 U	2.4	0.41 U	0.42 U	0.4 U
Benz(a)anthracene	(mg/kg)	0.224	0.4 U	[1.2]	0.41 U	0.42 U	0.4 U
Chrysene	(mg/kg)	0.4	0.4 U	[1.3]	0.41 U	0.42 U	0.4 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.4 U	[1.4]	0.41 U	0.42 U	0.4 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.4 U	0.56	0.41 U	0.42 U	0.4 U
Benzo(a)pyrene	(mg/kg)	0.061	0.4 U	[1.1]	0.41 U	0.42 U	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.4 U	0.72	0.41 U	0.42 U	0.4 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.4 U	[0.18] J	0.41 U	0.42 U	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.4 U	0.75	0.41 U	0.42 U	0.4 U
Total CAPAHs	(mg/kg)	10	0.00	6.46	0.00	0.00	0.00
Total PAHs	(mg/kg)	500	0.00	15.18	0.00	0.00	0.00

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-37 SHSB37(6-8) 04/12/2002 6.00	SHSB-37 SHSB37(10-12) 04/12/2002 10.00	SHSB-37 SHSB37(14-16) 04/12/2002 14.00	SHSB-38 SHSB-38(8-10) 04/08/2002 8.00	SHSB-38 SHSB-38(12-14) 04/08/2002 12.00
Naphthalene	(mg/kg)	13	7.9 D	1.6 U	0.4 U	[1400]	5.3
2-Methylnaphthalene	(mg/kg)	36.4	6.3 D	1.6 U	0.4 U	[420]	1.5
Acenaphthylene	(mg/kg)	41	1.8	1.6 U	0.4 U	[85] J	0.26 J
Acenaphthene	(mg/kg)	50	13 D	1.6 U	0.4 U	[330]	1.2
Dibenzofuran	(mg/kg)	6.2	0.55	1.6 U	0.4 U	110 U	0.43 U
Fluorene	(mg/kg)	50	8.3 D	1.6 U	0.4 U	[190]	0.64
Phenanthrene	(mg/kg)	50	32 D	1.6 U	0.4 U	[690]	2.3
Anthracene	(mg/kg)	50	11 D	1.6 U	0.4 U	[210]	0.64
Fluoranthene	(mg/kg)	50	12 D	1.6 U	0.4 U	[300]	0.99
Pyrene	(mg/kg)	50	14 D	1.6 U	0.4 U	[410]	1.3
Benz(a)anthracene	(mg/kg)	0.224	[6.1]	1.6 U	0.4 U	[150]	[0.45]
Chrysene	(mg/kg)	0.4	[6.2] D	1.6 U	0.4 U	[150]	[0.42] J
Benzo(b)fluoranthene	(mg/kg)	1.1	[3]	1.6 U	0.4 U	[81] J	0.22 J
Benzo(k)fluoranthene	(mg/kg)	1.1	[1.9]	1.6 U	0.4 U	[60] J	0.19 J
Benzo(a)pyrene	(mg/kg)	0.061	[4]	1.6 U	0.4 U	[120]	[0.35] J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	1.2	1.6 U	0.4 U	[47] J	0.14 J
Dibenz(a,h)anthracene	(mg/kg)	0.014	[0.39]	1.6 U	0.4 U	110 U	0.43 U
Benzo(g,h,i)perylene	(mg/kg)	50	1.1	1.6 U	0.4 U	[59] J	0.17 J
Total CAPAHs	(mg/kg)	10	[22.79]	0.00	0.00	[608]	2.20
Total PAHs	(mg/kg)	500	130.74	0.00	0.00	[4702.00]	16.07

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-38 SHSB-38(22-24) 04/08/2002 22.00	SHSB-39 SHSB-39(8-10) 03/27/2002 8.00	SHSB-39 SHSB-39(16-18) 03/27/2002 16.00	SHSB-40 SHSB-40(8-9) 04/09/2002 8.00	SHSB-40 SHSB-40(13-15) 04/09/2002 13.00
Naphthalene	(mg/kg)	13	0.39 U	0.92 U	0.38 U	0.41 U	0.29 J
2-Methylnaphthalene	(mg/kg)	36.4	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Acenaphthylene	(mg/kg)	41	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Acenaphthene	(mg/kg)	50	0.39 U	0.92 U	0.38 U	0.053 J	0.4 U
Dibenzofuran	(mg/kg)	6.2	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Fluorene	(mg/kg)	50	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Phenanthrene	(mg/kg)	50	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Anthracene	(mg/kg)	50	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Fluoranthene	(mg/kg)	50	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Pyrene	(mg/kg)	50	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Benz(a)anthracene	(mg/kg)	0.224	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Chrysene	(mg/kg)	0.4	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Benzo(a)pyrene	(mg/kg)	0.061	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.39 U	0.92 U	0.38 U	0.41 U	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.39 U	0.92 U	0.38 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	0.05	0.29

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE		SHSB-41	SHSB-41	SHSB-42	SHSB-42	SHSB-43
	SAMPLE ID	NYSDEC	SHSB-41(9-11)	SHSB-41(16-18)	SHSB-42(8-10)	SHSB-42(20-22)	SHSB-43(8-10)
	DATE	SCG	04/11/2002	04/11/2002	04/15/2002	04/15/2002	04/16/2002
	DEPTH (ft)		9.00	16.00	8.00	20.00	8.00
Naphthalene	(mg/kg)	13	1.7	0.42 U	[390] D	0.047 J	0.42 U
2-Methylnaphthalene	(mg/kg)	36.4	0.33 J	0.42 U	[160] D	0.42 U	0.42 U
Acenaphthylene	(mg/kg)	41	0.43 U	0.42 U	10	0.42 U	0.42 U
Acenaphthene	(mg/kg)	50	0.4 J	0.42 U	[110] D	0.42 U	0.42 U
Dibenzofuran	(mg/kg)	6.2	0.14 J	0.42 U	2.2	0.42 U	0.42 U
Fluorene	(mg/kg)	50	0.12 J	0.42 U	[51] D	0.42 U	0.42 U
Phenanthrene	(mg/kg)	50	0.43 U	0.42 U	[210] D	0.42 U	0.045 J
Anthracene	(mg/kg)	50	0.43 U	0.42 U	[58] D	0.42 U	0.42 U
Fluoranthene	(mg/kg)	50	0.43 U	0.42 U	[82] D	0.42 U	0.42 U
Pyrene	(mg/kg)	50	0.43 U	0.42 U	[120] D	0.42 U	0.42 U
Benz(a)anthracene	(mg/kg)	0.224	0.43 U	0.42 U	[39] D	0.42 U	0.42 U
Chrysene	(mg/kg)	0.4	0.43 U	0.42 U	[36] D	0.42 U	0.42 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.43 U	0.42 U	[18]	0.42 U	0.42 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.43 U	0.42 U	[6.8]	0.42 U	0.42 U
Benzo(a)pyrene	(mg/kg)	0.061	0.43 U	0.42 U	[31] DJ	0.42 U	0.42 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.43 U	0.42 U	[10]	0.42 U	0.42 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.43 U	0.42 U	[2.8]	0.42 U	0.42 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.43 U	0.42 U	12	0.42 U	0.42 U
Total CAPAHs	(mg/kg)	10	0.00	0.00	[143.60]	0.00	0.00
Total PAHs	(mg/kg)	500	(2.69)	(0.00)	[1348.80]	0.05	0.05

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-12
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-43 SHSB-43(16-18) 04/16/2002 16.00	SHSB-44 SHSB-44(6-8) 04/17/2002 6.00	SHSB-44 SHSB-44(28-30) 04/17/2002 28.00	SHSB-45 SHSB-45(0-2) 05/14/2002 0.00	SHSB-46 SHSB-461.252.25 05/14/2002 1.25
Naphthalene	(mg/kg)	13	0.41 U	0.42 U	0.37 U	0.38 U	0.58 J
2-Methylnaphthalene	(mg/kg)	36.4	0.41 U	0.42 U	0.37 U	0.38 U	3.8 U
Acenaphthylene	(mg/kg)	41	0.41 U	0.42 U	0.37 U	0.1 J	4
Acenaphthene	(mg/kg)	50	0.41 U	0.42 U	0.37 U	0.38 U	3.8 U
Dibenzofuran	(mg/kg)	6.2	0.41 U	0.42 U	0.37 U	0.38 U	3.8 U
Fluorene	(mg/kg)	50	0.41 U	0.42 U	0.37 U	0.38 U	3.8 U
Phenanthrene	(mg/kg)	50	0.41 U	0.42 U	0.37 U	0.46	1.8 J
Anthracene	(mg/kg)	50	0.41 U	0.42 U	0.37 U	0.11 J	1.4 J
Fluoranthene	(mg/kg)	50	0.41 U	0.42 U	0.37 U	0.72	6.1
Pyrene	(mg/kg)	50	0.41 U	0.42 U	0.37 U	0.88	13
Benz(a)anthracene	(mg/kg)	0.224	0.41 U	0.42 U	0.37 U	[0.33] J	[7.2]
Chrysene	(mg/kg)	0.4	0.41 U	0.42 U	0.37 U	[0.48]	[8.4]
Benzo(b)fluoranthene	(mg/kg)	1.1	0.41 U	0.42 U	0.37 U	0.52	[10]
Benzo(k)fluoranthene	(mg/kg)	1.1	0.41 U	0.42 U	0.37 U	0.23 J	[5.1]
Benzo(a)pyrene	(mg/kg)	0.061	0.41 U	0.42 U	0.37 U	[0.32] J	[9.3]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.41 U	0.42 U	0.37 U	0.17 J	[5]
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.41 U	0.42 U	0.37 U	0.38 U	[1.4] J
Benzo(g,h,i)perylene	(mg/kg)	50	0.41 U	0.42 U	0.37 U	0.23 J	6.5
Total CAPAHs	(mg/kg)	10	0.00	0.00	0.00	2.05	[46.40]
Total PAHs	(mg/kg)	500	0.00	0.00	0.00	4.55	79.78

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-23 SHSB-23(8-10) 04/04/2002 8.00	SHSB-23 SHSB-23(17-19) 04/04/2002 17.00	SHSB-23 SHSB-23(37-39) 04/04/2002 37.00	SHSB-23 SHSB-23(58-60) 04/04/2002 58.00	SHSB-24 SHSB-24(12-14) 04/16/2002 12.00
Arsenic	(mg/kg)	7.5	0.74 B	0.4 B	0.36 B	0.58 B	0.72 B
Barium	(mg/kg)	300	5.2 B	2.4 B	2 B	13.8	5 B
Cadmium	(mg/kg)	10	0.11 U	0.11 U	0.11 U	0.11 U	0.12 U
Chromium	(mg/kg)	50	2.5	1.2	1.2	4.8	3.2
Lead	(mg/kg)	500	13.8	0.62	0.56	1.8	1.1
Mercury	(mg/kg)	0.10	0.037	0.019 U	0.019 U	0.017 U	0.02 U
Selenium	(mg/kg)	2	0.43 U	0.44 U	0.44 U	0.46 U	0.48 UB*
Silver	(mg/kg)		0.11 U	0.11 U	0.11 U	0.11 U	0.28 B
Cyanide	(mg/kg)		0.23 U	0.22 U	0.29 U	0.28 U	0.29 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-24 SHSB-24(20-22) 04/16/2002 20.00	SHSB-24 SHSB-24(40-42) 04/16/2002 40.00	SHSB-24 SHSB-24(56-58) 04/17/2002 56.00	SHSB-25 SHSB-25(6-8) 04/05/2002 6.00	SHSB-25 SHSB-25(21-23) 04/05/2002 21.00
Arsenic	(mg/kg)	7.5	1 B	1 B	0.25 B*	0.2 B	0.5 B
Barium	(mg/kg)	300	3.1 B	4.2 B	8.2 B	3.4 B	3 B
Cadmium	(mg/kg)	10	0.11 U	0.12 U	0.1 U	0.11 U	0.12 U
Chromium	(mg/kg)	50	2.4	2.9	2.7	1.7	1.5
Lead	(mg/kg)	500	1.1	1.1	1.1 *	1.8	0.65
Mercury	(mg/kg)	0.10	0.02 U	0.02 U	0.021 U	0.016 U	0.017 U
Selenium	(mg/kg)	2	0.46 UB*	0.5 U*	0.41 U	0.45 U	0.48 U
Silver	(mg/kg)		0.35 B	0.27 B	0.1 U	0.11 U	0.12 U
Cyanide	(mg/kg)		0.28 U	0.32 U	0.17 B	0.28 U	0.27 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-25 SHSB-25(42-44) 04/08/2002 42.00	SHSB-25 SHSB-25(57-59) 04/08/2002 57.00	SHSB-26 SHSB-26(40-42) 04/08/2002 40.00	SHSB-26 SHSB-26(5-6) 04/08/2002 5.00	SHSB-26 SHSB-26(16-18) 04/08/2002 16.00
Arsenic	(mg/kg)	7.5	0.4 B	0.34 B	0.6 B	0.84 B	0.61 B
Barium	(mg/kg)	300	6 B	9.5 B	11.4 B	3.3 B	5.2 B
Cadmium	(mg/kg)	10	0.12 U	0.11 U	0.12 U	0.1 U	0.11 U
Chromium	(mg/kg)	50	2.6	3.6	4.5	4.1	3
Lead	(mg/kg)	500	0.98	1.3	2.3	19.2	1.7
Mercury	(mg/kg)	0.10	0.018 U	0.02 U	0.019 U	0.017 U	0.017 U
Selenium	(mg/kg)	2	0.49 U	0.45 U	0.47 U	0.41 U	0.45 U
Silver	(mg/kg)		0.12 U	0.11 U	0.12 U	0.1 U	0.11 U
Cyanide	(mg/kg)		0.26 U	0.27 U	0.26 U	0.26 U	0.22 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-26 SHSB-26(58-60) 04/09/2002 58.00	SHSB-27 SHSB-27(5-7) 04/11/2002 5.00	SHSB-27 SHSB-27(28-30) 04/11/2002 28.00	SHSB-28 SHSB-28(10-12) 04/02/2002 10.00	SHSB-28 SHSB-28(20-22) 04/02/2002 20.00
Arsenic	(mg/kg)	7.5	0.18 U	1.5	0.36 B	1.4	0.28 B
Barium	(mg/kg)	300	7.4 B	10.4	4.2 B	6.3 B	3.6 B
Cadmium	(mg/kg)	10	0.12 U	0.1 U	0.1 U	0.1 U	0.11 U
Chromium	(mg/kg)	50	2.8	2.6	2.9	2.3	2.1
Lead	(mg/kg)	500	0.79	26.4	0.96	1.1	1.1
Mercury	(mg/kg)	0.10	0.02 U	0.045	0.018 U	0.016 U	0.02 U
Selenium	(mg/kg)	2	0.48 U	0.55 B	0.41 U	0.41 U	0.45 U
Silver	(mg/kg)		0.12 U	0.61 B	0.19 B	0.1 U	0.11 U
Cyanide	(mg/kg)		0.21 U	0.26 U	0.29 U	0.33 U	0.38 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-28 SHSB-28(38-40) 04/02/2002 38.00	SHSB-28 SHSB-28(58-60) 04/02/2002 58.00	SHSB-29 SHSB-29(5-7) 04/11/2002 5.00	SHSB-29 SHSB-29(12-14) 04/11/2002 12.00	SHSB-29 SHSB-29(30-32) 04/11/2002 30.00
Arsenic	(mg/kg)	7.5	0.91 B	1.2	2.0	0.52 B	0.17 U
Barium	(mg/kg)	300	6.1 B	33.1	5.4 B	8.3 B	4.5 B
Cadmium	(mg/kg)	10	0.11 U	0.11 U	0.11 U	0.12 U	0.12 U
Chromium	(mg/kg)	50	2.8	9.3	4.1	3.4	2.4
Lead	(mg/kg)	500	1.2	3.9	28.3	1.4	0.98
Mercury	(mg/kg)	0.10	0.02 U	0.019 U	0.030 B	0.019 U	0.018 U
Selenium	(mg/kg)	2	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U
Silver	(mg/kg)		0.11 U	0.11 U	0.11 U	0.12 U	0.12 U
Cyanide	(mg/kg)		0.38 U	0.4 U	0.28 U	0.20 U	0.27 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-29 SHSB-29(58-60) 04/11/2002 58.00	SHSB-30 SHSB-30(5-6) 04/01/2002 5.00	SHSB-30 SHSB-30(28-30) 04/01/2002 28.00	SHSB-31 SHSB-31(4-6) 03/28/2002 4.00	SHSB-31 SHSB-31(16-18) 03/28/2002 16.00
Arsenic	(mg/kg)	7.5	0.27 B	1.1 B	0.4 B	1.1 B*	0.52 B*
Barium	(mg/kg)	300	6.1 B	17.6	4.7 B	7.6 B	6.1 B
Cadmium	(mg/kg)	10	0.093 U	0.13 U	0.12 U	0.15 U	0.12 U
Chromium	(mg/kg)	50	2.0	5.4	2.4	3.4 *	2.4 *
Lead	(mg/kg)	500	0.76	39.3	1	17.5 *	1.2 *
Mercury	(mg/kg)	0.10	0.015 U	[0.11]	0.011 U	0.057	0.012 U
Selenium	(mg/kg)	2	0.37 U	0.54 U	0.48 U	0.61 U	0.46 U
Silver	(mg/kg)		0.093 U	0.27 B	0.12 U	0.37 B	0.23 B
Cyanide	(mg/kg)		0.22 U	0.11	0.44 U	0.35 U	0.26 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-32 SHSB-32(5-7) 04/15/2002 5.00	SHSB-32 SHSB-32(16-20) 04/15/2002 16.00	SHSB-33 SHSB-33(5.5-7.5 04/15/2002 5.50	SHSB-33 SHSB-33(12-14) 04/15/2002 12.00	SHSB-34 SHSB-34(8-10) 04/09/2002 8.00
Arsenic	(mg/kg)	7.5	2.4	0.31 B	0.98 B	0.26 B	0.51 B
Barium	(mg/kg)	300	9.1 B	1.9 B	11	1.7 B	6.9 B
Cadmium	(mg/kg)	10	0.12 U	0.11 U	0.11 U	0.12 U	0.13 U
Chromium	(mg/kg)	50	8.5	1.5	2.5	2.0	3.6
Lead	(mg/kg)	500	20.1	0.86	12.1	1.1	5.9
Mercury	(mg/kg)	0.10	0.031 B	0.020 U	[0.1]	0.020 U	0.023 U
Selenium	(mg/kg)	2	0.47 U	0.43 U	0.72 B	0.47 U	0.53 U
Silver	(mg/kg)		0.4 B	0.11 U	0.42 B	0.12 U	0.13 U
Cyanide	(mg/kg)		0.27 U	0.27 U	0.27 U	0.28 U	0.34 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-34 SHSB-34(28-30) 04/09/2002 28.00	SHSB-35 SHSB-35(8-10) 04/10/2002 8.00	SHSB-35 SHSB-35(28-30) 04/10/2002 28.00	SHSB-36 SHSB-36(8-10) 03/29/2002 8.00	SHSB-36 SHSB-36(14-16) 03/29/2002 14.00
Arsenic	(mg/kg)	7.5	0.24 B	3.4	0.5 B	0.16 U	0.25 B
Barium	(mg/kg)	300	3.1 B	30.5	6.4 B	2.4 B	3.6 B
Cadmium	(mg/kg)	10	0.11 U	0.13 U	0.11 U	0.11 U	0.12 U
Chromium	(mg/kg)	50	2	5.4	2.6	1.9	1.7
Lead	(mg/kg)	500	0.73	136	1.1	1.6	0.89
Mercury	(mg/kg)	0.10	0.02 U	[0.28]	0.017 U	0.018 U	0.018 U
Selenium	(mg/kg)	2	0.45 U	0.51 U	0.46 U	0.43 U	0.48 U
Silver	(mg/kg)		0.11 U	1.3 B	0.11 U	0.11 U	0.12 U
Cyanide	(mg/kg)		0.28 U	0.32 U	0.24 U	0.4 U	0.41 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-37 SHSB37(6-8) 04/12/2002 6.00	SHSB-37 SHSB37(10-12) 04/12/2002 10.00	SHSB-37 SHSB37(14-16) 04/12/2002 14.00	SHSB-38 SHSB-38(8-10) 04/08/2002 8.00	SHSB-38 SHSB-38(12-14) 04/08/2002 12.00
Arsenic	(mg/kg)	7.5	0.94 B	2 B	0.22 B	1 B	0.22 U
Barium	(mg/kg)	300	8.4 B	20.2 B	1.4 B	7.7 B	1.7 B
Cadmium	(mg/kg)	10	0.1 U	0.44 U	0.12 U	1.3 U	0.15 U
Chromium	(mg/kg)	50	2.6	9.6	1.5	5.3	3
Lead	(mg/kg)	500	18.7	3.7	1.1	12	2.3
Mercury	(mg/kg)	0.10	0.016 U	0.078 U	0.018 U	0.026 U	0.026 U
Selenium	(mg/kg)	2	0.34 B	[2.8] B	0.67 B	5.1 U	0.59 U
Silver	(mg/kg)		0.59 B	0.7 B	0.12 U	1.3 U	0.15 U
Cyanide	(mg/kg)		0.28 U	1.2 U	0.28 U	0.28 U	0.26 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-38 SHSB-38(22-24) 04/08/2002 22.00	SHSB-39 SHSB-39(8-10) 03/27/2002 8.00	SHSB-39 SHSB-39(16-18) 03/27/2002 16.00	SHSB-40 SHSB-40(8-9) 04/09/2002 8.00	SHSB-40 SHSB-40(13-15) 04/09/2002 13.00
Arsenic	(mg/kg)	7.5	0.16 U	2.5 B*	0.77 B*	0.41 B	0.17 U
Barium	(mg/kg)	300	3.3 B	14.7 B	8.4 B	4.6 B	1.2 B
Cadmium	(mg/kg)	10	0.11 U	0.26 U	0.11 U	0.12 U	0.11 U
Chromium	(mg/kg)	50	1.7	12.2 *	5.3 *	2	2.1
Lead	(mg/kg)	500	0.64	6.7 *	2.6 *	1.3	0.96
Mercury	(mg/kg)	0.10	0.02 U	0.028 U	0.011 U	0.02 U	0.02 U
Selenium	(mg/kg)	2	0.43 U	1 U	0.43 U	0.5 U	0.45 U
Silver	(mg/kg)		0.11 U	0.65 B	0.21 B	0.12 U	0.11 U
Cyanide	(mg/kg)		0.2 U	0.59 U	0.26 U	0.21 U	0.24 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-41 SHSB-41(9-11) 04/11/2002 9.00	SHSB-41 SHSB-41(16-18) 04/11/2002 16.00	SHSB-42 SHSB-42(8-10) 04/15/2002 8.00	SHSB-42 SHSB-42(20-22) 04/15/2002 20.00	SHSB-43 SHSB-43(8-10) 04/16/2002 8.00
Arsenic	(mg/kg)	7.5	2.1	0.19 U	0.70 B	0.69 B	0.74 B
Barium	(mg/kg)	300	3.5 B	2.2 B	7.0 B	6 B	7.2 B
Cadmium	(mg/kg)	10	0.12 B	0.12 U	0.10 U	0.11 U	0.13 U
Chromium	(mg/kg)	50	1.7	1.5	4.8	3.2	2.6
Lead	(mg/kg)	500	0.51 B	0.84	14.5	1.9	4.8
Mercury	(mg/kg)	0.10	0.018 U	0.020 U	0.16 U	0.019 U	0.03 B
Selenium	(mg/kg)	2	0.45 U	0.50 U	0.41 U	0.42 U	0.34 NB*
Silver	(mg/kg)		0.11 U	0.12 U	0.34 B	0.18 B	0.55 B
Cyanide	(mg/kg)		0.31 U	0.30 U	0.27 U	0.29 U	0.31 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-13
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/27/2002 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-43 SHSB-43(16-18) 04/16/2002 16.00	SHSB-44 SHSB-44(6-8) 04/17/2002 6.00	SHSB-44 SHSB-44(28-30) 04/17/2002 28.00	SHSB-45 SHSB-45(0-2) 05/14/2002 0.00	SHSB-46 SHSB-461.252.25 05/14/2002 1.25
Arsenic	(mg/kg)	7.5	0.23 B	0.72 B*	0.19 B*	[8.1]	4.6
Barium	(mg/kg)	300	1.5 B	7.8 B	3 B	32.9	85.6
Cadmium	(mg/kg)	10	0.12 U	0.11 U	0.097 U	0.11 U	1.5
Chromium	(mg/kg)	50	1.5	1.8	1.7	9.2	8.1
Lead	(mg/kg)	500	1	205 *	0.68 *	91.9	277
Mercury	(mg/kg)	0.10	0.02 U	[0.4]	0.018 U	[0.17]	[0.64]
Selenium	(mg/kg)	2	0.49 U*	0.43 U	0.39 U	0.46 U	0.44
Silver	(mg/kg)		0.12 U	0.11 U	0.097 U	0.11 U	1.6 B
Cyanide	(mg/kg)		0.30 U	0.14 B	0.21 B	0.28 U	0.28 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-14
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/06/2002 thru 05/07/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 05/06/2002	MW-02 MW-02 05/07/2002	MW-03 MW-03 05/07/2002	MW-04 MW-04 05/07/2002	MW-05 MW-05 05/07/2002
Benzene	(ug/l)	1.0	[3]	[340]	[580]	[3]	[15]
Ethylbenzene	(ug/l)	5	2	[3200]	[220]	[5]	1
Toluene	(ug/l)	5	1 U	40 U	[43]	1 U	2
Xylene (total)	(ug/l)	5	4	[2300]	[520]	2	[84]
Total BTEX	(ug/l)		9.00	5840.00	1363.00	10.00	102.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-14
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/06/2002 thru 05/07/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-06 MW-06 05/07/2002	SHMW-01I SHMW-01,I 05/06/2002	SHMW-01S SHMW-01,S 05/06/2002	SHMW-02D SHMW-02,D 05/06/2002	SHMW-02I SHMW-02,I 05/06/2002
Benzene	(ug/l)	1.0	[11]	1 U	[360]	1 U	1 U
Ethylbenzene	(ug/l)	5	[7]	1 U	[140]	1 U	1 U
Toluene	(ug/l)	5	1	1 U	[24]	1 U	1 U
Xylene (total)	(ug/l)	5	[72]	1 U	[350]	4	1 U
Total BTEX	(ug/l)		91.00	0.00	874.00	4.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-15
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/06/2002 thru 05/07/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 05/06/2002	MW-02 MW-02 05/07/2002	MW-03 MW-03 05/07/2002	MW-04 MW-04 05/07/2002	MW-05 MW-05 05/07/2002
Naphthalene	(ug/l)	10	[14]	[6200]	[2700] D	10 U	[200] D
2-Methylnaphthalene	(ug/l)		3 J	820	340 D	10 U	78
Acenaphthylene	(ug/l)		32	73 J	15	10 U	41
Acenaphthene	(ug/l)	20	[46]	[620]	[260] DJ	10 U	[99]
Dibenzofuran	(ug/l)		1 J	500 U	11	10 U	10 U
Fluorene	(ug/l)	50	12	[240] J	[100]	10 U	38
Phenanthrene	(ug/l)	50	11	[920]	[120] DJ	10 U	[160]
Anthracene	(ug/l)	50	14	[290] J	44	10 U	[53]
Fluoranthene	(ug/l)	50	20	[380] J	46	10 U	[92]
Pyrene	(ug/l)	50	39	[530]	[62]	10 U	[150]
Benz(a)anthracene	(ug/l)	0.002	[19]	[200] J	[15]	10 U	[49]
Chrysene	(ug/l)	0.002	[23]	[190] J	[16]	10 U	[50]
Benzo(b)fluoranthene	(ug/l)	0.002	[34]	[91] J	[9] J	10 U	[34]
Benzo(k)fluoranthene	(ug/l)	0.002	[21]	[55] J	[6] J	10 U	[14]
Benzo(a)pyrene	(ug/l)	0	[46]	[120] J	[14]	[10] U	[49]
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[29]	500 U	[7] J	10 U	[20]
Dibenz(a,h)anthracene	(ug/l)		10 U	500 U	10 U	10 U	7 J
Benzo(g,h,i)perylene	(ug/l)		38	500 U	9 J	10 U	26
Total CAPAHs	(ug/l)		172.00	656.00	67.00	0.00	223.00
Total PAHs	(ug/l)		402.00	10729.00	3774.00	0.00	1160.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-15
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/06/2002 thru 05/07/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-06 MW-06 05/07/2002	SHMW-01I SHMW-01,I 05/06/2002	SHMW-01S SHMW-01,S 05/06/2002	SHMW-02D SHMW-02,D 05/06/2002	SHMW-02I SHMW-02,I 05/06/2002
Naphthalene	(ug/l)	10	[78]	10 U	[2100]	[49]	10 U
2-Methylnaphthalene	(ug/l)		9 J	10 U	270	8 J	10 U
Acenaphthylene	(ug/l)		8 J	10 U	200 U	12	10 U
Acenaphthene	(ug/l)	20	[72]	10 U	[190] J	2 J	10 U
Dibenzofuran	(ug/l)		2 J	10 U	200 U	10 U	10 U
Fluorene	(ug/l)	50	21	10 U	48 J	2 J	10 U
Phenanthrene	(ug/l)	50	19	10 U	[55] J	3 J	10 U
Anthracene	(ug/l)	50	6 J	10 U	200 U	10 U	10 U
Fluoranthene	(ug/l)	50	4 J	10 U	200 U	10 U	10 U
Pyrene	(ug/l)	50	6 J	10 U	200 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	[2] J	10 U	200 U	10 U	10 U
Chrysene	(ug/l)	0.002	[2] J	10 U	200 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	[4] J	10 U	200 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	[2] J	10 U	200 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[7] J	[10] U	[200] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[6] J	10 U	200 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	200 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10	10 U	200 U	10 U	10 U
Total CAPAHs	(ug/l)		23.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		258.00	0.00	2663.00	76.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-16
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 05/06/2002 thru 05/07/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 05/06/2002	MW-02 MW-02 05/07/2002	MW-03 MW-03 05/07/2002	MW-04 MW-04 05/07/2002	MW-05 MW-05 05/07/2002
Arsenic	(ug/l)	25	[25.8]	3.8 B	1 U	2 B	1 U
Barium	(ug/l)	1000	346	64.7 B	97.3 B	72.1 B	40 B
Cadmium	(ug/l)	5	2.0 U	0.3 U	0.3 U	0.3 U	0.3 U
Chromium	(ug/l)	50	[86.6]	0.3 U	0.3 U	0.3 U	0.3 U
Lead	(ug/l)	25	[658] *	9.1 B	0.5 U	0.5 U	4.6 B
Mercury	(ug/l)	0.7	[3]	0.3 U	0.14 U	0.14 U	0.13 U
Selenium	(ug/l)	10	8 U	2 U	2 U	2 U	2 U
Silver	(ug/l)	50	2 U	1.2 B	0.66 B	0.3 U	0.3 U
Cyanide	(ug/l)	200	7.5 B	16.2 B	21.2	27.3	2.8 B

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-16
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 05/06/2002 thru 05/07/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-06 MW-06 05/07/2002	SHMW-01I SHMW-01,I 05/06/2002	SHMW-01S SHMW-01,S 05/06/2002	SHMW-02D SHMW-02,D 05/06/2002	SHMW-02I SHMW-02,I 05/06/2002
Arsenic	(ug/l)	25	5.3 B	3 U	3 U	3 U	3 U
Barium	(ug/l)	1000	58.8 B	31.1 B	103 B	39.6 B	17.4 B
Cadmium	(ug/l)	5	0.3 U	2 U	2 U	2 U	2 U
Chromium	(ug/l)	50	0.3 U	3 U	3 U	3 U	3 U
Lead	(ug/l)	25	[32.4]	1.1 B*	[52.2] *	1.7 B*	1 U
Mercury	(ug/l)	0.7	0.5	0.16 U	0.14 U	0.14 U	0.15 U
Selenium	(ug/l)	10	2 U	8 U	8 U	8 U	8 U
Silver	(ug/l)	50	0.3 U	2 U	2 U	2 U	2 U
Cyanide	(ug/l)	200	29.6	5 U	11.8 B	5 U	5 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-17
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
GEOCHEMICAL PARAMETERS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 05/06/2002	MW-02 MW-02 05/07/2002	MW-03 MW-03 05/07/2002	MW-04 MW-04 05/07/2002	MW-05 MW-05 05/07/2002
Iron	(ug/l)	300	[59100]	[12300]	[13900]	[1700]	[1260]
Calcium	(ug/l)		82400	38400	67300	33100	77300
Sodium	(ug/l)	20000	5510	[57400]	17600	15800	6660
Chloride	(ug/l)	250000	5000 U	73000	20000	24000	6000
Bicarbonate(as CaCO3)	(ug/l)		98000	150000	250000	100000	240000
Total Dissolved Solids	(ug/l)		130000	300000	310000	210000	270000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-17
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
GEOCHEMICAL PARAMETERS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-06 MW-06 05/07/2002	SHMW-01I SHMW-01,I 05/06/2002	SHMW-01S SHMW-01,S 05/06/2002	SHMW-02D SHMW-02,D 05/06/2002	SHMW-02I SHMW-02,I 05/06/2002
Iron	(ug/l)	300	[3450]	184 B	[21900]	227	128 B
Calcium	(ug/l)		52200	16800	40600	21400	12300
Sodium	(ug/l)	20000	6160	13500	11600	[22500]	14000
Chloride	(ug/l)	250000	9000	29000	13000	31000	19000
Bicarbonate(as CaCO3)	(ug/l)		160000	64000	320000	53000	26000
Total Dissolved Solids	(ug/l)		190000	190000	220000	170000	130000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-18
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
FIELD PARAMETERS

PERIOD: From 05/06/2002 thru 05/07/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 05/06/2002	MW-02 MW-02 05/07/2002	MW-03 MW-03 05/07/2002	MW-04 MW-04 05/07/2002	MW-05 MW-05 05/07/2002
pH	(SU)		6.84	6.28	6.50	7.20	7.01
Specific Conductance	(uMhos)		176	503	524	313	384
Temperature	(C deg)		12.6	13.2	12.6	13.1	12.8
Turbidity	(ntu)		43.10	32.80	99.20	560.00	15.10
Dissolved Oxygen	(mg/l)		1.0	0.9	7.6	5.6	3.8
Redox Potential	(mv)		(-129)	(-116)	(-65)	(-58)	(-117)
Salinity	(%)		0.00	0.00	0.00	0.00	0.01

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-18
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
ON-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
FIELD PARAMETERS

PERIOD: From 05/06/2002 thru 05/07/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-06 MW-06 05/07/2002	SHMW-01I SHMW-01,I 05/06/2002	SHMW-01S SHMW-01,S 05/06/2002	SHMW-02D SHMW-02,D 05/06/2002	SHMW-02I SHMW-02,I 05/06/2002
pH	(SU)		7.34	6.16	6.60	6.11	5.75
Specific Conductance	(uMhos)		269	273	363	238	173
Temperature	(C deg)		13.7	13.6	12.3	13.8	13.5
Turbidity	(ntu)		2.60	2.60	-10.00	1.00	2.30
Dissolved Oxygen	(mg/l)		2.3	4.4	3.8	6.1	2.3
Redox Potential	(mv)		(-65)	103	(-71)	137	204
Salinity	(%)		0.01	0.00	0.01	0.01	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-19
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-03I SHMW-03I 05/10/2002	SHMW-03S SHMW-03S 05/10/2002	SHMW-04I SHMW-04I 05/13/2002	SHMW-04S SHMW-04S 05/13/2002	SHMW-05I SHMW-05I 05/09/2002
Benzene	(ug/l)	1.0	[8]	1 U	1 U	[1800]	1 U
Ethylbenzene	(ug/l)	5	[25]	1 U	1 U	[320]	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U	[34]	1 U
Xylene (total)	(ug/l)	5	[19]	1 U	1 U	[1000]	1 U
Total BTEX	(ug/l)		52.00	0.00	0.00	3154	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-19
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-05S SHMW-05S 05/09/2002	SHMW-06I SHMW-06I 05/08/2002	SHMW-06S SHMW-06S 05/08/2002	SHMW-07I SHMW-07I 04/30/2002	SHMW-07S SHMW-07S 04/30/2002
Benzene	(ug/l)	1.0	[22]	1 U	[410]	1 U	[340]
Ethylbenzene	(ug/l)	5	[18]	1 U	[1000]	1 U	[640]
Toluene	(ug/l)	5	1 U	1 U	[53]	1 U	[22]
Xylene (total)	(ug/l)	5	[29]	1 U	[1000]	1 U	[560]
Total BTEX	(ug/l)		69.00	0.00	2463.00	0.00	1562.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-19
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-08I SHMW-08I 05/08/2002	SHMW-08S SHMW-08S 05/08/2002	SHMW-09I SHMW-09I 05/13/2002	SHMW-09S SHMW-09S 05/13/2002	SHMW-10I SHMW-10I 05/15/2002
Benzene	(ug/l)	1.0	1 U	[2]	1 U	[180]	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	[220]	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U	[6]	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	1 U	[100]	1 U
Total BTEX	(ug/l)		0.00	2.00	0.00	506	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-19
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-10S SHMW-10S 05/15/2002	SHMW-11I SHMW-11I 05/15/2002	SHMW-11S SHMW-11S 05/15/2002	SHMW-12I SHMW-12I 05/15/2002	SHMW-12S SHMW-12S 05/15/2002
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	[52]
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	1 U	2
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	[5]
Total BTEX	(ug/l)		0.00	0.00	0.00	0.00	59.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-19
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-13I SHMW-13I 05/16/2002	SHMW-13S SHMW-13S 05/16/2002
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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-20
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-03I SHMW-03I 05/10/2002	SHMW-03S SHMW-03S 05/10/2002	SHMW-04I SHMW-04I 05/13/2002	SHMW-04S SHMW-04S 05/13/2002	SHMW-05I SHMW-05I 05/09/2002
Naphthalene	(ug/l)	10	[160]	10 U	10 U	[3600] D	10 U
2-Methylnaphthalene	(ug/l)		6 J	10 U	10 U	460 D	10 U
Acenaphthylene	(ug/l)		13 J	10 U	10 U	16	10 U
Acenaphthene	(ug/l)	20	[34]	10 U	10 U	[370] D	10 U
Dibenzofuran	(ug/l)		20 U	10 U	10 U	5 J	10 U
Fluorene	(ug/l)	50	8 J	10 U	10 U	[81]	10 U
Phenanthrene	(ug/l)	50	9 J	10 U	10 U	[240] DJ	2 J
Anthracene	(ug/l)	50	6 J	10 U	10 U	48	10 U
Fluoranthene	(ug/l)	50	6 J	10 U	10 U	[55]	4 J
Pyrene	(ug/l)	50	12 J	10 U	10 U	[93]	3 J
Benz(a)anthracene	(ug/l)	0.002	[10] J	10 U	10 U	[33]	[1] J
Chrysene	(ug/l)	0.002	[11] J	10 U	10 U	[30]	[2] J
Benzo(b)fluoranthene	(ug/l)	0.002	[10] J	10 U	10 U	[20]	[2] J
Benzo(k)fluoranthene	(ug/l)	0.002	[4] J	10 U	10 U	[7] J	[1] J
Benzo(a)pyrene	(ug/l)	0	[13] J	[10] U	[10] U	[25]	[1] J
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[7] J	10 U	10 U	[9] J	[1] J
Dibenz(a,h)anthracene	(ug/l)		20 U	10 U	10 U	3 J	10 U
Benzo(g,h,i)perylene	(ug/l)		11 J	10 U	10 U	12	10 U
Total CAPAHs	(ug/l)		55.00	0.00	0.00	127	8.00
Total PAHs	(ug/l)		320.00	0.00	0.00	5107	17.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-20
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-05S SHMW-05S 05/09/2002	SHMW-06I SHMW-06I 05/08/2002	SHMW-06S SHMW-06S 05/08/2002	SHMW-07I SHMW-07I 04/30/2002	SHMW-07S SHMW-07S 04/30/2002
Naphthalene	(ug/l)	10	[97]	10 U	[4000] D	10 U	[5200]
2-Methylnaphthalene	(ug/l)		5 J	10 U	330 D	10 U	780
Acenaphthylene	(ug/l)		1 J	10 U	5 J	10 U	500 U
Acenaphthene	(ug/l)	20	[26]	10 U	[200] DJ	10 U	[390] J
Dibenzofuran	(ug/l)		1 J	10 U	5 J	10 U	500 U
Fluorene	(ug/l)	50	8 J	10 U	[56]	10 U	[95] J
Phenanthrene	(ug/l)	50	18	10 U	[70]	10 U	[120] J
Anthracene	(ug/l)	50	5 J	10 U	15	10 U	500 U
Fluoranthene	(ug/l)	50	4 J	10 U	6 J	10 U	500 U
Pyrene	(ug/l)	50	5 J	10 U	7 J	10 U	500 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	500 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	500 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	500 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	500 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[500] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	500 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U	500 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U	500 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		170.00	0.00	4694.00	0.00	6585.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-20
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-08I SHMW-08I 05/08/2002	SHMW-08S SHMW-08S 05/08/2002	SHMW-09I SHMW-09I 05/13/2002	SHMW-09S SHMW-09S 05/13/2002	SHMW-10I SHMW-10I 05/15/2002
Naphthalene	(ug/l)	10	10 U	[16]	10 U	[2200] D	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	99	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	1 J	10 U
Acenaphthene	(ug/l)	20	10 U	[20]	10 U	[120]	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	3 J	10 U
Fluorene	(ug/l)	50	10 U	11	10 U	25	10 U
Phenanthrene	(ug/l)	50	10 U	16	10 U	20	10 U
Anthracene	(ug/l)	50	10 U	2 J	10 U	4 J	10 U
Fluoranthene	(ug/l)	50	10 U	3 J	10 U	10 U	10 U
Pyrene	(ug/l)	50	10 U	3 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
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		0.00	71.00	0.00	2472	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-20
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-10S SHMW-10S 05/15/2002	SHMW-11I SHMW-11I 05/15/2002	SHMW-11S SHMW-11S 05/15/2002	SHMW-12I SHMW-12I 05/15/2002	SHMW-12S SHMW-12S 05/15/2002
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	[58]
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	[21]	10 U	10 U	10 U	2 J
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	1 J	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)		22.00	0.00	0.00	0.00	60.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-20
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-13I SHMW-13I 05/16/2002	SHMW-13S SHMW-13S 05/16/2002
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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-21
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-03I SHMW-03I 05/10/2002	SHMW-03S SHMW-03S 05/10/2002	SHMW-04I SHMW-04I 05/13/2002	SHMW-04S SHMW-04S 05/13/2002	SHMW-05I SHMW-05I 05/09/2002
Arsenic	(ug/l)	25	6.1 B	1.0 U	3 U	3 U	3 U
Barium	(ug/l)	1000	42.8	29.5 B	41.4 B	39.6 B	31.7 B
Cadmium	(ug/l)	5	0.87 B	0.30 U	2.0 U	3.2 B	2 U
Chromium	(ug/l)	50	19.1 B	0.72 B	3 U	3.1 B	3 U
Lead	(ug/l)	25	[87.4]	0.50 U	1.0 U	10.7	1.2 B
Mercury	(ug/l)	0.7	0.14 B	0.13 U	0.13 U	0.13 U	0.13 U
Selenium	(ug/l)	10	2.1 B	3.5 B	8 U	8 U	8 U
Silver	(ug/l)	50	0.52 B*	0.30 U*	2 U	2 U	2 U
Cyanide	(ug/l)	200	2.5 B*	2.5 B*	5 U	9.4 B	5 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-21
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-05S SHMW-05S 05/09/2002	SHMW-06I SHMW-06I 05/08/2002	SHMW-06S SHMW-06S 05/08/2002	SHMW-07I SHMW-07I 04/30/2002	SHMW-07S SHMW-07S 04/30/2002
Arsenic	(ug/l)	25	3 U	3 U	3 U	3 U	4.9 B
Barium	(ug/l)	1000	29.8 B	58.8 B	86.3 B	38.8 B	134 B
Cadmium	(ug/l)	5	2 U	2 U	2 U	2 U	2 U
Chromium	(ug/l)	50	3 U	3 U	3 U	3 U	3 U
Lead	(ug/l)	25	1 U	1 U	1 U	1 U	4.6 B
Mercury	(ug/l)	0.7	0.14 U	0.13 U	0.14 U	0.1 U	0.1 U
Selenium	(ug/l)	10	8 U	8 U	8 U	8 U	8 U
Silver	(ug/l)	50	2 U	2 U	2 U	2 U	5.6 B
Cyanide	(ug/l)	200	5.1 B	5 U	27.7	5 U	85.3

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-21
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-08I SHMW-08I 05/08/2002	SHMW-08S SHMW-08S 05/08/2002	SHMW-09I SHMW-09I 05/13/2002	SHMW-09S SHMW-09S 05/13/2002	SHMW-10I SHMW-10I 05/15/2002
Arsenic	(ug/l)	25	3 U	[103]	3 U	3 U	7.0 B
Barium	(ug/l)	1000	56.2 B	247	10.2 B	120 B	69.4 B
Cadmium	(ug/l)	5	2 U	2 U	2.0 U	2 U	0.43 B
Chromium	(ug/l)	50	3 U	3 U	3 U	3 U	1.3 B
Lead	(ug/l)	25	1 U	[26.2]	1.3 B	1.6 B	0.50 U
Mercury	(ug/l)	0.7	0.13 U	0.1 U	0.13 U	0.13 U	0.070 U
Selenium	(ug/l)	10	8 U	[11.1] B	8 U	8 U	2.0 U
Silver	(ug/l)	50	2 U	2 U	2 U	2 U	10 B
Cyanide	(ug/l)	200	5 U	17.1 B	5 U	12.6 B	2.0 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-21
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-10S SHMW-10S 05/15/2002	SHMW-11I SHMW-11I 05/15/2002	SHMW-11S SHMW-11S 05/15/2002	SHMW-12I SHMW-12I 05/15/2002	SHMW-12S SHMW-12S 05/15/2002
Arsenic	(ug/l)	25	1.3 B	5.9 B	1.0 U	1.0 U	3.1 B
Barium	(ug/l)	1000	40.9 B	84.7 B	167 B	40.1 B	337
Cadmium	(ug/l)	5	0.30 U	1.3 B	0.30 U	0.30 U	0.30 U
Chromium	(ug/l)	50	2.8 B	0.51 B	1.1 B	1.1 B	1.7 B
Lead	(ug/l)	25	5.2 B	0.50 U	0.50 U	1.0 B	4.4 B
Mercury	(ug/l)	0.7	0.069 U	0.068 U	0.070 U	0.072 U	0.069 U
Selenium	(ug/l)	10	2.0 U	2.0 U	2.0 U	2.0 U	2.2 B
Silver	(ug/l)	50	6.5 B	8.6 B	5.5 B	3.5 B	2.3 B
Cyanide	(ug/l)	200	2.0 U	2.0 U	2.0 U	2.0 U	41.5

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-21
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-13I SHMW-13I 05/16/2002	SHMW-13S SHMW-13S 05/16/2002
Arsenic	(ug/l)	25	3 U	3 U
Barium	(ug/l)	1000	50.4 B	139 B
Cadmium	(ug/l)	5	2.0 U	2.0 U
Chromium	(ug/l)	50	3.0 U	3.0 U
Lead	(ug/l)	25	1.0 U	3.3 B
Mercury	(ug/l)	0.7	0.13 U	0.13 U
Selenium	(ug/l)	10	8 U	8 U
Silver	(ug/l)	50	2 U	2 U
Cyanide	(ug/l)	200	5 U	5 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-22
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
FREE CYANIDE

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-03I SHMW-03I 05/10/2002	SHMW-03S SHMW-03S 05/10/2002	SHMW-04I SHMW-04I 05/13/2002	SHMW-04S SHMW-04S 05/13/2002	SHMW-05I SHMW-05I 05/09/2002
Cyanide (Dissolved)	(ug/l)	200	5 U	5 U	5 U	5 U	5 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-22
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
FREE CYANIDE

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-05S SHMW-05S 05/09/2002	SHMW-09I SHMW-09I 05/13/2002	SHMW-09S SHMW-09S 05/13/2002	SHMW-10I SHMW-10I 05/15/2002	SHMW-10S SHMW-10S 05/15/2002
Cyanide (Dissolved)	(ug/l)	200	5 U	5 U	5 U	5 U	5 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-22
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
FREE CYANIDE

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-11I SHMW-11I 05/15/2002	SHMW-11S SHMW-11S 05/15/2002	SHMW-12I SHMW-12I 05/15/2002	SHMW-12S SHMW-12S 05/15/2002	SHMW-13I SHMW-13I 05/16/2002
Cyanide (Dissolved)	(ug/l)	200	5 U	5 U	5 U	4.8 B	5 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-22
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
FREE CYANIDE

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-13S SHMW-13S 05/16/2002
Cyanide (Dissolved)	(ug/l)	200	5 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-23
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
GEOCHEMICAL PARAMETERS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-03I SHMW-03I 05/10/2002	SHMW-03S SHMW-03S 05/10/2002	SHMW-04I SHMW-04I 05/13/2002	SHMW-04S SHMW-04S 05/13/2002	SHMW-05I SHMW-05I 05/09/2002
Iron	(ug/l)	300	[18200]	72.2 B	81.0 B	[9660]	[572]
Calcium	(ug/l)		25400	18400	16800	41700	16300
Sodium	(ug/l)	20000	[48000]	[24000]	[21300]	16000	15800
Chloride	(ug/l)	250000	68000	37000	28000	52000	27000
Bicarbonate(as CaCO3)	(ug/l)		68000	130000	53000	220000	44000
Total Dissolved Solids	(ug/l)		250000	170000	130000	370000	130000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-23
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
GEOCHEMICAL PARAMETERS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-05S SHMW-05S 05/09/2002	SHMW-06I SHMW-06I 05/08/2002	SHMW-06S SHMW-06S 05/08/2002	SHMW-07I SHMW-07I 04/30/2002	SHMW-07S SHMW-07S 04/30/2002
Iron	(ug/l)	300	[3240]	35.0 B	[25300]	101 B	[48800]
Calcium	(ug/l)		25000	25700	60000	21200	60200
Sodium	(ug/l)	20000	9100	[20900]	[35900]	17400	[76800]
Chloride	(ug/l)	250000	10000	32000	73000	31000	72000
Bicarbonate(as CaCO3)	(ug/l)		63000	80000	280000	34000	220000
Total Dissolved Solids	(ug/l)		110000	170000	400000	170000	440000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-23
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
GEOCHEMICAL PARAMETERS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-08I SHMW-08I 05/08/2002	SHMW-08S SHMW-08S 05/08/2002	SHMW-09I SHMW-09I 05/13/2002	SHMW-09S SHMW-09S 05/13/2002	SHMW-10I SHMW-10I 05/15/2002
Iron	(ug/l)	300	[1720]	[36000]	[418]	[13600]	180 B
Calcium	(ug/l)		20500	65700	15800	43400	207000
Sodium	(ug/l)	20000	[22400]	[48300]	17400	[72600]	[5040000]
Chloride	(ug/l)	250000	27000	63000	19000	86000	[8400000]
Bicarbonate(as CaCO3)	(ug/l)		52000	210000	50000	240000	120000
Total Dissolved Solids	(ug/l)		150000	370000	140000	360000	17000000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-23
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
GEOCHEMICAL PARAMETERS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-10S SHMW-10S 05/15/2002	SHMW-11I SHMW-11I 05/15/2002	SHMW-11S SHMW-11S 05/15/2002	SHMW-12I SHMW-12I 05/15/2002	SHMW-12S SHMW-12S 05/15/2002
Iron	(ug/l)	300	[4320]	42.4 B	[702]	250	[25600]
Calcium	(ug/l)		46700	232000	132000	28200	113000
Sodium	(ug/l)	20000	[643000]	[5060000]	[587000]	[22800]	[219000]
Chloride	(ug/l)	250000	[810000]	[9300000]	[1200000]	22000	[340000]
Bicarbonate(as CaCO3)	(ug/l)		120000	83000	200000	74000	500000
Total Dissolved Solids	(ug/l)		2100000	19000000	2300000	200000	1000000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-23
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
GEOCHEMICAL PARAMETERS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-13I SHMW-13I 05/16/2002	SHMW-13S SHMW-13S 05/16/2002
Iron	(ug/l)	300	142 B	[27700]
Calcium	(ug/l)		19800	122000
Sodium	(ug/l)	20000	19000	[167000]
Chloride	(ug/l)	250000	29000	[260000]
Bicarbonate(as CaCO3)	(ug/l)		33000	660000
Total Dissolved Solids	(ug/l)		170000	820000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-24
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
FIELD PARAMETERS

PERID: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	SHMW-03I SHMW-03I 05/10/2002	SHMW-03S SHMW-03S 05/10/2002	SHMW-04I SHMW-04I 05/13/2002	SHMW-04S SHMW-04S 05/13/2002	SHMW-05I SHMW-05I 05/09/2002	SHMW-05S SHMW-05S 05/09/2002
pH	(SU)	5.70	5.70	6.17	9.84	5.95	6.47
Specific Conductance	(uMhos)	444	301	183	417	162	182
Temperature	(C deg)	15.9	14.6	13.8	14.7	13.9	14.5
Turbidity	(ntu)	1.00	14.60	1.00	489.00	-10.00	-10.00
Dissolved Oxygen	(mg/l)	0.3	0.5	0.2	0.3	0.8	2.2
Redox Potential	(mv)	(-54)	50	186	(-122)	99	(-46)
Salinity	(%)	0.00	0.00	0.00	0.00	0.00	0.01

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-24
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
FIELD PARAMETERS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	SHMW-06I SHMW-06I 05/08/2002	SHMW-06S SHMW-06S 05/08/2002	SHMW-07I SHMW-07I 04/30/2002	SHMW-07S SHMW-07S 04/30/2002	SHMW-08I SHMW-08I 05/08/2002	SHMW-08S SHMW-08S 05/08/2002
pH	(SU)	6.29	5.97	6.07	6.72	5.71	6.16
Specific Conductance	(uMhos)	267	618	236	1020	233	577
Temperature	(C deg)	14.4	18.6	13.8	13.3	14.8	17.6
Turbidity	(ntu)	334.00	58.00	0.00	-10.00	1.50	1.00
Dissolved Oxygen	(mg/l)	4.4	6.4	1.1	2.2	5.4	3.1
Redox Potential	(mv)	204	(-75)	179	(-141)	303	(-111)
Salinity	(%)	0.01	0.00	0.01	0.05	0.01	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-24
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
FIELD PARAMETERS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	SHMW-09I SHMW-09I 05/13/2002	SHMW-09S SHMW-09S 05/13/2002	SHMW-10I SHMW-10I 05/15/2002	SHMW-10S SHMW-10S 05/15/2002	SHMW-11I SHMW-11I 05/15/2002	SHMW-11S SHMW-11S 05/15/2002
pH	(SU)	6.25	9.70	6.92	8.59	6.81	8.48
Specific Conductance	(uMhos)	163	462	18100	3900	18900	4430
Temperature	(C deg)	13.5	13.8	13.6	12.1	13.7	14.2
Turbidity	(ntu)	1.00	1.00	20.00	17.00	91.00	1.00
Dissolved Oxygen	(mg/l)	3.8	0.6	4.7	10.4	0.5	0.5
Redox Potential	(mv)	192	(-112)	75	(-88)	91	(-87)
Salinity	(%)	0.00	0.00	1.10	0.20	1.10	0.20

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-24
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER MONITORING WELL SAMPLE RESULTS
FIELD PARAMETERS

PERIOD: From 04/30/2002 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	SHMW-12I SHMW-12I 05/15/2002	SHMW-12S SHMW-12S 05/15/2002	SHMW-13I SHMW-13I 05/16/2002	SHMW-13S SHMW-13S 05/16/2002
pH	(SU)	7.87	10.49	5.88	6.78
Specific Conductance	(uMhos)	221	2130	184	1740
Temperature	(C deg)	14.1	14.6	14.5	12.4
Turbidity	(ntu)	14.10	1.00	154.00	0.00
Dissolved Oxygen	(mg/l)	2.4	2.7	3.0	0.2
Redox Potential	(mv)	(-32)	(-285)	154	(-149)
Salinity	(%)	0.00	0.10	0.00	0.10

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-31 SHGP-31(30-34) 04/05/2002	SHGP-31 SHGP-31(4-8) 04/05/2002	SHGP-32 SHGP-32(6.5-10) 04/17/2002	SHGP-32 SHGP-32(30-34) 04/17/2002	SHGP-33 SHGP-33(30-34) 04/12/2002
Methyltert-butylether	(ug/l)	10	---	---	---	---	---
Benzene	(ug/l)	1.0	1 U	1 U	1 U	[2]	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	1 U
Total BTEX	(ug/l)		0.00	0.00	0.00	3.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-33 SHGP-33(4-8) 04/12/2002	SHGP-34 SHGP-34(30-34) 04/03/2002	SHGP-34 SHGP-34(4-8) 04/03/2002	SHGP-34 SHGP-34(71-75) 04/24/2002	SHGP-34 SHGP-34(56-60) 04/24/2002
Methyltert-butylether	(ug/l)	10	---	---	---	---	---
Benzene	(ug/l)	1.0	1 U	[3]	[24]	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	[140]	[37]	1 U	1 U
Toluene	(ug/l)	5	1 U	4	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	2	[49]	[14]	1 U	1 U
Total BTEX	(ug/l)		2.00	196.00	75.00	0.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-34 SHGP-34(41-45) 04/24/2002	SHGP-35 SHGP-35(30-34) 04/03/2002	SHGP-35 SHGP-35S 04/03/2002	SHGP-36 SHGP-36I 04/10/2002	SHGP-36 SHGP-36(4-8) 04/10/2002
Methyltert-butylether	(ug/l)	10	---	---	---	---	---
Benzene	(ug/l)	1.0	1 U	[52]	[28]	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	[89]	4	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	[20]	[6]	1 U	1 U
Total BTEX	(ug/l)		0.00	161.00	38.00	0.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-37 SHGP-37(30-34) 03/29/2002	SHGP-37 SHGP-37S 03/29/2002	SHGP-38 SHGP-38(30-34) 04/09/2002	SHGP-38 SHGP-38(2-6) 04/09/2002	SHGP-39 SHGP-39(30-34) 04/10/2002
Methyltert-butylether	(ug/l)	10	---	---	---	---	---
Benzene	(ug/l)	1.0	1 U	[510]	1 U	[3]	1 U
Ethylbenzene	(ug/l)	5	1 U	[800]	1 U	1 U	1 U
Toluene	(ug/l)	5	1 U	[17]	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	[500]	1 U	1 U	1 U
Total BTEX	(ug/l)		0.00	1827.00	0.00	3.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-39 SHGP-39(4-8) 04/10/2002	SHGP-40 SHGP-40(30-34) 04/12/2002	SHGP-40 SHGP-40(5-9) 04/12/2002	SHGP-41 SHGP-41(30-34) 04/09/2002	SHGP-41 SHGP-41(6-10) 04/09/2002
Methyltert-butylether	(ug/l)	10	---	---	---	---	---
Benzene	(ug/l)	1.0	[30]	1 U	[84]	1 U	[560]
Ethylbenzene	(ug/l)	5	1 U	1 U	[27]	1 U	[1100]
Toluene	(ug/l)	5	1 U	1 U	2 U	1 U	1 U
Xylene (total)	(ug/l)	5	3	1 U	[37]	1 U	[550]
Total BTEX	(ug/l)		33.00	0.00	148.00	0.00	2210.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-42 SHGP-42I 04/01/2002	SHGP-42 SHGP-42(2-6) 04/01/2002	SHGP-43 SHGP-43(30-34) 03/28/2002	SHGP-43 SHGP-43(2-6) 03/28/2002	SHGP-44 SHGP-44(30-34) 04/11/2002
Methyltert-butylether	(ug/l)	10	---	---	---	---	---
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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-44 SHGP-44(4-8) 04/11/2002	SHGP-45 SHGP-45I(30-34) 04/16/2002	SHGP-45 SHGP-45S(2-6) 04/16/2002	SHGP-46 SHGP-46(30-34) 04/02/2002	SHGP-46 SHGP-46(2-6) 04/17/2002
Methyltert-butylether	(ug/l)	10	---	---	---	---	---
Benzene	(ug/l)	1.0	[3]	1 U	[1]	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	2	1 U	1 U	1 U	2
Total BTEX	(ug/l)		5.00	0.00	0.00	0.00	2.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-47 SHGP-47(30-34) 04/25/2002	SHGP-47 SHGP-47(4-8) 04/25/2002	SHGP-48 SHGP-48(30-34) 04/24/2002	SHGP-48 SHGP-48(7.5-11. 04/24/2002	SHGP-49 SHGP-49(30-34) 04/26/2002
Methyltert-butylether	(ug/l)	10	---	---	---	---	---
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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-49 SHGP-49(2-6) 04/26/2002	SHGP-50 SHGP-50I(30-34) 04/30/2002	SHGP-50 SHGP-50S(4-8) 04/30/2002	SHGP-51 SHGP-51(30-34) 04/25/2002	SHGP-51 SHGP-51(4-8) 04/25/2002
Methyltert-butylether	(ug/l)	10	---	---	---	---	---
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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-52 SHGP-52(71-75) 04/26/2002	SHGP-52 SHGP-52(56-60) 04/26/2002	SHGP-52 SHGP-52(41-45) 04/26/2002	SHGP-53 SHGP-53(30-34) 05/03/2002	SHGP-53 SHGP-53(6-10) 05/03/2002
Methyltert-butylether	(ug/l)	10	---	---	---	1 U	1 U
Benzene	(ug/l)	1.0	1 U	1 U	1 U	[62]	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	[5]	1 U
Total BTEX	(ug/l)		0.00	0.00	0.00	67.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

	SITE	NYSDEC	SHGP-53	SHGP-54	SHGP-54	SHGP-55	SHGP-55
CONSTITUENT	SAMPLE ID	SCG	SHGP-53(46-50)	SHGP-54(30-34)	SHGP-54(4-8)	SHGP-55(30-34)	SHGP-55(6-10)
	DATE		05/23/2002	05/09/2002	05/09/2002	05/03/2002	05/03/2002
Methyltert-butylether	(ug/l)	10	1 U	1	8	1 U	1 U
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	[1]
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	1.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-56 SHGP-56(30-34) 05/01/2002	SHGP-56 SHGP-56(2.5-6.5 05/01/2002	SHGP-57 SHGP-57(30-34) 05/09/2002	SHGP-57 SHGP-57(5-9) 05/09/2002	SHGP-58 SHGP-58 (46-50) 05/31/2002
Methyltert-butylether	(ug/l)	10	---	---	---	---	1 U
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
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	1

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-25
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS AND MTBE

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-58 SHGP-58 (30-34) 05/31/2002	SHGP-58 SHGP-58 (8-12) 05/31/2002	SHGP-59 SHGP-59(7-11) 05/30/2002	SHGP-59 SHGP-59(30-34) 05/30/2002	SHGP-59 SHGP-59(46-50) 05/30/2002
Methyltert-butylether	(ug/l)	10	1 U	1 U	1 U	1 U	1 U
Benzene	(ug/l)	1.0	[20]	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	1	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	1 U	2	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)		21	2	0.00	0.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-31 SHGP-31(30-34) 04/05/2002	SHGP-31 SHGP-31(4-8) 04/05/2002	SHGP-32 SHGP-32(6.5-10) 04/17/2002	SHGP-32 SHGP-32(30-34) 04/17/2002	SHGP-33 SHGP-33(30-34) 04/12/2002
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	7 J	10 U	5 J	10 U
Dibenzofuran	(ug/l)		10 U	3 J	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	2 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	3 J	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	3 J	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	[1] J	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	[1] J	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	[1] J	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	[1] J	[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	4.00	0.00	0.00
Total PAHs	(ug/l)		0.00	10.00	12.00	5.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC	SHGP-33	SHGP-34	SHGP-34	SHGP-34	SHGP-34
	SAMPLE ID	SCG	SHGP-33(4-8)	SHGP-34(30-34)	SHGP-34(4-8)	SHGP-34(71-75)	SHGP-34(56-60)
	DATE		04/12/2002	04/03/2002	04/03/2002	04/24/2002	04/24/2002
Naphthalene	(ug/l)	10	2 J	[370] D	[40]	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	20	1 J	10 U	10 U
Acenaphthylene	(ug/l)		3 J	45	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	[33]	[58]	[30]	10 U	10 U
Dibenzofuran	(ug/l)		10 U	3 J	10 U	10 U	10 U
Fluorene	(ug/l)	50	8 J	19	8 J	10 U	10 U
Phenanthrene	(ug/l)	50	13	29	3 J	10 U	10 U
Anthracene	(ug/l)	50	5 J	1 J	2 J	10 U	10 U
Fluoranthene	(ug/l)	50	8 J	2 J	10 U	10 U	10 U
Pyrene	(ug/l)	50	14	2 J	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	[3] J	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	[3] J	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	[3] 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	[3] J	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[2] J	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)		2 J	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		14.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		102.00	549.00	84.00	0.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-34 SHGP-34(41-45) 04/24/2002	SHGP-35 SHGP-35(30-34) 04/03/2002	SHGP-35 SHGP-35(6-10) 04/03/2002	SHGP-36 SHGP-36I 04/10/2002	SHGP-36 SHGP-36(4-8) 04/10/2002
Naphthalene	(ug/l)	10	10 U	[390] D	[390] D	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10	28	10 U	10 U
Acenaphthylene	(ug/l)		10 U	3 J	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	[76]	14	10 U	10 U
Dibenzofuran	(ug/l)		10 U	8 J	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	20	2 J	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	20	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	5 J	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	532.00	434.00	0.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-37 SHGP-37(30-34) 03/29/2002	SHGP-37 SHGP-37(2-6) 03/29/2002	SHGP-38 SHGP-38(30-34) 04/09/2002	SHGP-38 SHGP-38(2-6) 04/09/2002	SHGP-39 SHGP-39(30-34) 04/10/2002
Naphthalene	(ug/l)	10	[32]	[5200] D	10 U	4 J	10 U
2-Methylnaphthalene	(ug/l)		12	670 D	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	9 J	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	11	[360] DJ	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	11	10 U	10 U	10 U
Fluorene	(ug/l)	50	5 J	[80]	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	19	[150]	10 U	10 U	10 U
Anthracene	(ug/l)	50	5 J	[54]	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	6 J	[51]	10 U	2 J	10 U
Pyrene	(ug/l)	50	7 J	[57]	10 U	4 J	10 U
Benz(a)anthracene	(ug/l)	0.002	[2] J	[23]	10 U	[1] J	10 U
Chrysene	(ug/l)	0.002	[2] J	[29]	10 U	[1] J	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[13]	10 U	[1] J	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	[6] J	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[1] J	[15]	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	[7] J	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	2 J	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	8 J	10 U	1 J	10 U
Total CAPAHs	(ug/l)		5.00	103.00	0.00	3.00	0.00
Total PAHs	(ug/l)		102.00	6745.00	0.00	14.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-39 SHGP-39(4-8) 04/10/2002	SHGP-40 SHGP-40(30-34) 04/12/2002	SHGP-40 SHGP-40(5-9) 04/12/2002	SHGP-41 SHGP-41(30-34) 04/09/2002	SHGP-41 SHGP-41(6-10) 04/09/2002
Naphthalene	(ug/l)	10	[38]	10 U	[790] D	2 J	[2500] D
2-Methylnaphthalene	(ug/l)		10 U	10 U	5 J	10 U	180 DJ
Acenaphthylene	(ug/l)		10 U	10 U	10 U	10 U	3 J
Acenaphthene	(ug/l)	20	4 J	10 U	6 J	1 J	[100]
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	1 J
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U	26
Phenanthrene	(ug/l)	50	10 U	10 U	10 U	4 J	36
Anthracene	(ug/l)	50	10 U	10 U	10 U	4 J	6 J
Fluoranthene	(ug/l)	50	10 U	10 U	10 U	1 J	4 J
Pyrene	(ug/l)	50	10 U	10 U	10 U	1 J	4 J
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)		42.00	0.00	801.00	13.00	2860.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-42 SHGP-42(30-34) 04/01/2002	SHGP-42 SHGP-42(2-6) 04/01/2002	SHGP-43 SHGP-43(30-34) 03/28/2002	SHGP-43 SHGP-43(2-6) 03/28/2002	SHGP-44 SHGP-44(30-34) 04/11/2002
Naphthalene	(ug/l)	10	10 U	1 J	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	1.00	0.00	0.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-44 SHGP-44(4-8) 04/11/2002	SHGP-45 SHGP-45I(30-34) 04/16/2002	SHGP-45 SHGP-45S(2-6) 04/16/2002	SHGP-46 SHGP-46(30-34) 04/02/2002	SHGP-46 SHGP-46(2-6) 04/17/2002
Naphthalene	(ug/l)	10	[70]	10 U	8 J	10 U	10 U
2-Methylnaphthalene	(ug/l)		6 J	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	23	10 U	10 U
Acenaphthene	(ug/l)	20	19	10 U	1 J	10 U	10 U
Dibenzofuran	(ug/l)		3 J	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	3 J	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	2 J	10 U	5 J	10 U	2 J
Anthracene	(ug/l)	50	10 U	10 U	9 J	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	14	10 U	3 J
Pyrene	(ug/l)	50	10 U	10 U	28	10 U	3 J
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	[13]	10 U	[2] J
Chrysene	(ug/l)	0.002	10 U	10 U	[18]	10 U	[2] J
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	[22]	10 U	[2] J
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	[16]	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[22]	[10] U	[2] J
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	[20]	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	5 J	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	24	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	116.00	0.00	8.00
Total PAHs	(ug/l)		103.00	0.00	228.00	0.00	16.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-47 SHGP-47(30-34) 04/25/2002	SHGP-47 SHGP-47(4-8) 04/25/2002	SHGP-48 SHGP-48(30-34) 04/24/2002	SHGP-48 SHGP-48(7.5-11. 04/24/2002	SHGP-49 SHGP-49(30-34) 04/26/2002
Naphthalene	(ug/l)	10	10 U	[22]	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	24	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	[25]	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	2 J	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	13	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	5 J	38	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	7 J	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	2 J	11	10 U	10 U	10 U
Pyrene	(ug/l)	50	2 J	14	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	[3] J	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	[4] J	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[2] J	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	[2] J	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[3] J	[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	14.00	0.00	0.00	0.00
Total PAHs	(ug/l)		9.00	170.00	0.00	0.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-49 SHGP-49(2-6) 04/26/2002	SHGP-50 SHGP-50I(30-34) 04/30/2002	SHGP-50 SHGP-50S(4-8) 04/30/2002	SHGP-51 SHGP-51(30-34) 04/25/2002	SHGP-51 SHGP-51(4-8) 04/25/2002
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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

	SITE	NYSDEC	SHGP-52	SHGP-52	SHGP-52	SHGP-53	SHGP-53
CONSTITUENT	SAMPLE ID	SCG	SHGP-52(71-75)	SHGP-52(56-60)	SHGP-52(41-45)	SHGP-53(30-34)	SHGP-53(6-10)
	DATE		04/26/2002	04/26/2002	04/26/2002	05/03/2002	05/03/2002
Naphthalene	(ug/l)	10	10 U	10 U	10 U	[310]	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	4 J	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	30 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U	13 J	4 J
Dibenzofuran	(ug/l)		10 U	10 U	10 U	30 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	30 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	10 U	30 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U	30 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	10 U	30 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	10 U	30 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	30 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	30 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	30 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	30 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[30] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	30 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	30 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	30 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	327.00	4.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-53 SHGP-53(46-50) 05/23/2002	SHGP-54 SHGP-54(30-34) 05/09/2002	SHGP-54 SHGP-54(4-8) 05/09/2002	SHGP-55 SHGP-55(30-34) 05/03/2002	SHGP-55 SHGP-55(6-10) 05/03/2002
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	[80]
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	5 J
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	85.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-56 SHGP-56(30-34) 05/01/2002	SHGP-56 SHGP-56(2.5-6.5 05/01/2002	SHGP-57 SHGP-57(30-34) 05/09/2002	SHGP-57 SHGP-57(5-9) 05/09/2002	SHGP-58 SHGP-58 (46-50) 05/31/2002
Naphthalene	(ug/l)	10	10 U	3 J	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	1 J	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	4 J	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	2 J	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	3 J	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	2 J	6 J	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	2 J	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	1 J	3 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	[1] J	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	[2] J	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[2] J	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	[2] J	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	[2] J	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	3 J	10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	9.00	0.00	0.00	0.00
Total PAHs	(ug/l)		4.00	40.00	0.00	0.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-26
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/28/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-58 SHGP-58 (30-34) 05/31/2002	SHGP-58 SHGP-58 (8-12) 05/31/2002	SHGP-59 SHGP-59(7-11) 05/30/2002	SHGP-59 SHGP-59(30-34) 05/30/2002	SHGP-59 SHGP-59(46-50) 05/30/2002
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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-27
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
PORE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHPW-01 SHPW-01 05/08/2002	SHPW-02 SHPW-02 05/09/2002	SHPW-03 SHPW-03 05/09/2002	SHPW-04 SHPW-04 05/09/2002	SHPW-05 SHPW-05 05/09/2002
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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-27
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
PORE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHPW-06 SHPW-06 05/09/2002	SHPW-07 SHPW-07 05/08/2002	SHPW-08 SHPW-08 05/08/2002
Benzene	(ug/l)	1.0	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	1 U
Total BTEX	(ug/l)		0.00	0.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-28
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
PORE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHPW-01 SHPW-01 05/08/2002	SHPW-02 SHPW-02 05/09/2002	SHPW-03 SHPW-03 05/09/2002	SHPW-04 SHPW-04 05/09/2002	SHPW-05 SHPW-05 05/09/2002
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	2 J	1 J	1 J	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)		2.00	1.00	1.00	0.00	0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-28
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
PORE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHPW-06 SHPW-06 05/09/2002	SHPW-07 SHPW-07 05/08/2002	SHPW-08 SHPW-08 05/08/2002
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	1 J
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	2 J
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	1 J
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	4.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-29
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHSW-01 SHSW-01B 05/08/2002	SHSW-01 SHSW-01B+12 05/08/2002	SHSW-02 SHSW-02B 05/09/2002	SHSW-02 SHSW-02B+12 05/09/2002	SHSW-03 SHSW-03B 05/08/2002
Benzene	(ug/l)	10	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	4.5	1 U	1 U	1 U	1 U	1 U
Toluene	(ug/l)	6000	1 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	19	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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-29
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHSW-03 SHSW-03B+12 05/08/2002	SHSW-04 SHSW-04B 05/08/2002	SHSW-04 SHSW-04B+12 05/08/2002	SHSW-05 SHSW-05B 05/08/2002	SHSW-05 SHSW-05B+12 05/08/2002
Benzene	(ug/l)	10	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	4.5	1 U	1 U	1 U	1 U	1 U
Toluene	(ug/l)	6000	1 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	19	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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-29
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHSW-06 SHSW-06B 05/08/2002	SHSW-06 SHSW-06B+12 05/08/2002	SHSW-07 SHSW-07B 05/08/2002	SHSW-07 SHSW-07B+12 05/08/2002	SHSW-08 SHSW-08B 05/08/2002
Benzene	(ug/l)	10	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	4.5	1 U	1 U	1 U	1 U	1 U
Toluene	(ug/l)	6000	1 U	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	19	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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-29
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHSW-08 SHSW-08B+12 05/08/2002
Benzene	(ug/l)	10	1 U
Ethylbenzene	(ug/l)	4.5	1 U
Toluene	(ug/l)	6000	1 U
Xylene (total)	(ug/l)	19	1
Total BTEX	(ug/l)		1.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-30
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHSW-01 SHSW-01B 05/08/2002	SHSW-01 SHSW-01B+12 05/08/2002	SHSW-02 SHSW-02B 05/09/2002	SHSW-02 SHSW-02B+12 05/09/2002	SHSW-03 SHSW-03B 05/08/2002
Naphthalene	(ug/l)	16	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)	4.2	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)	6.6	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)	2.5	10 U	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	1.5	10 U	10 U	10 U	10 U	10 U
Anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Pyrene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Chrysene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0.0006	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	(ug/l)		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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-30
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHSW-03 SHSW-03B+12 05/08/2002	SHSW-04 SHSW-04B 05/08/2002	SHSW-04 SHSW-04B+12 05/08/2002	SHSW-05 SHSW-05B 05/08/2002	SHSW-05 SHSW-05B+12 05/08/2002
Naphthalene	(ug/l)	16	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)	4.2	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)	6.6	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)	2.5	10 U	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	1.5	10 U	10 U	10 U	10 U	10 U
Anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Pyrene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Chrysene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0.0006	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	(ug/l)		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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-30
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHSW-06 SHSW-06B 05/08/2002	SHSW-06 SHSW-06B+12 05/08/2002	SHSW-07 SHSW-07B 05/08/2002	SHSW-07 SHSW-07B+12 05/08/2002	SHSW-08 SHSW-08B 05/08/2002
Naphthalene	(ug/l)	16	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)	4.2	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)	6.6	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)	2.5	10 U	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	1.5	10 U	10 U	10 U	10 U	10 U
Anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Pyrene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Chrysene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)		10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0.0006	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	(ug/l)		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 : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-30
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/08/2002 thru 05/09/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHSW-08 SHSW-08B+12 05/08/2002
Naphthalene	(ug/l)	16	10 U
2-Methylnaphthalene	(ug/l)	4.2	10 U
Acenaphthylene	(ug/l)		10 U
Acenaphthene	(ug/l)	6.6	10 U
Dibenzofuran	(ug/l)		10 U
Fluorene	(ug/l)	2.5	10 U
Phenanthrene	(ug/l)	1.5	10 U
Anthracene	(ug/l)		10 U
Fluoranthene	(ug/l)		10 U
Pyrene	(ug/l)		10 U
Benz(a)anthracene	(ug/l)		10 U
Chrysene	(ug/l)		10 U
Benzo(b)fluoranthene	(ug/l)		10 U
Benzo(k)fluoranthene	(ug/l)		10 U
Benzo(a)pyrene	(ug/l)	0.0006	10 U
Indeno(1,2,3-cd)pyrene	(ug/l)		10 U
Dibenz(a,h)anthracene	(ug/l)		10 U
Benzo(g,h,i)perylene	(ug/l)		10 U
Total CAPAHs	(ug/l)		0.00
Total PAHs	(ug/l)		0.00

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-31
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SEDIMENT SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/08/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSD-01 SHSD-01(0-6) 05/08/2002 0.00	SHSD-01 SHSD-01(6-12) 05/08/2002 0.50	SHSD-02 SHSD-02(0-6) 05/09/2002 0.00	SHSD-02 SHSD-02(6-12) 05/09/2002 0.50	SHSD-03 SHSD-03(0-6) 05/10/2002 0.00
Benzene	(mg/kg)	0.52	0.002 U	0.002 U	0.001 U	0.001 U	0.002 U
Toluene	(mg/kg)	0.90	0.002 U	0.002 U	0.001 U	0.001 U	0.002 U
Ethyl benzene	(mg/kg)	0.128	0.002 U	0.002 U	0.001 U	0.001 U	0.002 U
Xylene (total)	(mg/kg)	0.54	0.002 U	0.002 U	0.001 U	0.001 U	0.002 U
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.00	0.00

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

*: SCG for Class SA Saltwater, benthic aquatic life chronic toxicity, based on total organic carbon of 2.00%

TABLE C-31
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SEDIMENT SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/08/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSD-03 SHSD-03(6-12) 05/10/2002 0.50	SHSD-04 SHSD-04(0-6) 05/10/2002 0.00	SHSD-04 SHSD-04(6-12) 05/10/2002 0.50	SHSD-05 SHSD-05(0-6) 05/10/2002 0.00	SHSD-05 SHSD-05(6-12) 05/10/2002 0.50
Benzene	(mg/kg)	0.52	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	0.90	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	0.128	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	0.54	0.002 U	0.001 U	0.001 U	0.001	0.001 U
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.001	0.00

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

*: SCG for Class SA Saltwater, benthic aquatic life chronic toxicity, based on total organic carbon of 2.00%

TABLE C-31
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SEDIMENT SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/08/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSD-06 SHSD-06(0-6) 05/09/2002 0.00	SHSD-06 SHSD-06(6-12) 05/09/2002 0.50	SHSD-07 SHSD-07(0-6) 05/08/2002 0.00	SHSD-07 SHSD-07(6-12) 05/08/2002 0.50	SHSD-08 SHSD-08(0-6) 05/08/2002 0.00
Benzene	(mg/kg)	0.52	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	(mg/kg)	0.90	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethyl benzene	(mg/kg)	0.128	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	(mg/kg)	0.54	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 : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

*: SCG for Class SA Saltwater, benthic aquatic life chronic toxicity, based on total organic carbon of 2.00%

TABLE C-31
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SEDIMENT SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 05/08/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSD-08 SHSD-08(6-12) 05/08/2002 0.50	SHSD-09 SHSD-09(0-6) 05/10/2002 0.00	SHSD-10 SHSD-10(0-6) 05/10/2002 0.00
Benzene	(mg/kg)	0.52	0.001 U	0.002 U	0.003 U
Toluene	(mg/kg)	0.90	0.001 U	0.002 U	0.003 U
Ethyl benzene	(mg/kg)	0.128	0.001 U	0.002 U	0.003 U
Xylene (total)	(mg/kg)	0.54	0.001 U	0.027	0.003 U
Total BTEX	(mg/kg)		0.00	0.027	0.00

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

*: SCG for Class SA Saltwater, benthic aquatic life chronic toxicity, based on total organic carbon of 2.00%

TABLE C-32
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SEDIMENT SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/08/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSD-01 SHSD-01(0-6) 05/08/2002 0.00	SHSD-01 SHSD-01(6-12) 05/08/2002 0.50	SHSD-02 SHSD-02(0-6) 05/09/2002 0.00	SHSD-02 SHSD-02(6-12) 05/09/2002 0.50	SHSD-03 SHSD-03(0-6) 05/10/2002 0.00
Naphthalene	(mg/kg)	0.76	0.65 U	0.5 U	0.42 U	0.4 U	0.54 U
2-Methylnaphthalene	(mg/kg)	0.60	0.65 U	0.5 U	0.42 U	0.4 U	0.54 U
Acenaphthylene	(mg/kg)		1.2	0.5 U	0.1 J	0.047 J	0.2 J
Acenaphthene	(mg/kg)	4.80	0.65 U	0.5 U	0.42 U	0.4 U	0.54 U
Dibenzofuran	(mg/kg)		0.65 U	0.5 U	0.42 U	0.4 U	0.54 U
Fluorene	(mg/kg)	0.76	0.65 U	0.5 U	0.42 U	0.4 U	0.54 U
Phenanthrene	(mg/kg)	3.20	0.22 J	0.5 U	0.42 U	0.4 U	0.12 J
Anthracene	(mg/kg)		0.54 J	0.5 U	0.42 U	0.34 J	0.1 J
Fluoranthene	(mg/kg)	26.80	1.6	0.051 J	0.39 J	0.35 J	1.1
Pyrene	(mg/kg)		7	0.26 J	0.65	0.57	1.8
Benz(a)anthracene	(mg/kg)		1.8	0.5 U	0.17 J	0.17 J	0.5 J
Chrysene	(mg/kg)		2.3	0.5 U	0.23 J	0.46	0.75
Benzo(b)fluoranthene	(mg/kg)		2.1	0.5 U	0.18 J	0.13 J	0.62
Benzo(k)fluoranthene	(mg/kg)		1.4	0.5 U	0.11 J	0.062 J	0.334 J
Benzo(a)pyrene	(mg/kg)		2.6	0.5 U	0.18 J	0.12 J	0.59
Indeno(1,2,3-cd)pyrene	(mg/kg)		1.1	0.5 U	0.09 J	0.4 U	0.24 J
Dibenz(a,h)anthracene	(mg/kg)		0.32 J	0.5 U	0.42 U	0.4 U	0.52 U
Benzo(g,h,i)perylene	(mg/kg)		1.5	0.5 U	0.13 J	0.4 U	0.32 J
Total CAPAHs	(mg/kg)		11.62	0.00	0.96	0.942	3.36
Total PAHs	(mg/kg)		23.68	0.311	2.23	2.249	6.68

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

*: SCG for Class SA Saltwater, benthic aquatic life chronic toxicity, based on total organic carbon of 2.00%

TABLE C-32
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SEDIMENT SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/08/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSD-03 SHSD-03(6-12) 05/10/2002 0.50	SHSD-04 SHSD-04(0-6) 05/10/2002 0.00	SHSD-04 SHSD-04(6-12) 05/10/2002 0.50	SHSD-05 SHSD-05(0-6) 05/10/2002 0.00	SHSD-05 SHSD-05(6-12) 05/10/2002 0.50
Naphthalene	(mg/kg)	0.76	0.52 U	0.4 U	0.43 U	0.42 U	0.42 U
2-Methylnaphthalene	(mg/kg)	0.60	0.52 U	0.4 U	0.43 U	0.42 U	0.42 U
Acenaphthylene	(mg/kg)		0.26 J	0.22 J	0.15 J	0.085 J	0.13 J
Acenaphthene	(mg/kg)	4.80	0.52 U	0.4 U	0.43 U	0.42 U	0.42 U
Dibenzofuran	(mg/kg)		0.52 U	0.4 U	0.43 U	0.42 U	0.42 U
Fluorene	(mg/kg)	0.76	0.52 U	0.4 U	0.43 U	0.42 U	0.42 U
Phenanthrene	(mg/kg)	3.20	0.12 J	0.055 J	0.43 U	0.42 U	0.077 J
Anthracene	(mg/kg)		0.14 J	0.09 J	0.066 J	0.42 U	0.049 J
Fluoranthene	(mg/kg)	26.80	0.79	0.7	0.4 J	0.23 J	0.5
Pyrene	(mg/kg)		1.6	1.6	0.95	0.52	1.1
Benz(a)anthracene	(mg/kg)		0.52 J	0.53	0.37 J	0.15 J	0.32 J
Chrysene	(mg/kg)		0.72	0.56	0.41 J	0.19 J	0.41 J
Benzo(b)fluoranthene	(mg/kg)		0.57	0.61	0.35 J	0.2 J	0.36 J
Benzo(k)fluoranthene	(mg/kg)		0.39 J	0.38 J	0.2 J	0.11 J	0.26 J
Benzo(a)pyrene	(mg/kg)		0.64	0.7	0.4 J	0.18 J	0.37 J
Indeno(1,2,3-cd)pyrene	(mg/kg)		0.3 J	0.29 J	0.17 J	0.086 J	0.16 J
Dibenz(a,h)anthracene	(mg/kg)		0.52 U	0.4 U	0.43 U	0.42 U	0.42 U
Benzo(g,h,i)perylene	(mg/kg)		0.4 J	0.4 J	0.25 J	0.12 J	0.22 J
Total CAPAHs	(mg/kg)		3.14	3.07	1.90	0.916	1.88
Total PAHs	(mg/kg)		6.45	6.136	3.716	1.871	3.956

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

*: SCG for Class SA Saltwater, benthic aquatic life chronic toxicity, based on total organic carbon of 2.00%

TABLE C-32
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SEDIMENT SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/08/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE		SHSD-06	SHSD-06	SHSD-07	SHSD-07	SHSD-08
	SAMPLE ID	NYSDEC	SHSD-06(0-6)	SHSD-06(6-12)	SHSD-07(0-6)	SHSD-07(6-12)	SHSD-08(0-6)
	DATE	SCG	05/09/2002	05/09/2002	05/08/2002	05/08/2002	05/08/2002
	DEPTH (ft)		0.00	0.50	0.00	0.50	0.00
Naphthalene	(mg/kg)	0.76	0.41 U	0.42 U	0.46 U	0.46 U	0.064 J
2-Methylnaphthalene	(mg/kg)	0.60	0.41 U	0.42 U	0.46 U	0.46 U	0.46 U
Acenaphthylene	(mg/kg)		0.048 J	0.065 J	0.46 U	0.46 U	0.91
Acenaphthene	(mg/kg)	4.80	0.41 U	0.42 U	0.46 U	0.46 U	0.12 J
Dibenzofuran	(mg/kg)		0.41 U	0.42 U	0.46 U	0.46 U	0.049 J
Fluorene	(mg/kg)	0.76	0.41 U	0.42 U	0.46 U	0.46 U	0.15 J
Phenanthrene	(mg/kg)	3.20	0.05 J	0.098 J	0.46 U	0.46 U	1.3
Anthracene	(mg/kg)		0.073 J	0.066 J	0.46 U	0.46 U	0.82
Fluoranthene	(mg/kg)	26.80	0.33 J	0.41 J	0.46 U	0.46 U	7.1 D
Pyrene	(mg/kg)		0.53	0.66	0.46 U	0.46 U	11 D
Benz(a)anthracene	(mg/kg)		0.2 J	0.21 J	0.46 U	0.46 U	4.3
Chrysene	(mg/kg)		0.30 J	0.33 J	0.46 U	0.46 U	5.2
Benzo(b)fluoranthene	(mg/kg)		0.22 J	0.29 J	0.46 U	0.46 U	4.9
Benzo(k)fluoranthene	(mg/kg)		0.15 J	0.14 J	0.46 U	0.46 U	1.9
Benzo(a)pyrene	(mg/kg)		0.18 J	0.22 J	0.46 U	0.46 U	4.3
Indeno(1,2,3-cd)pyrene	(mg/kg)		0.068 J	0.086 J	0.46 U	0.46 U	1.9
Dibenz(a,h)anthracene	(mg/kg)		0.41 U	0.42 U	0.46 U	0.46 U	0.55
Benzo(g,h,i)perylene	(mg/kg)		0.41 U	0.42 U	0.46 U	0.46 U	2.2
Total CAPAHs	(mg/kg)		1.148	1.276	0.00	0.00	23.05
Total PAHs	(mg/kg)		2.149	2.575	0.00	0.00	46.763

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

*: SCG for Class SA Saltwater, benthic aquatic life chronic toxicity, based on total organic carbon of 2.00%

TABLE C-32
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SEDIMENT SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 05/08/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSD-08 SHSD-08(6-12) 05/08/2002 0.50	SHSD-09 SHSD-09(0-6) 05/10/2002 0.00	SHSD-10 SHSD-10(0-6) 05/10/2002 0.00
Naphthalene	(mg/kg)	0.76	0.41 U	0.94 U	0.91 U
2-Methylnaphthalene	(mg/kg)	0.60	0.41 U	0.94 U	0.91 U
Acenaphthylene	(mg/kg)		0.18 J	0.94 U	0.11 J
Acenaphthene	(mg/kg)	4.80	0.41 U	0.94 U	0.91 U
Dibenzofuran	(mg/kg)		0.41 U	0.94 U	0.91 U
Fluorene	(mg/kg)	0.76	0.41 U	0.94 U	0.91 U
Phenanthrene	(mg/kg)	3.20	0.21 J	0.94 U	0.91 U
Anthracene	(mg/kg)		0.11 J	0.94 U	0.91 U
Fluoranthene	(mg/kg)	26.80	0.8	0.28 J	0.34 J
Pyrene	(mg/kg)		1.3	0.67 J	1.4
Benz(a)anthracene	(mg/kg)		0.63	0.22 J	0.31 J
Chrysene	(mg/kg)		0.83	0.37 J	0.48 J
Benzo(b)fluoranthene	(mg/kg)		0.69	0.31 J	0.7 J
Benzo(k)fluoranthene	(mg/kg)		0.37 J	0.17 J	0.34 J
Benzo(a)pyrene	(mg/kg)		0.7	0.2 J	0.36 J
Indeno(1,2,3-cd)pyrene	(mg/kg)		0.31 J	0.94 U	0.91 U
Dibenz(a,h)anthracene	(mg/kg)		0.41 U	0.94 U	0.91 U
Benzo(g,h,i)perylene	(mg/kg)		0.4 J	0.94 U	0.91 U
Total CAPAHs	(mg/kg)		3.54	1.27	2.19
Total PAHs	(mg/kg)		6.54	2.22	4.04

mg/kg : millogram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

*: SCG for Class SA Saltwater, benthic aquatic life chronic toxicity, based on total organic carbon of 2.00%

TABLE C-33
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SEDIMENT SAMPLE RESULTS
TOTAL ORGANIC CARBON

PERIOD: From 05/08/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Soil

	SITE	SHSD-01	SHSD-01	SHSD-02	SHSD-02	SHSD-03	SHSD-03
	SAMPLE ID	SHSD-01(0-6)	SHSD-01(6-12)	SHSD-02(0-6)	SHSD-02(6-12)	SHSD-03(0-6)	SHSD-03(6-12)
CONSTITUENT	DATE	05/08/2002	05/08/2002	05/09/2002	05/09/2002	05/10/2002	05/10/2002
	DEPTH (ft)	0.00	0.50	0.00	0.50	0.00	0.50
TOC	(%)	9.3	0.7	0.5	0.5	0.2	1.1

Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-33
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SEDIMENT SAMPLE RESULTS
TOTAL ORGANIC CARBON

PERIOD: From 05/08/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	SHSD-04 SHSD-04(0-6) 05/10/2002 0.00	SHSD-04 SHSD-04(6-12) 05/10/2002 0.50	SHSD-05 SHSD-05(0-6) 05/10/2002 0.00	SHSD-05 SHSD-05(6-12) 05/10/2002 0.50	SHSD-06 SHSD-06(0-6) 05/09/2002 0.00	SHSD-06 SHSD-06(6-12) 05/09/2002 0.50
TOC	(%)	0.4	0.5	2.7	1.2	0.6	0.7

Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-33
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
SURFACE WATER SEDIMENT SAMPLE RESULTS
TOTAL ORGANIC CARBON

PERIOD: From 05/08/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	SHSD-07 SHSD-07(0-6) 05/08/2002 0.00	SHSD-07 SHSD-07(6-12) 05/08/2002 0.50	SHSD-08 SHSD-08(0-6) 05/08/2002 0.00	SHSD-08 SHSD-08(6-12) 05/08/2002 0.50	SHSD-09 SHSD-09(0-6) 05/10/2002 0.00	SHSD-10 SHSD-10(0-6) 05/10/2002 0.00
TOC	(%)	1.8	2.3	1.2	0.6	7.4	5.7

Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-34
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER SEEP SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 05/10/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHROSE-01 SHROSE-01 05/10/2002
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	7
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
Benzene	(ug/l)	1.0	5 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-34
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER SEEP SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 05/10/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHROSE-01 SHROSE-01 05/10/2002
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U
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
Toluene	(ug/l)	5	5 U
Chlorobenzene	(ug/l)	5	5 U
Ethylbenzene	(ug/l)	5	5 U
Styrene	(ug/l)	5	5 U
Xylene (total)	(ug/l)	5	5 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-35
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER SEEP SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 05/10/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHROSE-01 SHROSE-01 05/10/2002
Phenol	(ug/l)	1	10 U
Bis(2-chloroethyl)ether	(ug/l)	1	10 U
2-Chlorophenol	(ug/l)	1	10 U
1,3-Dichlorobenzene	(ug/l)	3	10 U
1,4-Dichlorobenzene	(ug/l)	3	10 U
1,2-Dichlorobenzene	(ug/l)	3	10 U
2-Methylphenol	(ug/l)	1	10 U
Bis(2-chloro-1-methylethyl)ether	(ug/l)		10 U
4-Methylphenol	(ug/l)	1	10 U
N-Nitrosodipropylamine	(ug/l)		10 U
Hexachloroethane	(ug/l)	5	10 U
Nitrobenzene	(ug/l)	0.4	10 U
Isophorone	(ug/l)	50	10 U
2-Nitrophenol	(ug/l)	1	10 U
2,4-Dimethylphenol	(ug/l)	50	10 U
Bis(2-chloroethoxy)methane	(ug/l)	5	10 U
2,4-Dichlorophenol	(ug/l)	5	10 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U
Naphthalene	(ug/l)	10	10 U
4-Chloroaniline	(ug/l)	5	10 U
Hexachlorobutadiene	(ug/l)	0.5	10 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-35
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER SEEP SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 05/10/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHROSE-01 SHROSE-01 05/10/2002
4-Chloro-3-methylphenol	(ug/l)	1	10 U
2-Methylnaphthalene	(ug/l)		10 U
Hexachlorocyclopentadiene	(ug/l)	5	10 U
2,4,6-Trichlorophenol	(ug/l)	1	10 U
2,4,5-Trichlorophenol	(ug/l)	1	20 U
2-Chloronaphthalene	(ug/l)	10	10 U
2-Nitroaniline	(ug/l)	5	20 U
Dimethyl phthalate	(ug/l)	50	10 U
Acenaphthylene	(ug/l)		10 U
2,6-Dinitrotoluene	(ug/l)	5	10 U
3-Nitroaniline	(ug/l)	5	20 U
Acenaphthene	(ug/l)	20	10 U
2,4-Dinitrophenol	(ug/l)	10	20 U
4-Nitrophenol	(ug/l)	1	20 U
Dibenzofuran	(ug/l)		10 U
2,4-Dinitrotoluene	(ug/l)	5	10 U
Diethyl phthalate	(ug/l)	50	10 U
4-Chlorophenyl phenyl ether	(ug/l)		10 U
Fluorene	(ug/l)	50	10 U
4-Nitroaniline	(ug/l)	5	20 U
4,6-Dinitro-2-methylphenol	(ug/l)		20 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-35
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER SEEP SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 05/10/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHROSE-01 SHROSE-01 05/10/2002
N-Nitrosodiphenylamine	(ug/l)	50	10 U
4-Bromophenyl phenyl ether	(ug/l)		10 U
Hexachlorobenzene	(ug/l)	0.04	10 U
Pentachlorophenol	(ug/l)	1	20 U
Phenanthrene	(ug/l)	50	10 U
Anthracene	(ug/l)	50	10 U
Carbazole	(ug/l)		10 U
Di-n-butyl phthalate	(ug/l)	50	10 U
Fluoranthene	(ug/l)	50	10 U
Pyrene	(ug/l)	50	10 U
Butyl benzyl phthalate	(ug/l)	50	10 U
3,3-Dichlorobenzidine	(ug/l)	5	10 U
Benzo(a)anthracene	(ug/l)	0.002	10 U
Chrysene	(ug/l)	0.002	10 U
Bis(2-ethylhexyl)phthalate	(ug/l)	5	10 U
Di-n-octyl phthalate	(ug/l)	50	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U
Dibenzo(a,h)anthracene	(ug/l)		10 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-35
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
GROUNDWATER SEEP SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 05/10/2002 thru 05/10/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHROSE-01 SHROSE-01 05/10/2002
Benzo(ghi)perylene	(ug/l)		10 U

ug/l : microgram/liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-36
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD REMEDIAL INVESTIGATION
TAP WATER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 05/31/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDOH SCG	SHTW-01 SHTW01 05/31/2002 0.00	SHTW-01A SHTW-01A 05/31/2002 0.00	SHTW-02 SHTW-02 05/31/2002 0.00
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)	50	5 U	5 U	1 J
1,2-Dichloroethane	(ug/l)	5	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	5 U	5 U	5 U
1,2-Dichloropropane	(ug/l)	5	5 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	5	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
Benzene	(ug/l)	5	5 U	5 U	5 U

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-36
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD REMEDIAL INVESTIGATION
TAP WATER SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 05/31/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDOH SCG	SHTW-01 SHTW01 05/31/2002 0.00	SHTW-01A SHTW-01A 05/31/2002 0.00	SHTW-02 SHTW-02 05/31/2002 0.00
trans-1,3-Dichloropropene	(ug/l)	5	5 U	5 U	5 U
Bromoform	(ug/l)	50	5 U	5 U	5 U
4-Methyl-2-pentanone	(ug/l)	50	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	5 U	5 U	5 U
Chlorobenzene	(ug/l)	5	5 U	5 U	5 U
Ethylbenzene	(ug/l)	5	5 U	5 U	5 U
Styrene	(ug/l)	5	5 U	5 U	5 U
Xylene (total)	(ug/l)	5	5 U	5 U	5 U

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-37
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD REMEDIAL INVESTIGATION
TAP WATER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 05/31/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDOH SCG	SHTW-01 SHTW01 05/31/2002 0.00	SHTW-01A SHTW-01A 05/31/2002 0.00	SHTW-02 SHTW-02 05/31/2002 0.00
Phenol	(ug/l)	50	10 U	10 U	10 U
Bis(2-chloroethyl)ether	(ug/l)	50	10 U	10 U	10 U
2-Chlorophenol	(ug/l)	50	10 U	10 U	10 U
1,3-Dichlorobenzene	(ug/l)	5	10 U	10 U	10 U
1,4-Dichlorobenzene	(ug/l)	5	10 U	10 U	10 U
1,2-Dichlorobenzene	(ug/l)	5	10 U	10 U	10 U
2-Methylphenol	(ug/l)	50	10 U	10 U	10 U
Bis(2-chloro-1-methylethyl)ether	(ug/l)	50	10 U	10 U	10 U
4-Methylphenol	(ug/l)	50	10 U	10 U	10 U
N-Nitrosodipropylamine	(ug/l)	50	10 U	10 U	10 U
Hexachloroethane	(ug/l)	50	10 U	10 U	10 U
Nitrobenzene	(ug/l)	50	10 U	10 U	10 U
Isophorone	(ug/l)	50	10 U	10 U	10 U
2-Nitrophenol	(ug/l)	50	10 U	10 U	10 U
2,4-Dimethylphenol	(ug/l)	50	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	(ug/l)	50	10 U	10 U	10 U
2,4-Dichlorophenol	(ug/l)	50	10 U	10 U	10 U
1,2,4-Trichlorobenzene	(ug/l)	5	10 U	10 U	10 U
Naphthalene	(ug/l)	50	10 U	10 U	10 U
4-Chloroaniline	(ug/l)	50	10 U	10 U	10 U
Hexachlorobutadiene	(ug/l)	5	10 U	10 U	10 U

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-37
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD REMEDIAL INVESTIGATION
TAP WATER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 05/31/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		SHTW-01	SHTW-01A	SHTW-02
	SAMPLE ID	NYSDOH	SHTW01	SHTW-01A	SHTW-02
CONSTITUENT	DATE	SCG	05/31/2002	05/31/2002	05/31/2002
	DEPTH (ft)		0.00	0.00	0.00
4-Chloro-3-methylphenol	(ug/l)	50	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)	50	10 U	10 U	10 U
Hexachlorocyclopentadiene	(ug/l)	50	10 U	10 U	10 U
2,4,6-Trichlorophenol	(ug/l)	50	10 U	10 U	10 U
2,4,5-Trichlorophenol	(ug/l)	50	20 U	20 U	20 U
2-Chloronaphthalene	(ug/l)	50	10 U	10 U	10 U
2-Nitroaniline	(ug/l)	50	20 U	20 U	20 U
Dimethyl phthalate	(ug/l)	50	10 U	10 U	10 U
Acenaphthylene	(ug/l)	50	10 U	10 U	10 U
2,6-Dinitrotoluene	(ug/l)	50	10 U	10 U	10 U
3-Nitroaniline	(ug/l)	50	20 U	20 U	20 U
Acenaphthene	(ug/l)	50	10 U	10 U	10 U
2,4-Dinitrophenol	(ug/l)	50	20 U	20 U	20 U
4-Nitrophenol	(ug/l)	50	20 U	20 U	20 U
Dibenzofuran	(ug/l)	50	10 U	10 U	10 U
2,4-Dinitrotoluene	(ug/l)	50	10 U	10 U	10 U
Diethyl phthalate	(ug/l)	50	10 U	10 U	10 U
4-Chlorophenyl phenyl ether	(ug/l)	50	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U
4-Nitroaniline	(ug/l)	50	20 U	20 U	20 U
4,6-Dinitro-2-methylphenol	(ug/l)	50	20 U	20 U	20 U

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-37
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD REMEDIAL INVESTIGATION
TAP WATER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 05/31/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDOH SCG	SHTW-01 SHTW01 05/31/2002 0.00	SHTW-01A SHTW-01A 05/31/2002 0.00	SHTW-02 SHTW-02 05/31/2002 0.00
N-Nitrosodiphenylamine	(ug/l)	50	10 U	10 U	10 U
4-Bromophenyl phenyl ether	(ug/l)	50	10 U	10 U	10 U
Hexachlorobenzene	(ug/l)	1	10 U	10 U	10 U
Pentachlorophenol	(ug/l)	1	20 U	20 U	20 U
Phenanthrene	(ug/l)	50	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U
Carbazole	(ug/l)	50	10 U	10 U	10 U
Di-n-butyl phthalate	(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
Butyl benzyl phthalate	(ug/l)	50	10 U	10 U	10 U
3,3-Dichlorobenzidine	(ug/l)	50	10 U	10 U	10 U
Benzo(a)anthracene	(ug/l)	50	10 U	10 U	10 U
Chrysene	(ug/l)	50	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	(ug/l)	6	10 U	10 U	10 U
Di-n-octyl phthalate	(ug/l)	50	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	50	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	50	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0.2	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	(ug/l)	50	10 U	10 U	10 U
Dibenzo(a,h)anthracene	(ug/l)	50	10 U	10 U	10 U

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-37
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD REMEDIAL INVESTIGATION
TAP WATER SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

PERIOD: From 05/31/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDOH SCG	SHTW-01 SHTW01 05/31/2002 0.00	SHTW-01A SHTW-01A 05/31/2002 0.00	SHTW-02 SHTW-02 05/31/2002 0.00
Benzo(ghi)perylene	(ug/l)	50	10 U	10 U	10 U

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-38
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD REMEDIAL INVESTIGATION
TAP WATER SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 05/31/2002 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDOH SCG	SHTW-01 SHTW01 05/31/2002 0.00	SHTW-01A SHTW-01A 05/31/2002 0.00	SHTW-02 SHTW-02 05/31/2002 0.00
Arsenic	(ug/l)	50	3.0 U	3.0 U	3.0 U
Barium	(ug/l)	2000	16.7 B	20.7 B	63.5 B
Cadmium	(ug/l)	5	2.0 U	2.0 U	2.0 U
Chromium	(ug/l)	100	3.0 U	3.0 U	3.0 U
Lead	(ug/l)	15	2.6 B	1.0 U	2.5 B
Mercury	(ug/l)	2	0.14 U	0.14 U	0.14 U
Selenium	(ug/l)	50	8.0 U	8.0 U	8.0 U
Silver	(ug/l)	100	2.0 U	2.0 U	2.0 U
Cyanide	(ug/l)	200	5.0 U	5.0 U	5.0 U

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-03 SHAA-03 04/12/2002	SHAA-04 SHAA-04 04/12/2002	SHAA-05 SHAA-05 04/12/2002	SHAA-06 SHAA-06 04/12/2002	SHAA-07 SHAA-07 04/12/2002	SHAA-08 SHAA-08 04/12/2002
1,1,1-Trichloroethane	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
1,1,2,2-Tetrachloroethane	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
1,1,2-Trichloroethane	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
1,1-Dichloroethane	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
1,1-Dichloroethylene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
1,2,4-Trichlorobenzene	(ppbv)	2.3	2	0.8 U	0.8 U	0.9 U	0.9 U
1,2-Dichloroethane	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
1,2-Dichloropropane	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
1,3-Butadiene	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
1,4-Dioxane	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
2-Hexanone	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
4-Ethyltoluene	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Acetone	(ppbv)	3.6	60	45	7.7	6.6	6.3
Benzene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Benzene, 1,2,4-trimethyl	(ppbv)	0.7 U	0.8 U	1.7	0.8 U	0.9 U	0.9 U
Benzene, 1,3,5-trimethyl-	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Bromodichloromethane	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Bromoform	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Carbon disulfide	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Carbon tetrachloride	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Chlorobenzene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-03 SHAA-03 04/12/2002	SHAA-04 SHAA-04 04/12/2002	SHAA-05 SHAA-05 04/12/2002	SHAA-06 SHAA-06 04/12/2002	SHAA-07 SHAA-07 04/12/2002	SHAA-08 SHAA-08 04/12/2002
Chloroethane	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Chloroform	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
cis-1,2-Dichloroethylene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
cis-1,3-Dichloropropene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Cryofluorane	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Cyclohexane	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Dibromochloromethane	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Dichlorodifluoromethane	(ppbv)	0.7 U	1.2	1.2	1.1	0.9 U	1.4
EDB	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Ethanol	(ppbv)	2.9 U	36	43	32	270	78
Ethene, 1,2-dichloro-, (E)-	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Ethylbenzene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Freon 113	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Heptane	(ppbv)	2.9 U	7	5.9	3.4 U	3.4 U	3.5 U
Hexachlorobutadiene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Isopropanol	(ppbv)	2.9 U	8	7.2	4.1	44	3.5 U
m/p-xylene	(ppbv)	2.7	2.6	2.1	0.8 U	0.9 U	0.9 U
m-Dichlorobenzene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Methyl bromide	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Methyl chloride	(ppbv)	2.6	0.8 U	0.8 U	0.8 U	1.2	0.9 U
Methyl ethyl ketone	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-03 SHAA-03 04/12/2002	SHAA-04 SHAA-04 04/12/2002	SHAA-05 SHAA-05 04/12/2002	SHAA-06 SHAA-06 04/12/2002	SHAA-07 SHAA-07 04/12/2002	SHAA-08 SHAA-08 04/12/2002
Methyl isobutylketone (MIBK)	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Methylene chloride	(ppbv)	1.2 U	1.2	1.2	1.2	1.2	3.6
Methyltert-butylether	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Naphthalene	(ppbv)	14 U	16 U	16 U	16 U	17 U	17 U
n-Hexane	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
o-Chlorotoluene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
o-Dichlorobenzene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
o-Xylene	(ppbv)	1.5	1.3	1.1	0.8 U	0.9 U	0.9 U
p-Dichlorobenzene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Propylene	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Styrene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Tetrachloroethylene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Tetrahydrofuran	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Toluene	(ppbv)	3.4	100	90	0.8 U	0.96	1
trans-1,3-Dichloropropene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Trichloroethylene	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U
Trichlorofluoromethane	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	1.1	0.9 U
Vinyl Acetate	(ppbv)	2.9 U	3.3 U	3.3 U	3.4 U	3.4 U	3.5 U
Vinyl chloride	(ppbv)	0.7 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

	SITE	SHAA-09	SHAA-10	SHAA-11	SHAA-12	SHAA-13	SHAA-14
CONSTITUENT	SAMPLE ID	SHAA-09	SHAA-10	SHAA-11	SHAA-12	SHAA-13	SHAA-14
	DATE	04/12/2002	04/12/2002	05/06/2002	05/06/2002	05/06/2002	05/06/2002
1,1,1-Trichloroethane	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
1,1,2,2-Tetrachloroethane	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
1,1,2-Trichloroethane	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	<0.9	0.9 U
1,1-Dichloroethane	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
1,1-Dichloroethylene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
1,2,4-Trichlorobenzene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
1,2-Dichloroethane	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
1,2-Dichloropropane	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
1,3-Butadiene	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
1,4-Dioxane	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
2-Hexanone	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
4-Ethyltoluene	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
Acetone	(ppbv)	3.4 U	8.3	4.5	5.8	3.4 U	8.1
Benzene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	2.6
Benzene, 1,2,4-trimethyl	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	2.7	1.8
Benzene, 1,3,5-trimethyl-	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Bromodichloromethane	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
Bromoform	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
Carbon disulfide	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
Carbon tetrachloride	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Chlorobenzene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-09 SHAA-09 04/12/2002	SHAA-10 SHAA-10 04/12/2002	SHAA-11 SHAA-11 05/06/2002	SHAA-12 SHAA-12 05/06/2002	SHAA-13 SHAA-13 05/06/2002	SHAA-14 SHAA-14 05/06/2002
Chloroethane	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Chloroform	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
cis-1,2-Dichloroethylene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
cis-1,3-Dichloropropene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Cryofluorane	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Cyclohexane	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
Dibromochloromethane	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
Dichlorodifluoromethane	(ppbv)	0.9 U	1.2	0.65	0.8 U	0.9 U	0.9 U
EDB	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Ethanol	(ppbv)	4.3	12	6.4	3.3 U	3.4 U	3.4 U
Ethene, 1,2-dichloro-, (E)-	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
Ethylbenzene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	1.4
Freon 113	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Heptane	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
Hexachlorobutadiene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Isopropanol	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
m/p-xylene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	1.6	5.8
m-Dichlorobenzene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Methyl bromide	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Methyl chloride	(ppbv)	0.9 U	0.9 U	1	0.94	(0.86)	0.9 U
Methyl ethyl ketone	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	6.9

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-09 SHAA-09 04/12/2002	SHAA-10 SHAA-10 04/12/2002	SHAA-11 SHAA-11 05/06/2002	SHAA-12 SHAA-12 05/06/2002	SHAA-13 SHAA-13 05/06/2002	SHAA-14 SHAA-14 05/06/2002
Methyl isobutylketone (MIBK)	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
Methylene chloride	(ppbv)	0.9 U	10	0.64	0.8 U	0.9 U	0.9 U
Methyltert-butylether	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	13
Naphthalene	(ppbv)	17 U	17 U	13 U	16 U	17 U	17 U
n-Hexane	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.5
o-Chlorotoluene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
o-Dichlorobenzene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
o-Xylene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	1.4	1.9
p-Dichlorobenzene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Propylene	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
Styrene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Tetrachloroethylene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Tetrahydrofuran	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	10
Toluene	(ppbv)	0.9 U	2.2	1.2	1.1	0.9 U	12
trans-1,3-Dichloropropene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Trichloroethylene	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Trichlorofluoromethane	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U
Vinyl Acetate	(ppbv)	3.4 U	3.6 U	2.6 U	3.3 U	3.4 U	3.4 U
Vinyl chloride	(ppbv)	0.9 U	0.9 U	0.6 U	0.8 U	0.9 U	0.9 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-15 SHAA-15 05/06/2002	SHAA-16 SHAA-16 05/06/2002	SHAA-17 SHAA-17 05/06/2002	SHAA-18 SHAA-18 05/06/2002	SHAA-19 SHAA-19 05/06/2002	SHAA-20 SHAA-20 05/09/2002
1,1,1-Trichloroethane	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
1,1,2,2-Tetrachloroethane	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
1,1,2-Trichloroethane	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
1,1-Dichloroethane	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
1,1-Dichloroethylene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
1,2,4-Trichlorobenzene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
1,2-Dichloroethane	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
1,2-Dichloropropane	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
1,3-Butadiene	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
1,4-Dioxane	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
2-Hexanone	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
4-Ethyltoluene	(ppbv)	2.6 U	13	4.4	3.8 U	3.7 U	3.4 U
Acetone	(ppbv)	4.8	3.4 U	23	6.9	12	3.4 U
Benzene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Benzene, 1,2,4-trimethyl	(ppbv)	0.6 U	14	9	1.0 U	0.9 U	0.8 U
Benzene, 1,3,5-trimethyl-	(ppbv)	0.6 U	6.7	2.1	1.0 U	0.9 U	0.8 U
Bromodichloromethane	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
Bromoform	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
Carbon disulfide	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
Carbon tetrachloride	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Chlorobenzene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-15 SHAA-15 05/06/2002	SHAA-16 SHAA-16 05/06/2002	SHAA-17 SHAA-17 05/06/2002	SHAA-18 SHAA-18 05/06/2002	SHAA-19 SHAA-19 05/06/2002	SHAA-20 SHAA-20 05/09/2002
Chloroethane	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Chloroform	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
cis-1,2-Dichloroethylene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
cis-1,3-Dichloropropene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Cryofluorane	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Cyclohexane	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
Dibromochloromethane	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
Dichlorodifluoromethane	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
EDB	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Ethanol	(ppbv)	2.9	3.4 U	36	55	3.7 U	3.4 U
Ethene, 1,2-dichloro-, (E)-	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
Ethylbenzene	(ppbv)	0.6 U	3.2	0.9 U	1.0 U	0.9 U	0.8 U
Freon 113	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Heptane	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
Hexachlorobutadiene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Isopropanol	(ppbv)	2.6 U	3.4 U	7.1	18	20	3.4 U
m/p-xylene	(ppbv)	0.6 U	16	3	1.0 U	0.9 U	0.8 U
m-Dichlorobenzene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Methyl bromide	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Methyl chloride	(ppbv)	0.91	0.88	0.9 U	1.1	0.98	0.8 U
Methyl ethyl ketone	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-15 SHAA-15 05/06/2002	SHAA-16 SHAA-16 05/06/2002	SHAA-17 SHAA-17 05/06/2002	SHAA-18 SHAA-18 05/06/2002	SHAA-19 SHAA-19 05/06/2002	SHAA-20 SHAA-20 05/09/2002
Methyl isobutylketone (MIBK)	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
Methylene chloride	(ppbv)	3.4	0.8 U	2.4	1.0 U	1.9	0.8 U
Methyltert-butylether	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	140	3.4 U
Naphthalene	(ppbv)	13 U	16 U	17 U	19 U	18 U	16 U
n-Hexane	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
o-Chlorotoluene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
o-Dichlorobenzene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
o-Xylene	(ppbv)	0.6 U	12	1.3	1.0 U	0.9 U	0.8 U
p-Dichlorobenzene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Propylene	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
Styrene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Tetrachloroethylene	(ppbv)	0.6 U	1.4	0.9 U	1.0 U	0.9 U	0.8 U
Tetrahydrofuran	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
Toluene	(ppbv)	1.7	6.8	39	1.0 U	1.4	0.8 U
trans-1,3-Dichloropropene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Trichloroethylene	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U
Trichlorofluoromethane	(ppbv)	0.6 U	0.8 U	1.3	1.0 U	0.9 U	0.8 U
Vinyl Acetate	(ppbv)	2.6 U	3.4 U	3.6 U	3.8 U	3.7 U	3.4 U
Vinyl chloride	(ppbv)	0.6 U	0.8 U	0.9 U	1.0 U	0.9 U	0.8 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

OFF-SITE FIELD INVESTIGATION

INDOOR AIR SAMPLE RESULTS

VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-21 SHAA-21 05/09/2002	SHAA-22 SHAA-22 05/09/2002	SHAA-23 SHAA-23 05/17/2002	SHAA-24 SHAA-24 05/17/2002	SHAA-25 SHAA-25 05/17/2002	SHAA-26 SHAA-26 05/17/2002
1,1,1-Trichloroethane	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
1,1,2,2-Tetrachloroethane	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
1,1,2-Trichloroethane	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
1,1-Dichloroethane	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
1,1-Dichloroethylene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
1,2,4-Trichlorobenzene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
1,2-Dichloroethane	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
1,2-Dichloropropane	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
1,3-Butadiene	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
1,4-Dioxane	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
2-Hexanone	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
4-Ethyltoluene	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Acetone	(ppbv)	3.4 U	100	5.8	7.9	19	18
Benzene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Benzene, 1,2,4-trimethyl	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Benzene, 1,3,5-trimethyl-	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Bromodichloromethane	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Bromoform	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Carbon disulfide	(ppbv)	3.4 U	13 U	4.0	3.5 U	3.7 U	8.9 U
Carbon tetrachloride	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Chlorobenzene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE	SHAA-21	SHAA-22	SHAA-23	SHAA-24	SHAA-25	SHAA-26
	SAMPLE ID	SHAA-21	SHAA-22	SHAA-23	SHAA-24	SHAA-25	SHAA-26
	DATE	05/09/2002	05/09/2002	05/17/2002	05/17/2002	05/17/2002	05/17/2002
Chloroethane	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Chloroform	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
cis-1,2-Dichloroethylene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
cis-1,3-Dichloropropene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Cryofluorane	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Cyclohexane	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Dibromochloromethane	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Dichlorodifluoromethane	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
EDB	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Ethanol	(ppbv)	3.4 U	300	3.6 U	6.5	12	14
Ethene, 1,2-dichloro-, (E)-	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Ethylbenzene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2.4
Freon 113	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Heptane	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Hexachlorobutadiene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Isopropanol	(ppbv)	3.4 U	2600 E	3.6 U	3.5 U	3.7 U	8.9 U
m/p-xylene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	5.4
m-Dichlorobenzene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Methyl bromide	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Methyl chloride	(ppbv)	1.3	3 U	0.9 U	0.9 U	1.2	2 U
Methyl ethyl ketone	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	9.1

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-21 SHAA-21 05/09/2002	SHAA-22 SHAA-22 05/09/2002	SHAA-23 SHAA-23 05/17/2002	SHAA-24 SHAA-24 05/17/2002	SHAA-25 SHAA-25 05/17/2002	SHAA-26 SHAA-26 05/17/2002
Methyl isobutylketone (MIBK)	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Methylene chloride	(ppbv)	0.8 U	3 U	1.3	1.8	1.3	2 U
Methyltert-butylether	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Naphthalene	(ppbv)	16 U	65 U	17 U	17 U	18 U	43 U
n-Hexane	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
o-Chlorotoluene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
o-Dichlorobenzene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
o-Xylene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2.4
p-Dichlorobenzene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Propylene	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Styrene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Tetrachloroethylene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Tetrahydrofuran	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Toluene	(ppbv)	0.8 U	7.2 J	0.9 U	0.9 U	1.2	29
trans-1,3-Dichloropropene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Trichloroethylene	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Trichlorofluoromethane	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U
Vinyl Acetate	(ppbv)	3.4 U	13 U	3.6 U	3.5 U	3.7 U	8.9 U
Vinyl chloride	(ppbv)	0.8 U	3 U	0.9 U	0.9 U	0.9 U	2 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-27 SHAA-27 05/17/2002	SHAA-28 SHAA-28 05/17/2002	SHAA-29 SHAA-29 05/22/2002	SHAA-30 SHAA-30 05/22/2002	SHAA-31 SHAA-31 05/22/2002	SHAA-32 SHAA-32 05/22/2002
1,1,1-Trichloroethane	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
1,1,2,2-Tetrachloroethane	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
1,1,2-Trichloroethane	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
1,1-Dichloroethane	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
1,1-Dichloroethylene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
1,2,4-Trichlorobenzene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
1,2-Dichloroethane	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
1,2-Dichloropropane	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
1,3-Butadiene	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
1,4-Dioxane	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
2-Hexanone	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
4-Ethyltoluene	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Acetone	(ppbv)	5.8	4.0 U	3.7 U	6.0	4.4	4.0 U
Benzene	(ppbv)	2.5	1 U	0.9 U	1.0 U	0.9 U	1 U
Benzene, 1,2,4-trimethyl	(ppbv)	2.8	1 U	0.9 U	1.0 U	0.9 U	1 U
Benzene, 1,3,5-trimethyl-	(ppbv)	0.86	1 U	0.9 U	1.0 U	0.9 U	1 U
Bromodichloromethane	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Bromoform	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Carbon disulfide	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Carbon tetrachloride	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Chlorobenzene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE	SHAA-27	SHAA-28	SHAA-29	SHAA-30	SHAA-31	SHAA-32
	SAMPLE ID	SHAA-27	SHAA-28	SHAA-29	SHAA-30	SHAA-31	SHAA-32
	DATE	05/17/2002	05/17/2002	05/22/2002	05/22/2002	05/22/2002	05/22/2002
Chloroethane	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Chloroform	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
cis-1,2-Dichloroethylene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
cis-1,3-Dichloropropene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Cryofluorane	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Cyclohexane	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Dibromochloromethane	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Dichlorodifluoromethane	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
EDB	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Ethanol	(ppbv)	6.4	6.5	3.7 U	5.9	15	4.0 U
Ethene, 1,2-dichloro-, (E)-	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Ethylbenzene	(ppbv)	2.9	1 U	0.9 U	1.0 U	0.9 U	1 U
Freon 113	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Heptane	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Hexachlorobutadiene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Isopropanol	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
m/p-xylene	(ppbv)	9.5	1.3	0.9 U	1.0 U	0.9 U	1 U
m-Dichlorobenzene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Methyl bromide	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Methyl chloride	(ppbv)	0.86	1 U	0.9 U	1.0 U	0.9 U	1 U
Methyl ethyl ketone	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE	SHAA-27	SHAA-28	SHAA-29	SHAA-30	SHAA-31	SHAA-32
	SAMPLE ID	SHAA-27	SHAA-28	SHAA-29	SHAA-30	SHAA-31	SHAA-32
	DATE	05/17/2002	05/17/2002	05/22/2002	05/22/2002	05/22/2002	05/22/2002
Methyl isobutylketone (MIBK)	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Methylene chloride	(ppbv)	2.3	1.7	1.8	1.2	6.1	1.2
Methyltert-butylether	(ppbv)	22	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Naphthalene	(ppbv)	13 U	19 U	18 U	19 U	18 U	19 U
n-Hexane	(ppbv)	2.9	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
o-Chlorotoluene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
o-Dichlorobenzene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
o-Xylene	(ppbv)	4.3	1 U	0.9 U	1.0 U	0.9 U	1 U
p-Dichlorobenzene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Propylene	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Styrene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Tetrachloroethylene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Tetrahydrofuran	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Toluene	(ppbv)	20	1.2	0.9 U	1.7	1.4	1 U
trans-1,3-Dichloropropene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Trichloroethylene	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Trichlorofluoromethane	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U
Vinyl Acetate	(ppbv)	2.7 U	4.0 U	3.7 U	3.9 U	3.7 U	4.0 U
Vinyl chloride	(ppbv)	0.7 U	1 U	0.9 U	1.0 U	0.9 U	1 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-33 SHAA-33 05/31/2002	SHAA-34 SHAA-34 05/31/2002	SHAA-35 SHAA-35 05/31/2002	SHAA-36A SHAA-36A 06/24/2002	SHAA-36B SHAA-36B 06/24/2002	SHAA-37A SHAA-37A 06/24/2002
1,1,1-Trichloroethane	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
1,1,2,2-Tetrachloroethane	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
1,1,2-Trichloroethane	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
1,1-Dichloroethane	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
1,1-Dichloroethylene	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
1,2,4-Trichlorobenzene	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
1,2-Dichloroethane	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
1,2-Dichloropropane	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
1,3-Butadiene	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
1,4-Dioxane	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
2-Hexanone	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
4-Ethyltoluene	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
Acetone	(ppbv)	50	58	45	39	46	11
Benzene	(ppbv)	0.9 U	0.89	0.9 U	0.7 U	0.5 U	0.6 U
Benzene, 1,2,4-trimethyl	(ppbv)	0.9 U	1.4	3.5	0.7 U	0.74	0.6 U
Benzene, 1,3,5-trimethyl-	(ppbv)	0.9 U	0.7 U	1.2	0.7 U	0.5 U	0.6 U
Bromodichloromethane	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
Bromoform	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
Carbon disulfide	(ppbv)	3.5 U	3.5	3.7 U	5.6	3 U	3 U
Carbon tetrachloride	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
Chlorobenzene	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE	SHAA-33	SHAA-34	SHAA-35	SHAA-36A	SHAA-36B	SHAA-37A
	SAMPLE ID	SHAA-33	SHAA-34	SHAA-35	SHAA-36A	SHAA-36B	SHAA-37A
	DATE	05/31/2002	05/31/2002	05/31/2002	06/24/2002	06/24/2002	06/24/2002
Chloroethane	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
Chloroform	(ppbv)	0.9 U	0.7 U	2.0	0.73	0.94	0.6 U
cis-1,2-Dichloroethylene	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
cis-1,3-Dichloropropene	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
Cryofluorane	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
Cyclohexane	(ppbv)	3.5 U	3.1	3.7 U	3 U	3 U	3 U
Dibromochloromethane	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
Dichlorodifluoromethane	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.74	0.6 U
EDB	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
Ethanol	(ppbv)	36	330 E	220	280 E	300 E	8.0
Ethene, 1,2-dichloro-, (E)-	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
Ethylbenzene	(ppbv)	0.9 U	1.5	0.9 U	0.7 U	0.51	0.6 U
Freon 113	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
Heptane	(ppbv)	3.5 U	2.7 U	6.7	3 U	3 U	3 U
Hexachlorobutadiene	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
Isopropanol	(ppbv)	5.9	210	51	8.3	7.2	3 U
m/p-xylene	(ppbv)	0.9 U	2.6	0.9 U	0.91	1.3	0.6 U
m-Dichlorobenzene	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
Methyl bromide	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
Methyl chloride	(ppbv)	1.8	0.7 U	1.2	1.4	1.1	0.78
Methyl ethyl ketone	(ppbv)	6.3	2.7 U	42	17	15	3 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-33 SHAA-33 05/31/2002	SHAA-34 SHAA-34 05/31/2002	SHAA-35 SHAA-35 05/31/2002	SHAA-36A SHAA-36A 06/24/2002	SHAA-36B SHAA-36B 06/24/2002	SHAA-37A SHAA-37A 06/24/2002
Methyl isobutylketone (MIBK)	(ppbv)	1.3 J	1.2 J	3.7 U	3 U	3 U	3 U
Methylene chloride	(ppbv)	4.8	2.4	2.3	1.3	1.6	0.95
Methyltert-butylether	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
Naphthalene	(ppbv)	17 U	13 U	18 U	70 U	50 U	60 U
n-Hexane	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
o-Chlorotoluene	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
o-Dichlorobenzene	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
o-Xylene	(ppbv)	0.9 U	1.2	1.0	0.7 U	0.57	0.6 U
p-Dichlorobenzene	(ppbv)	0.9 U	0.7 U	0.9 U	21	20	0.6 U
Propylene	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
Styrene	(ppbv)	0.9 U	1.9	0.9 U	0.7 U	0.5 U	0.6 U
Tetrachloroethylene	(ppbv)	0.9 U	0.7 U	1.1	2.9	2.8	0.6 U
Tetrahydrofuran	(ppbv)	3.5 U	2.7 U	14	3 U	3 U	3 U
Toluene	(ppbv)	5.6	10	12	10	13	0.87
trans-1,3-Dichloropropene	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
Trichloroethylene	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U
Trichlorofluoromethane	(ppbv)	0.9 U	1.0	4.0	0.7 U	0.75	0.6 U
Vinyl Acetate	(ppbv)	3.5 U	2.7 U	3.7 U	3 U	3 U	3 U
Vinyl chloride	(ppbv)	0.9 U	0.7 U	0.9 U	0.7 U	0.5 U	0.6 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-37B SHAA-37B 06/24/2002
1,1,1-Trichloroethane	(ppbv)	0.7 U
1,1,2,2-Tetrachloroethane	(ppbv)	0.7 U
1,1,2-Trichloroethane	(ppbv)	0.7 U
1,1-Dichloroethane	(ppbv)	0.7 U
1,1-Dichloroethylene	(ppbv)	0.7 U
1,2,4-Trichlorobenzene	(ppbv)	0.7 U
1,2-Dichloroethane	(ppbv)	0.7 U
1,2-Dichloropropane	(ppbv)	0.7 U
1,3-Butadiene	(ppbv)	2.7 U
1,4-Dioxane	(ppbv)	2.7 U
2-Hexanone	(ppbv)	2.7 U
4-Ethyltoluene	(ppbv)	2.7 U
Acetone	(ppbv)	10
Benzene	(ppbv)	0.17 J
Benzene, 1,2,4-trimethyl	(ppbv)	0.14 J
Benzene, 1,3,5-trimethyl-	(ppbv)	0.7 U
Bromodichloromethane	(ppbv)	2.7 U
Bromoform	(ppbv)	2.7 U
Carbon disulfide	(ppbv)	2.7 U
Carbon tetrachloride	(ppbv)	0.7 U
Chlorobenzene	(ppbv)	0.7 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-37B SHAA-37B 06/24/2002
Chloroethane	(ppbv)	0.7 U
Chloroform	(ppbv)	0.7 U
cis-1,2-Dichloroethylene	(ppbv)	0.7 U
cis-1,3-Dichloropropene	(ppbv)	0.7 U
Cryofluorane	(ppbv)	0.7 U
Cyclohexane	(ppbv)	2.7 U
Dibromochloromethane	(ppbv)	2.7 U
Dichlorodifluoromethane	(ppbv)	0.65 J
EDB	(ppbv)	0.7 U
Ethanol	(ppbv)	2.7 U
Ethene, 1,2-dichloro-, (E)-	(ppbv)	2.7 U
Ethylbenzene	(ppbv)	0.7 U
Freon 113	(ppbv)	0.7 U
Heptane	(ppbv)	2.7 U
Hexachlorobutadiene	(ppbv)	0.7 U
Isopropanol	(ppbv)	2.7 U
m/p-xylene	(ppbv)	0.28 J
m-Dichlorobenzene	(ppbv)	0.7 U
Methyl bromide	(ppbv)	0.7 U
Methyl chloride	(ppbv)	0.81
Methyl ethyl ketone	(ppbv)	1.2 J

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

TABLE C-39
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION
OFF-SITE FIELD INVESTIGATION
INDOOR AIR SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) AND NAPHTHALENE

PERIOD: From 04/12/2002 thru 06/24/2002 - Inclusive
SAMPLE TYPE: Air

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-37B SHAA-37B 06/24/2002
Methyl isobutylketone (MIBK)	(ppbv)	2.7 U
Methylene chloride	(ppbv)	0.21 J
Methyltert-butylether	(ppbv)	5.1
Naphthalene	(ppbv)	13 U
n-Hexane	(ppbv)	2.7 U
o-Chlorotoluene	(ppbv)	0.7 U
o-Dichlorobenzene	(ppbv)	0.7 U
o-Xylene	(ppbv)	0.7 U
p-Dichlorobenzene	(ppbv)	0.7 U
Propylene	(ppbv)	2.7 U
Styrene	(ppbv)	0.7 U
Tetrachloroethylene	(ppbv)	0.7 U
Tetrahydrofuran	(ppbv)	2.7 U
Toluene	(ppbv)	0.52 J
trans-1,3-Dichloropropene	(ppbv)	0.7 U
Trichloroethylene	(ppbv)	0.7 U
Trichlorofluoromethane	(ppbv)	0.31 J
Vinyl Acetate	(ppbv)	2.7 U
Vinyl chloride	(ppbv)	0.7 U

ppbv : parts per billion by volume
Data qualifiers defined in Glossary

---: Not analyzed

APPENDIX D

HISTORIC AND RI ANALYTICAL RESULTS FOR SUBSURFACE SOIL AND GROUNDWATER – DATA SUMMARY TABLES

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

INDEX OF HISTORICAL AND RI CHEMICAL DATA TABLES

Table No.	Matrix	Analytical Parameters
D-1	Subsurface Soil	Total BTEX, Total Polycyclic Aromatic Hydrocarbons (PAHs) and Cyanide
D-2	Groundwater Monitoring Well	BTEX Compounds
D-3	Groundwater Monitoring Well	Polycyclic Aromatic Hydrocarbons (PAHs)
D-4	Groundwater Monitoring Well	Cyanide
D-5	Groundwater Probe	BTEX Compounds
D-6	Groundwater Probe	Polycyclic Aromatic Hydrocarbons (PAHs)

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 D-1
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI SUBSURFACE SOIL SAMPLE RESULTS
TOTAL BTEX, TOTAL PAHs AND CYANIDE

PERIOD: From 11/14/1995 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

SITE	DATE	DEPTH	SAMPLE ID	Total BTEX (mg/kg)	Total PAHs (mg/kg)	Cyanide (mg/kg)
B-07E	11/14/1995	1.50	B-7 (0-6)	0.416	26.19	2.8
B-08E	11/14/1995	1.50	B-8 (0-6)	0.002	1047.60	2.3
B-09E	11/14/1995	1.50	B-9 (0-6)	0.046	73.93	1.4
B-10E	11/14/1995	1.50	B-10 (0-6)	0.144	185.10	0.57 U
SHCP-01	01/05/1999	0.00	SHCP-1	93.75	867.9	0.618 U?
SHCP-02	01/06/1999	0.00	SHCP-2	2.86	191.2	0.542 U?
SHCP-03	01/06/1999	0.00	SHCP-3	172	1225.2	0.608 U?
SHCP-04	01/06/1999	0.00	SHCP-4	1.887	18.951	0.604 U?
SHSB-01	03/20/2000	0.50	SHSB-01(.5-1.5)	0.00	743.10	0.21 U
SHSB-01	03/20/2000	5.00	SHSB-01(5-7)	126.00	2700.00	0.25 U
SHSB-01	03/20/2000	26.00	SHSB-01(26-28)	0.004	0.00	0.15 U
SHSB-02	03/20/2000	0.50	SHSB-2(0.5-1.5)	0.00	47.70	0.25 B
SHSB-02	03/20/2000	6.00	SHSB-2(6-7)	1390.00	4591.6	0.12 U
SHSB-02	03/20/2000	16.00	SHSB-2(16-18)	982.00	824.7	0.2 U
SHSB-02	03/22/2000	52.00	SHSB-02 (52-54)	0.009	3.497	0.16 U
SHSB-03	03/20/2000	1.00	SHSB-03 (1-3)	0.008	25.58	1.4
SHSB-03	03/20/2000	10.00	SHSB-03 (10-12)	10.00	239.6	0.2 U
SHSB-03	03/20/2000	34.00	SHSB-03 (34-36)	0.013	0.195 J	0.14 U
SHSB-04	03/13/2000	0.50	SHSB-04 (.5-.7)	0.00	517.70	1.1 B
SHSB-04	03/13/2000	4.00	SHSB-04 (4-8)	35.05	254.56	0.21 U
SHSB-04	03/15/2000	24.00	SHSB-04 (24-26)	0.00	0.064	0.16 U
SHSB-05	03/13/2000	0.50	SHSB-05 (.5-.7)	0.00	739.10	0.45 B
SHSB-05	03/13/2000	4.00	SHSB-05 (4-8)	0.90	4956.00	0.33 B
SHSB-05	03/13/2000	22.00	SHSB-05 (22-24)	0.00	0.072	0.17 U
SHSB-05	05/22/2000	88.00	SHSB-05(88-90)*	0.00	1.631	0.21 U
SHSB-06	03/13/2000	0.50	SHSB-06(.5-1.5)	0.00	543.32	0.46 B
SHSB-06	03/13/2000	6.00	SHSB-06 (6-8)	0.65	160.44	0.23 U
SHSB-06	03/13/2000	50.00	SHSB-06 (50-52)	0.00	0.00	0.2 U
SHSB-07	03/17/2000	0.50	SHSB-07 (0.5-1)	0.013	7.737	0.18 U
SHSB-07	03/17/2000	26.00	SHSB-07 (26-28)	0.003	0.00	0.17 U
SHSB-07	03/17/2000	8.00	SHSB-07 (8-10)	15.10	4.80	0.73 U
SHSB-08	03/20/2000	2.00	SHSB-08 (2-4)	46.90	1007.70	0.13 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---:Not Analyzed

HISTORICAL AND RI SUBSURFACE SOIL SAMPLE RESULTS
TOTAL BTEX, TOTAL PAHs AND CYANIDE

PERIOD: From 11/14/1995 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

SITE	DATE	DEPTH	SAMPLE ID	Total BTEX (mg/kg)	Total PAHs (mg/kg)	Cyanide (mg/kg)
SHSB-08	03/20/2000	5.00	SHSB-08 (5-7)	99.00	1730.00	0.29 U
SHSB-08	03/20/2000	50.00	SHSB-08(50-52')	0.00	0.00	0.17 U
SHSB-09	03/22/2000	1.00	SHSB-09(1-3)	4.356	949.80	0.13 U
SHSB-09	03/22/2000	8.00	SHSB-09(6-8)	2.59	56.22	0.16 U
SHSB-09	03/23/2000	26.00	SHSB-09(26-28)	0.002	0.00	0.14 U
SHSB-10	03/16/2000	2.00	SHSB-10 (2-4)	177.00	5347.00	4.8
SHSB-10	03/16/2000	24.00	SHSB-10 (24-26)	0.004	0.049	0.16 U
SHSB-11	03/23/2000	1.80	SHSB-11(1.8-3.5	0.013	0.544	0.16 U
SHSB-11	03/23/2000	8.00	SHSB-11(8-10)	364.00	272.79	0.71 U
SHSB-11	03/23/2000	6.00	SHSB-11(6-8)	0.44	464.20	0.17 U
SHSB-11	03/23/2000	30.00	SHSB-11(30-32)	0.031	31.236	0.16 U
SHSB-12	03/24/2000	1.00	SHSB-12 (1-3)	2.16	65.90	0.27 U
SHSB-12	03/24/2000	6.00	SHSB-12 (6-8)	0.058	1172.00	0.2 U
SHSB-12	03/24/2000	34.00	SHSB-12 (34-36)	0.00	0.00	0.23 U
SHSB-13	03/27/2000	2.00	SHSB-13 (2-4)	0.045	48.60	(0.38) B
SHSB-13	03/27/2000	10.00	SHSB-13 (10-12)	142.80	157.00	0.22 U
SHSB-13	03/27/2000	18.00	SHSB-13 (18-20)	0.272	45.51	0.15 U
SHSB-13	03/27/2000	34.00	SHSB-13 (34-36)	0.006	0.237	0.15 U
SHSB-14	03/06/2000	5.00	SHSB-14 (5-7)	64.00	738.70	0.17 U
SHSB-14	03/06/2000	48.00	SHSB-14 (48-52)	0.00	0.00	0.15 U
SHSB-15	03/06/2000	5.00	SHSB-15 (5-7)	21.40	27.50	0.13 U
SHSB-15	03/06/2000	16.00	SHSB-15 (16-18)	0.00	0.22	0.14 U
SHSB-15	03/06/2000	26.00	SHSB-15 (26-28)	0.186	134.09	0.13 U
SHSB-15	03/07/2000	48.00	SHSB-15 (48-50)	0.00	0.132	0.13 U
SHSB-16	03/07/2000	6.00	SHSB-16 (6-8)	25.60	200.12	0.18 U
SHSB-16	03/08/2000	50.00	SHSB-16 (50-52)	0.00	0.00	0.14 U
SHSB-17	03/08/2000	14.00	SHSB-17 (14-16)	0.00	0.00	0.15 U
SHSB-18	03/27/2000	1.00	SHSB-18 (1-3)	0.003	42.13	(0.14) B
SHSB-18	03/27/2000	6.00	SHSB-18 (6-8)	63.00	2155.80	0.17 U
SHSB-18	03/27/2000	30.00	SHSB-18 (30-32)	0.00	0.00	(0.16) B
SHSB-19	03/20/2000	2.00	SHSB-19 (2-4)	0.047	3.399	0.18 U
SHSB-19	03/20/2000	5.00	SHSB-19 (5-7)	5.44	145.49	0.56 B

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-1
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI SUBSURFACE SOIL SAMPLE RESULTS
TOTAL BTEX, TOTAL PAHs AND CYANIDE

PERIOD: From 11/14/1995 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

SITE	DATE	DEPTH	SAMPLE ID	Total BTEX (mg/kg)	Total PAHs (mg/kg)	Cyanide (mg/kg)
SHSB-19	03/20/2000	50.00	SHSB-19 (50-52)	0.005	0.00	0.13 U
SHSB-20	03/21/2002	9.00	SHSB-20(9-11)	18.38	320.48	0.3 U
SHSB-20	03/22/2002	31.00	SHSB-20(31-33)	0.009	0.24	0.28 U
SHSB-20	03/25/2002	79.00	SHSB-20(79-81)	0.002	0.00	0.67 U
SHSB-20	03/25/2002	99.00	SHSB-20(99-101)	0.00	0.00	0.72 U
SHSB-21	03/27/2002	7.00	SHSB-21(7-9)	35.2	3140.00	0.29 B
SHSB-21	03/27/2002	15.00	SHSB-21(15-17)	92	63.65	0.3 U
SHSB-21	03/28/2002	71.00	SHSB-21(71-73)	0.00	0.30	0.27 U
SHSB-21	03/29/2002	95.00	SHSB-21(95-97)	0.00	0.2	0.34 U
SHSB-22	04/01/2002	6.00	SHSB-22(6-7)	59.20	674.70	0.64 U
SHSB-22	04/01/2002	20.00	SHSB-22(20-22)	0.00	0.60	0.31 U
SHSB-22	04/02/2002	52.00	SHSB-22(52-54)	0.00	0.00	0.34 U
SHSB-22	04/02/2002	98.00	SHSB-22(98-100)	0.00	0.00	0.34 U
SHSB-23	04/04/2002	8.00	SHSB-23(8-10)	0.00	7.59	0.23 U
SHSB-23	04/04/2002	17.00	SHSB-23(17-19)	0.00	0.00	0.22 U
SHSB-23	04/04/2002	37.00	SHSB-23(37-39)	0.00	0.00	0.29 U
SHSB-23	04/04/2002	58.00	SHSB-23(58-60)	0.00	0.00	0.28 U
SHSB-24	04/16/2002	12.00	SHSB-24(12-14)	0.003	0.09	0.29 U
SHSB-24	04/16/2002	20.00	SHSB-24(20-22)	0.002	0.14	0.28 U
SHSB-24	04/16/2002	40.00	SHSB-24(40-42)	0.00	0.00	0.32 U
SHSB-24	04/17/2002	56.00	SHSB-24(56-58)	0.00	0.00	0.17 B
SHSB-25	04/05/2002	6.00	SHSB-25(6-8)	0.00	1.34	0.28 U
SHSB-25	04/05/2002	21.00	SHSB-25(21-23)	0.00	0.00	0.27 U
SHSB-25	04/08/2002	42.00	SHSB-25(42-44)	0.00	0.00	0.26 U
SHSB-25	04/08/2002	57.00	SHSB-25(57-59)	0.00	0.00	0.27 U
SHSB-26	04/08/2002	40.00	SHSB-26(40-42)	0.00	0.00	0.26 U
SHSB-26	04/08/2002	5.00	SHSB-26(5-6)	0.062	1588.40	0.26 U
SHSB-26	04/08/2002	16.00	SHSB-26(16-18)	2.00	1.14	0.22 U
SHSB-26	04/09/2002	58.00	SHSB-26(58-60)	0.00	0.00	0.21 U
SHSB-27	04/11/2002	5.00	SHSB-27(5-7)	0.008	7.33	0.26 U
SHSB-27	04/11/2002	28.00	SHSB-27(28-30)	0.00	0.00	0.29 U
SHSB-28	04/02/2002	10.00	SHSB-28(10-12)	0.001	1.56	0.33 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-1
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI SUBSURFACE SOIL SAMPLE RESULTS
TOTAL BTEX, TOTAL PAHs AND CYANIDE

PERIOD: From 11/14/1995 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

SITE	DATE	DEPTH	SAMPLE ID	Total BTEX (mg/kg)	Total PAHs (mg/kg)	Cyanide (mg/kg)
SHSB-28	04/02/2002	20.00	SHSB-28(20-22)	0.016	0.00	0.38 U
SHSB-28	04/02/2002	38.00	SHSB-28(38-40)	0.00	0.00	0.38 U
SHSB-28	04/02/2002	58.00	SHSB-28(58-60)	0.00	0.00	0.4 U
SHSB-29	04/11/2002	5.00	SHSB-29(5-7)	59.68	4803.00	0.28 U
SHSB-29	04/11/2002	12.00	SHSB-29(12-14)	0.00	0.00	0.20 U
SHSB-29	04/11/2002	30.00	SHSB-29(30-32)	0.00	0.00	0.27 U
SHSB-29	04/11/2002	58.00	SHSB-29(58-60)	0.00	(0.29)	0.22 U
SHSB-30	04/01/2002	5.00	SHSB-30(5-6)	0.010	2.80	0.11
SHSB-30	04/01/2002	28.00	SHSB-30(28-30)	0.00	0.00	0.44 U
SHSB-31	03/28/2002	4.00	SHSB-31(4-6)	29.00	1169.40	0.35 U
SHSB-31	03/28/2002	16.00	SHSB-31(16-18)	0.00	0.22	0.26 U
SHSB-31	03/28/2002	28.00	SHSB-31(28-30)	0.00	---	---
SHSB-32	04/15/2002	5.00	SHSB-32(5-7)	34.57	631.40	0.27 U
SHSB-32	04/15/2002	16.00	SHSB-32(16-20)	0.00	0.29	0.27 U
SHSB-33	04/15/2002	5.50	SHSB-33(5.5-7.5	124.10	6222.00	0.27 U
SHSB-33	04/15/2002	12.00	SHSB-33(12-14)	0.041	0.00	0.28 U
SHSB-34	04/09/2002	8.00	SHSB-34(8-10)	0.00	0.06	0.34 U
SHSB-34	04/09/2002	28.00	SHSB-34(28-30)	0.00	0.00	0.28 U
SHSB-35	04/10/2002	8.00	SHSB-35(8-10)	0.00	15.18	0.32 U
SHSB-35	04/10/2002	28.00	SHSB-35(28-30)	0.00	0.00	0.24 U
SHSB-36	03/29/2002	8.00	SHSB-36(8-10)	0.009	0.00	0.4 U
SHSB-36	03/29/2002	14.00	SHSB-36(14-16)	0.00	0.00	0.41 U
SHSB-37	04/12/2002	6.00	SHSB37(6-8)	0.013	130.74	0.28 U
SHSB-37	04/12/2002	10.00	SHSB37(10-12)	0.374	0.00	1.2 U
SHSB-37	04/12/2002	14.00	SHSB37(14-16)	0.006	0.00	0.28 U
SHSB-38	04/08/2002	8.00	SHSB-38(8-10)	301	4702.00	0.28 U
SHSB-38	04/08/2002	12.00	SHSB-38(12-14)	1.69	16.07	0.26 U
SHSB-38	04/08/2002	22.00	SHSB-38(22-24)	0.00	0.00	0.2 U
SHSB-39	03/27/2002	8.00	SHSB-39(8-10)	0.00	0.00	0.59 U
SHSB-39	03/27/2002	16.00	SHSB-39(16-18)	0.00	0.00	0.26 U
SHSB-40	04/09/2002	8.00	SHSB-40(8-9)	0.00	0.05	0.21 U
SHSB-40	04/09/2002	13.00	SHSB-40(13-15)	0.002	0.29	0.24 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-1
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI SUBSURFACE SOIL SAMPLE RESULTS
TOTAL BTEX, TOTAL PAHs AND CYANIDE

PERIOD: From 11/14/1995 thru 05/14/2002 - Inclusive
SAMPLE TYPE: Soil

SITE	DATE	DEPTH	SAMPLE ID	Total BTEX (mg/kg)	Total PAHs (mg/kg)	Cyanide (mg/kg)
SHSB-41	04/11/2002	9.00	SHSB-41(9-11)	0.01	(2.69)	0.31 U
SHSB-41	04/11/2002	16.00	SHSB-41(16-18)	0.00	(0.00)	0.30 U
SHSB-42	04/15/2002	8.00	SHSB-42(8-10)	33.00	1348.80	0.27 U
SHSB-42	04/15/2002	20.00	SHSB-42(20-22)	0.00	0.05	0.29 U
SHSB-43	04/16/2002	8.00	SHSB-43(8-10)	0.00	0.05	0.31 U
SHSB-43	04/16/2002	16.00	SHSB-43(16-18)	0.002	0.00	0.30 U
SHSB-44	04/17/2002	6.00	SHSB-44(6-8)	0.00	0.00	0.14 B
SHSB-44	04/17/2002	28.00	SHSB-44(28-30)	0.00	0.00	0.21 B
SHSB-45	05/14/2002	0.00	SHSB-45(0-2)	0.00	4.55	0.28 U
SHSB-46	05/14/2002	1.25	SHSB-461.252.25	0.001	79.78	0.28 U

mg/kg: milligram/kilogram
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	MW-01 MW-01 11/21/1995 7.30	MW-01 MW-01 03/17/2000 7.30	MW-01 MW-01 04/19/2000 7.30	MW-01 MW-01 05/06/2002 7.32	MW-02 MW-02 11/21/1995 7.25
Benzene	(ug/l)	1.0	[1200]	1 U	[20]	[3]	[650]
Ethylbenzene	(ug/l)	5	[540]	[5]	[16]	2	[2600]
Toluene	(ug/l)	5	[350] D	1 U	4 J	1 U	[79] J
Xylene (total)	(ug/l)	5	[630] J	[5]	[28]	4	[2100]
Total BTEX	(ug/l)		2720.00	10.00	68.00	9.00	5429.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	MW-02 MW-02 03/17/2000 7.25	MW-02 MW-02 04/19/2000 7.25	MW-02 MW-02 05/07/2002 7.25	MW-03 MW-03 11/21/1995 10.20	MW-03 MW-03 03/17/2000 10.20
Benzene	(ug/l)	1.0	[920]	[1400]	[340]	[520]	[68]
Ethylbenzene	(ug/l)	5	[4700]	[3000]	[3200]	[310] J	[290]
Toluene	(ug/l)	5	[120]	[140]	40 U	[42] J	[10]
Xylene (total)	(ug/l)	5	[3100]	[3400]	[2300]	[350] J	[300]
Total BTEX	(ug/l)		8840.00	7940.00	5840.00	1222.00	668.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	MW-03 MW-03 04/20/2000 10.20	MW-03 MW-03 05/07/2002 10.17	MW-04 MW-04 11/21/1995 6.81	MW-04 MW-04 03/17/2000 6.81	MW-04 MW-04 05/07/2002 6.81
Benzene	(ug/l)	1.0	[660]	[580]	[97] J	[8]	[3]
Ethylbenzene	(ug/l)	5	[300]	[220]	[400]	[16]	[5]
Toluene	(ug/l)	5	[43]	[43]	[27] J	1	1 U
Xylene (total)	(ug/l)	5	[550]	[520]	[340]	[10]	2
Total BTEX	(ug/l)		1553.00	1363.00	864.00	35.00	10.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	MW-05 MW-05 11/21/1995 7.50	MW-05 MW-05 03/17/2000 7.50	MW-05 MW-05 04/20/2000 7.50	MW-05 MW-05 05/07/2002 7.46	MW-06 MW-06 11/21/1995 7.50
Benzene	(ug/l)	1.0	[2900]	[36]	1 U	[15]	[15]
Ethylbenzene	(ug/l)	5	[2000]	[43]	1	1	[140]
Toluene	(ug/l)	5	[1400]	[17]	1 U	2	[19]
Xylene (total)	(ug/l)	5	[2800]	[74]	4	[84]	[160]
Total BTEX	(ug/l)		9100.00	170.00	5.00	102.00	334.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	MW-06 MW-6 03/17/2000 7.50	MW-06 MW-06 04/20/2000 7.50	MW-06 MW-06 05/07/2002 7.47	SHMW-01I SHMW-01I 04/26/2000 35.00	SHMW-01I SHMW-01,I 05/06/2002 45.00
Benzene	(ug/l)	1.0	[3]	[2]	[11]	[1]	1 U
Ethylbenzene	(ug/l)	5	[19]	[8]	[7]	2	1 U
Toluene	(ug/l)	5	1	1	1	1 U	1 U
Xylene (total)	(ug/l)	5	[24]	[19]	[72]	2	1 U
Total BTEX	(ug/l)		47.00	30.00	91.00	5.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-01S SHMW-01S 04/26/2000 1.00	SHMW-01S SHMW-01,S 05/06/2002 6.00	SHMW-02D SHMW-02D 04/24/2000 65.00	SHMW-02D SHMW-02,D 05/06/2002 75.00	SHMW-02I SHMW-02I 04/24/2000 35.00
Benzene	(ug/l)	1.0	[510]	[360]	[1]	1 U	[8]
Ethylbenzene	(ug/l)	5	[360]	[140]	1 U	1 U	1 U
Toluene	(ug/l)	5	[63]	[24]	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	[480]	[350]	4	4	[18]
Total BTEX	(ug/l)		1413.00	874.00	5.00	4.00	26.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-02I SHMW-02,I 05/06/2002 45.00	SHMW-03I SHMW-03I 04/20/2000 35.00	SHMW-03I SHMW-03I 05/10/2002 45.00	SHMW-03S SHMW-03S 04/20/2000 2.00	SHMW-03S SHMW-03S 05/10/2002 12.00
Benzene	(ug/l)	1.0	1 U	1 U	[8]	[5]	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	[25]	[25]	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	[19]	[33]	1 U
Total BTEX	(ug/l)		0.00	0.00	52.00	63.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-04I SHMW-04I 04/20/2000 35.00	SHMW-04I SHMW-04I 05/13/2002 45.00	SHMW-04S SHMW-04S 04/20/2000 2.00	SHMW-04S SHMW-04S 05/13/2002 12.00	SHMW-05I SHMW-05I 04/20/2000 35.00
Benzene	(ug/l)	1.0	[2]	1 U	[5300]	[1800]	1 U
Ethylbenzene	(ug/l)	5	1	1 U	[890]	[320]	1 U
Toluene	(ug/l)	5	1 U	1 U	10 U	[34]	1 U
Xylene (total)	(ug/l)	5	2	1 U	[1300]	[1000]	1 U
Total BTEX	(ug/l)		5.00	0.00	7490.00	3154	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-05I SHMW-05I 05/09/2002 45.00	SHMW-05S SHMW-05S 04/20/2000 2.00	SHMW-05S SHMW-05S 05/09/2002 12.00	SHMW-06I SHMW-06I 04/19/2000 35.00	SHMW-06I SHMW-06I 05/08/2002 45.00
Benzene	(ug/l)	1.0	1 U	[28]	[22]	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	[18]	1 U	1 U
Toluene	(ug/l)	5	1 U	2	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	[7]	[29]	1 U	1 U
Total BTEX	(ug/l)		0.00	37.00	69.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-06S SHMW-06S 04/19/2000 2.00	SHMW-06S SHMW-06S 05/08/2002 6.00	SHMW-07I SHMW-07I 04/19/2000 35.00	SHMW-07I SHMW-07I 04/30/2002 45.00	SHMW-07S SHMW-07S 04/19/2000 1.00
Benzene	(ug/l)	1.0	[1100]	[410]	1 U	1 U	[740]
Ethylbenzene	(ug/l)	5	[450]	[1000]	1 U	1 U	[480]
Toluene	(ug/l)	5	[92]	[53]	1 U	1 U	[31]
Xylene (total)	(ug/l)	5	[750]	[1000]	1 U	1 U	[760]
Total BTEX	(ug/l)		2392.00	2463.00	0.00	0.00	2011.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-07S SHMW-07S 04/30/2002 11.00	SHMW-08I SHMW-08I 04/19/2000 35.00	SHMW-08I SHMW-08I 05/08/2002 45.00	SHMW-08S SHMW-08S 04/19/2000 1.00	SHMW-08S SHMW-08S 05/08/2002 7.00
Benzene	(ug/l)	1.0	[340]	1 U	1 U	[5]	[2]
Ethylbenzene	(ug/l)	5	[640]	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	[22]	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	[560]	1 U	1 U	1 U	1 U
Total BTEX	(ug/l)		1562.00	0.00	0.00	5.00	2.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-09I SHMW-09I 04/18/2000 35.00	SHMW-09I SHMW-09I 05/13/2002 45.00	SHMW-09S SHMW-09S 04/18/2000 3.00	SHMW-09S SHMW-09S 05/13/2002 12.00	SHMW-10I SHMW-10I 05/15/2002 45.50
Benzene	(ug/l)	1.0	1 U	1 U	[390]	[180]	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	[420]	[220]	1 U
Toluene	(ug/l)	5	1 U	1 U	[14]	[6]	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	[200]	[100]	1 U
Total BTEX	(ug/l)		0.00	0.00	1024.00	506	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-10S SHMW-10S 05/15/2002 15.00	SHMW-11I SHMW-11I 05/15/2002 45.00	SHMW-11S SHMW-11S 05/15/2002 13.50	SHMW-12I SHMW-12I 05/15/2002 45.00	SHMW-12S SHMW-12S 05/15/2002 6.50
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	[52]
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	1 U	2
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	[5]
Total BTEX	(ug/l)		0.00	0.00	0.00	0.00	59.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-2
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-13I SHMW-13I 05/16/2002 45.00	SHMW-13S SHMW-13S 05/16/2002 6.50
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

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		MW-01	MW-01	MW-01	MW-01	MW-02
	SAMPLE ID	NYSDEC	MW-01	MW-01	MW-01	MW-01	MW-02
CONSTITUENT	DATE	SCG	11/21/1995	03/17/2000	04/19/2000	05/06/2002	11/21/1995
	DEPTH (ft)		7.30	7.30	7.30	7.32	7.25
Naphthalene	(ug/l)	10	[2600]	2 J	[160]	[14]	[3800]
2-Methylnaphthalene	(ug/l)		560	4 J	44	3 J	740 J
Acenaphthylene	(ug/l)		17	36	20	32	12
Acenaphthene	(ug/l)	20	[430]	[190] D	[24]	[46]	[240]
Dibenzofuran	(ug/l)		15	7 J	10 U	1 J	5 J
Fluorene	(ug/l)	50	[170]	[90]	6 J	12	[93]
Phenanthrene	(ug/l)	50	[300]	[310] D	2 J	11	[200]
Anthracene	(ug/l)	50	[58]	[100]	10 U	14	[55]
Fluoranthene	(ug/l)	50	[74]	[150]	10 U	20	<10
Pyrene	(ug/l)	50	[97]	[260] D	1 J	39	[64]
Benz(a)anthracene	(ug/l)	0.002	[22]	[83]	10 U	[19]	[33]
Chrysene	(ug/l)	0.002	[22]	[76]	10 U	[23]	[29]
Benzo(b)fluoranthene	(ug/l)	0.002	[8] J	[60]	10 U	[34]	[12]
Benzo(k)fluoranthene	(ug/l)	0.002	[11]	[18]	10 U	[21]	[18]
Benzo(a)pyrene	(ug/l)	0	[16]	[74]	[10] U	[46]	[800]
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[3] J	[35]	10 U	[29]	[5] J
Dibenz(a,h)anthracene	(ug/l)		500	8 J	10 U	10 U	800
Benzo(g,h,i)perylene	(ug/l)		3 J	45	10 U	38	6 J
Total CAPAHs	(ug/l)		582.00	354.00	0.00	172.00	1697.00
Total PAHs	(ug/l)		4906.00	1548.00	257.00	402.00	6991.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		MW-02	MW-02	MW-02	MW-03	MW-03
	SAMPLE ID	NYSDEC	MW-02	MW-02	MW-02	MW-03	MW-03
CONSTITUENT	DATE	SCG	03/17/2000	04/19/2000	05/07/2002	11/21/1995	03/17/2000
	DEPTH (ft)		7.25	7.25	7.25	10.20	10.20
Naphthalene	(ug/l)	10	[3700]	[4800] D	[6200]	[5400]	[1100]
2-Methylnaphthalene	(ug/l)		530	220 DJ	820	1400	350
Acenaphthylene	(ug/l)		250 U	10 U	73 J	10 U	34 J
Acenaphthene	(ug/l)	20	[300]	[84]	[620]	[220]	[320]
Dibenzofuran	(ug/l)		250 U	10 U	500 U	10 U	12 J
Fluorene	(ug/l)	50	[100] J	9 J	[240] J	10 U	[120]
Phenanthrene	(ug/l)	50	[310]	1 J	[920]	10 U	[360]
Anthracene	(ug/l)	50	[90] J	10 U	[290] J	10 U	[93] J
Fluoranthene	(ug/l)	50	[120] J	10 U	[380] J	7 J	[160]
Pyrene	(ug/l)	50	[160] J	10 U	[530]	5 J	[210]
Benz(a)anthracene	(ug/l)	0.002	[65] J	10 U	[200] J	[1] J	[65] J
Chrysene	(ug/l)	0.002	[52] J	10 U	[190] J	[1] J	[60] J
Benzo(b)fluoranthene	(ug/l)	0.002	[37] J	10 U	[91] J	10 U	[49] J
Benzo(k)fluoranthene	(ug/l)	0.002	250 U	10 U	[55] J	10 U	[16] J
Benzo(a)pyrene	(ug/l)	0	[47] J	[10] U	[120] J	[10] U	[56] J
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	250 U	10 U	500 U	10 U	[27] J
Dibenz(a,h)anthracene	(ug/l)		250 U	10 U	500 U	10 U	100 U
Benzo(g,h,i)perylene	(ug/l)		250 U	10 U	500 U	10 U	33 J
Total CAPAHs	(ug/l)		201.00	0.00	656.00	2.00	273.00
Total PAHs	(ug/l)		5511.00	5114.00	10729.00	7034.00	3065.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3

SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		MW-03	MW-03	MW-04	MW-04	MW-04
	SAMPLE ID	NYSDEC	MW-03	MW-03	MW-04	MW-04	MW-04
CONSTITUENT	DATE	SCG	04/20/2000	05/07/2002	11/21/1995	03/17/2000	05/07/2002
	DEPTH (ft)		10.20	10.17	6.81	6.81	6.81
Naphthalene	(ug/l)	10	[2900] D	[2700] D	[2400]	[16]	10 U
2-Methylnaphthalene	(ug/l)		300 DJ	340 D	670	2 J	10 U
Acenaphthylene	(ug/l)		4 J	15	800 U	2 J	10 U
Acenaphthene	(ug/l)	20	[170] DJ	[260] DJ	[190]	10	10 U
Dibenzofuran	(ug/l)		5 J	11	9 J	10 U	10 U
Fluorene	(ug/l)	50	36	[100]	[94]	4 J	10 U
Phenanthrene	(ug/l)	50	15	[120] DJ	[110]	9 J	10 U
Anthracene	(ug/l)	50	2 J	44	32	4 J	10 U
Fluoranthene	(ug/l)	50	10 U	46	33	6 J	10 U
Pyrene	(ug/l)	50	1 J	[62]	31	7 J	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	[15]	[11]	[3] J	10 U
Chrysene	(ug/l)	0.002	10 U	[16]	[11]	[2] J	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[9] J	[4] J	[3] J	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	[6] J	[5] J	[1] J	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[14]	[8] J	[4] J	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	[7] J	[2] J	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	9 J	2 J	2 J	10 U
Total CAPAHs	(ug/l)		0.00	67.00	41.00	13.00	0.00
Total PAHs	(ug/l)		3433.00	3774.00	3612.00	75.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC SCG	MW-05	MW-05	MW-05	MW-05	MW-06
	SAMPLE ID		MW-05	MW-05	MW-05	MW-05	MW-06
	DATE		11/21/1995	03/17/2000	04/20/2000	05/07/2002	11/21/1995
	DEPTH (ft)		7.50	7.50	7.50	7.46	7.50
Naphthalene	(ug/l)	10	[9300]	[140]	[56]	[200] D	[3700]
2-Methylnaphthalene	(ug/l)		4000	26	10	78	650 J
Acenaphthylene	(ug/l)		51	36	2 J	41	8 J
Acenaphthene	(ug/l)	20	[360]	[46]	12	[99]	[250] J
Dibenzofuran	(ug/l)		5 J	10 U	10 U	10 U	10
Fluorene	(ug/l)	50	[180]	16	4 J	38	[86] J
Phenanthrene	(ug/l)	50	[630]	15	4 J	[160]	[110] J
Anthracene	(ug/l)	50	[140]	30	2 J	[53]	800 U
Fluoranthene	(ug/l)	50	[170]	[89]	3 J	[92]	800 U
Pyrene	(ug/l)	50	[270]	[130]	6 J	[150]	800 U
Benz(a)anthracene	(ug/l)	0.002	[71]	[47]	[1] J	[49]	800 U
Chrysene	(ug/l)	0.002	[66]	[45]	[1] J	[50]	800 U
Benzo(b)fluoranthene	(ug/l)	0.002	[29]	[39]	10 U	[34]	800 U
Benzo(k)fluoranthene	(ug/l)	0.002	[39]	[10]	10 U	[14]	800 U
Benzo(a)pyrene	(ug/l)	0	[58]	[51]	[10] U	[49]	[800] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[8] J	[23]	10 U	[20]	[800]
Dibenz(a,h)anthracene	(ug/l)		1000	7 J	10 U	7 J	800 U
Benzo(g,h,i)perylene	(ug/l)		9 J	29	10 U	26	800 U
Total CAPAHs	(ug/l)		1271.00	222.00	2.00	223.00	800.00
Total PAHs	(ug/l)		16386.00	779.00	101.00	1160.00	5416.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		MW-06	MW-06	MW-06	SHMW-01I	SHMW-01I
	SAMPLE ID	NYSDEC	MW-6	MW-06	MW-06	SHMW-01I	SHMW-01,I
CONSTITUENT	DATE	SCG	03/17/2000	04/20/2000	05/07/2002	04/26/2000	05/06/2002
	DEPTH (ft)		7.50	7.50	7.47	35.00	45.00
Naphthalene	(ug/l)	10	[150]	[490] D	[78]	[15]	10 U
2-Methylnaphthalene	(ug/l)		62	54	9 J	4 J	10 U
Acenaphthylene	(ug/l)		19	2 J	8 J	10 U	10 U
Acenaphthene	(ug/l)	20	[140]	[82]	[72]	4 J	10 U
Dibenzofuran	(ug/l)		6 J	2 J	2 J	10 U	10 U
Fluorene	(ug/l)	50	[61]	18	21	2 J	10 U
Phenanthrene	(ug/l)	50	[120]	5 J	19	5 J	10 U
Anthracene	(ug/l)	50	43	10 U	6 J	10 U	10 U
Fluoranthene	(ug/l)	50	[50]	10 U	4 J	1 J	10 U
Pyrene	(ug/l)	50	[68]	10 U	6 J	1 J	10 U
Benz(a)anthracene	(ug/l)	0.002	[26]	10 U	[2] J	10 U	10 U
Chrysene	(ug/l)	0.002	[26]	10 U	[2] J	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	[28]	10 U	[4] J	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	[8] J	10 U	[2] J	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[36]	[10] U	[7] J	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[20]	10 U	[6] J	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		4 J	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		27	10 U	10	10 U	10 U
Total CAPAHs	(ug/l)		148.00	0.00	23.00	0.00	0.00
Total PAHs	(ug/l)		894.00	653.00	258.00	32.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		SHMW-01S	SHMW-01S	SHMW-02D	SHMW-02D	SHMW-02I
	SAMPLE ID	NYSDEC	SHMW-01S	SHMW-01,S	SHMW-02D	SHMW-02,D	SHMW-02I
CONSTITUENT	DATE	SCG	04/26/2000	05/06/2002	04/24/2000	05/06/2002	04/24/2000
	DEPTH (ft)		1.00	6.00	65.00	75.00	35.00
Naphthalene	(ug/l)	10	[2900] D	[2100]	10 U	[49]	9 J
2-Methylnaphthalene	(ug/l)		380 D	270	10 U	8 J	33
Acenaphthylene	(ug/l)		15	200 U	8 J	12	52
Acenaphthene	(ug/l)	20	[260] DJ	[190] J	[80]	2 J	[33]
Dibenzofuran	(ug/l)		6 J	200 U	3 J	10 U	3 J
Fluorene	(ug/l)	50	[83]	48 J	42	2 J	36
Phenanthrene	(ug/l)	50	[220] DJ	[55] J	[75]	3 J	[70]
Anthracene	(ug/l)	50	48	200 U	18	10 U	13
Fluoranthene	(ug/l)	50	[55]	200 U	19	10 U	8 J
Pyrene	(ug/l)	50	[74]	200 U	26	10 U	9 J
Benz(a)anthracene	(ug/l)	0.002	[25]	200 U	[7] J	10 U	10 U
Chrysene	(ug/l)	0.002	[27]	200 U	[7] J	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	[15]	200 U	[7] J	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	[6] J	200 U	[2] J	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[17]	[200] U	[5] J	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[7] J	200 U	[4] J	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	200 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		9 J	200 U	5 J	10 U	10 U
Total CAPAHs	(ug/l)		97.00	0.00	32.00	0.00	0.00
Total PAHs	(ug/l)		4147.00	2663.00	308.00	76.00	266.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-02I SHMW-02,I 05/06/2002 45.00	SHMW-03I SHMW-03I 04/20/2000 35.00	SHMW-03I SHMW-03I 05/10/2002 45.00	SHMW-03S SHMW-03S 04/20/2000 2.00	SHMW-03S SHMW-03S 05/10/2002 12.00
Naphthalene	(ug/l)	10	10 U	10 U	[160]	[230] D	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	6 J	61	10 U
Acenaphthylene	(ug/l)		10 U	10 U	13 J	2 J	10 U
Acenaphthene	(ug/l)	20	10 U	2 J	[34]	[46]	10 U
Dibenzofuran	(ug/l)		10 U	10 U	20 U	1 J	10 U
Fluorene	(ug/l)	50	10 U	10 U	8 J	16	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	9 J	34	10 U
Anthracene	(ug/l)	50	10 U	10 U	6 J	8 J	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	6 J	7 J	10 U
Pyrene	(ug/l)	50	10 U	10 U	12 J	9 J	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	[10] J	[3] J	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	[11] J	[3] J	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	[10] J	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	[4] J	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[13] J	[2] J	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	[7] J	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	20 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	11 J	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	55.00	8.00	0.00
Total PAHs	(ug/l)		0.00	2.00	320.00	422.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-04I SHMW-04I 04/20/2000 35.00	SHMW-04I SHMW-04I 05/13/2002 45.00	SHMW-04S SHMW-04S 04/20/2000 2.00	SHMW-04S SHMW-04S 05/13/2002 12.00	SHMW-05I SHMW-05I 04/20/2000 35.00
Naphthalene	(ug/l)	10	10 U	10 U	[2700] D	[3600] D	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	460 D	460 D	10 U
Acenaphthylene	(ug/l)		10 U	10 U	16	16	10 U
Acenaphthene	(ug/l)	20	6 J	10 U	[330] D	[370] D	10 U
Dibenzofuran	(ug/l)		10 U	10 U	7 J	5 J	10 U
Fluorene	(ug/l)	50	10 U	10 U	[100]	[81]	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	[300] D	[240] DJ	10 U
Anthracene	(ug/l)	50	10 U	10 U	[61]	48	10 U
Fluoranthene	(ug/l)	50	2 J	10 U	[65]	[55]	10 U
Pyrene	(ug/l)	50	8 J	10 U	[100]	[93]	10 U
Benz(a)anthracene	(ug/l)	0.002	[1] J	10 U	[35]	[33]	10 U
Chrysene	(ug/l)	0.002	[1] J	10 U	[38]	[30]	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	[21]	[20]	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	[7] J	[7] J	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[25]	[25]	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	[10]	[9] J	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	3 J	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	12	10 U
Total CAPAHs	(ug/l)		2.00	0.00	136.00	127	0.00
Total PAHs	(ug/l)		18.00	0.00	4275.00	5107	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-05I SHMW-05I 05/09/2002 45.00	SHMW-05S SHMW-05S 04/20/2000 2.00	SHMW-05S SHMW-05S 05/09/2002 12.00	SHMW-06I SHMW-06I 04/20/2000 35.00	SHMW-06I SHMW-06I 05/08/2002 45.00
Naphthalene	(ug/l)	10	10 U	10 U	[97]	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	5 J	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	1 J	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	13	[26]	1 J	10 U
Dibenzofuran	(ug/l)		10 U	10 U	1 J	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	8 J	10 U	10 U
Phenanthrene	(ug/l)	50	2 J	10 U	18	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	5 J	10 U	10 U
Fluoranthene	(ug/l)	50	4 J	10 U	4 J	10 U	10 U
Pyrene	(ug/l)	50	3 J	10 U	5 J	1 J	10 U
Benz(a)anthracene	(ug/l)	0.002	[1] 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	[1] J	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	[1] J	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)		8.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		17.00	13.00	170.00	2.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		SHMW-06S	SHMW-06S	SHMW-07I	SHMW-07I	SHMW-07S
	SAMPLE ID	NYSDEC	SHMW-06S	SHMW-06S	SHMW-07I	SHMW-07I	SHMW-07S
CONSTITUENT	DATE	SCG	04/19/2000	05/08/2002	04/19/2000	04/30/2002	04/19/2000
	DEPTH (ft)		2.00	6.00	35.00	45.00	1.00
Naphthalene	(ug/l)	10	[3700] D	[4000] D	10 U	10 U	[5700] D
2-Methylnaphthalene	(ug/l)		260 DJ	330 D	10 U	10 U	660 DJ
Acenaphthylene	(ug/l)		79	5 J	10 U	10 U	11
Acenaphthene	(ug/l)	20	[63]	[200] DJ	10 U	10 U	[300] DJ
Dibenzofuran	(ug/l)		2 J	5 J	10 U	10 U	12
Fluorene	(ug/l)	50	18	[56]	10 U	10 U	[98]
Phenanthrene	(ug/l)	50	5 J	[70]	10 U	10 U	[180] DJ
Anthracene	(ug/l)	50	1 J	15	10 U	10 U	[53]
Fluoranthene	(ug/l)	50	1 J	6 J	10 U	10 U	44
Pyrene	(ug/l)	50	1 J	7 J	10 U	10 U	[60]
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	[20]
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	[31]
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	[12]
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U	[3] J
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[10] U	[10] U	[15]
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	[5] J
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	7 J
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	86.00
Total PAHs	(ug/l)		4130.00	4694.00	0.00	0.00	7211.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-07S SHMW-07S 04/30/2002 11.00	SHMW-08I SHMW-08I 04/19/2000 35.00	SHMW-08I SHMW-08I 05/08/2002 45.00	SHMW-08S SHMW-08S 04/20/2000 1.00	SHMW-08S SHMW-08S 05/08/2002 7.00
Naphthalene	(ug/l)	10	[5200]	10 U	10 U	10 U	[16]
2-Methylnaphthalene	(ug/l)		780	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		500 U	1 J	10 U	13	10 U
Acenaphthene	(ug/l)	20	[390] J	2 J	10 U	[40]	[20]
Dibenzofuran	(ug/l)		500 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	[95] J	2 J	10 U	15	11
Phenanthrene	(ug/l)	50	[120] J	4 J	10 U	5 J	16
Anthracene	(ug/l)	50	500 U	10 U	10 U	5 J	2 J
Fluoranthene	(ug/l)	50	500 U	2 J	10 U	12	3 J
Pyrene	(ug/l)	50	500 U	2 J	10 U	14	3 J
Benz(a)anthracene	(ug/l)	0.002	500 U	10 U	10 U	[2] J	10 U
Chrysene	(ug/l)	0.002	500 U	10 U	10 U	[2] J	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	500 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	500 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[500] U	[10] U	[10] U	[2] J	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	500 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		500 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		500 U	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	6.00	0.00
Total PAHs	(ug/l)		6585.00	13.00	0.00	110.00	71.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-09I SHMW-09I 04/18/2000 35.00	SHMW-09I SHMW-09I 05/13/2002 45.00	SHMW-09S SHMW-09S 04/18/2000 3.00	SHMW-09S SHMW-09S 05/13/2002 12.00	SHMW-10I SHMW-10I 05/15/2002 45.50
Naphthalene	(ug/l)	10	10 U	10 U	[1600] D	[2200] D	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	79	99	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	1 J	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	[79]	[120]	10 U
Dibenzofuran	(ug/l)		10 U	10 U	2 J	3 J	10 U
Fluorene	(ug/l)	50	10 U	10 U	15	25	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	10	20	10 U
Anthracene	(ug/l)	50	10 U	10 U	2 J	4 J	10 U
Fluoranthene	(ug/l)	50	1 J	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	2 J	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)		3.00	0.00	1787.00	2472	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-10S SHMW-10S 05/15/2002 15.00	SHMW-11I SHMW-11I 05/15/2002 45.00	SHMW-11S SHMW-11S 05/15/2002 13.50	SHMW-12I SHMW-12I 05/15/2002 45.00	SHMW-12S SHMW-12S 05/15/2002 6.50
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	[58]
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	[21]	10 U	10 U	10 U	2 J
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	1 J	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)		22.00	0.00	0.00	0.00	60.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-3
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHMW-13I SHMW-13I 05/16/2002 45.00	SHMW-13S SHMW-13S 05/16/2002 6.50
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

---:Not Analyzed

TABLE D-4
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
CYANIDE

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

SITE	DATE	DEPTH	SAMPLE ID	Cyanide (ug/l)
MW-01	03/17/2000	7.30	MW-01	4 U
MW-01	04/19/2000	7.30	MW-01	14.6 B
MW-01	05/06/2002	7.32	MW-01	7.5 B
MW-02	03/17/2000	7.25	MW-02	92.2
MW-02	04/19/2000	7.25	MW-02	13.5 B
MW-02	05/07/2002	7.25	MW-02	16.2 B
MW-03	03/17/2000	10.20	MW-03	4 U
MW-03	04/20/2000	10.20	MW-03	19.9 B
MW-03	05/07/2002	10.17	MW-03	21.2
MW-04	03/17/2000	6.81	MW-04	28.1
MW-04	05/07/2002	6.81	MW-04	27.3
MW-05	03/17/2000	7.50	MW-05	72
MW-05	04/20/2000	7.50	MW-05	4 U
MW-05	05/07/2002	7.46	MW-05	2.8 B
MW-06	03/17/2000	7.50	MW-6	34.4
MW-06	04/20/2000	7.50	MW-06	24.8
MW-06	05/07/2002	7.47	MW-06	29.6
SHMW-01I	04/26/2000	35.00	SHMW-01I	4 U
SHMW-01I	05/06/2002	45.00	SHMW-01,I	5 U
SHMW-01S	04/26/2000	1.00	SHMW-01S	9.9 B
SHMW-01S	05/06/2002	6.00	SHMW-01,S	11.8 B
SHMW-02D	04/24/2000	65.00	SHMW-02D	4 U
SHMW-02D	05/06/2002	75.00	SHMW-02,D	5 U
SHMW-02I	04/24/2000	35.00	SHMW-02I	4 U
SHMW-02I	05/06/2002	45.00	SHMW-02,I	5 U
SHMW-03I	04/20/2000	35.00	SHMW-03I	4 U
SHMW-03I	05/10/2002	45.00	SHMW-03I	2.5 B*
SHMW-03S	04/20/2000	2.00	SHMW-03S	4 U
SHMW-03S	05/10/2002	12.00	SHMW-03S	2.5 B*
SHMW-04I	04/20/2000	35.00	SHMW-04I	4 U
SHMW-04I	05/13/2002	45.00	SHMW-04I	5 U
SHMW-04S	04/20/2000	2.00	SHMW-04S	15.3 B
SHMW-04S	05/13/2002	12.00	SHMW-04S	9.4 B
SHMW-05I	04/20/2000	35.00	SHMW-05I	<4

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-4
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER MONITORING WELL SAMPLE RESULTS
CYANIDE

PERIOD: From 11/21/1995 thru 05/16/2002 - Inclusive
SAMPLE TYPE: Water

SITE	DATE	DEPTH	SAMPLE ID	Cyanide (ug/l)
SHMW-05I	05/09/2002	45.00	SHMW-05I	5 U
SHMW-05S	04/20/2000	2.00	SHMW-05S	7.2 B
SHMW-05S	05/09/2002	12.00	SHMW-05S	5.1 B
SHMW-06I	04/19/2000	35.00	SHMW-06I	4 U
SHMW-06I	05/08/2002	45.00	SHMW-06I	5 U
SHMW-06S	04/19/2000	2.00	SHMW-06S	34.3
SHMW-06S	05/08/2002	6.00	SHMW-06S	27.7
SHMW-07I	04/19/2000	35.00	SHMW-07I	5 B
SHMW-07I	04/30/2002	45.00	SHMW-07I	5 U
SHMW-07S	04/19/2000	1.00	SHMW-07S	103
SHMW-07S	04/30/2002	11.00	SHMW-07S	85.3
SHMW-08I	04/19/2000	35.00	SHMW-08I	4.6 B
SHMW-08I	05/08/2002	45.00	SHMW-08I	5 U
SHMW-08S	04/19/2000	1.00	SHMW-08S	23.8
SHMW-08S	05/08/2002	7.00	SHMW-08S	17.1 B
SHMW-09I	04/18/2000	35.00	SHMW-09I	4 U
SHMW-09I	05/13/2002	45.00	SHMW-09I	5 U
SHMW-09S	04/18/2000	3.00	SHMW-09S	15.8 B
SHMW-09S	05/13/2002	12.00	SHMW-09S	12.6 B
SHMW-10I	05/15/2002	45.50	SHMW-10I	2.0 U
SHMW-10S	05/15/2002	15.00	SHMW-10S	2.0 U
SHMW-11I	05/15/2002	45.00	SHMW-11I	2.0 U
SHMW-11S	05/15/2002	13.50	SHMW-11S	2.0 U
SHMW-12I	05/15/2002	45.00	SHMW-12I	2.0 U
SHMW-12S	05/15/2002	6.50	SHMW-12S	41.5
SHMW-13I	05/16/2002	45.00	SHMW-13I	5 U
SHMW-13S	05/16/2002	6.50	SHMW-13S	5 U

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-01 SHGP-01 (1-5) 03/14/2000 1.00	SHGP-01 SHGP-01 (32-34) 03/14/2000 32.00	SHGP-02 SHGP-02 (1-5) 03/14/2000 1.00	SHGP-02 SHGP-02 (32-34) 03/14/2000 32.00	SHGP-02 SHGP-02 (48-52) 04/20/2000 48.00
Benzene	(ug/l)	1.0	[710]	[22]	[4800]	[8700]	[4]
Ethylbenzene	(ug/l)	5	[540]	[34]	[1200]	[3300]	[9]
Toluene	(ug/l)	5	200 U	3	1000 U	[7900]	[10]
Xylene (total)	(ug/l)	5	[740]	[45]	[1400]	[4000]	[14]
Total BTEX	(ug/l)		1990.00	104.00	7400.00	23900.00	37.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-02 SHGP-02 (58-62) 04/20/2000 58.00	SHGP-03 SHGP-03 (2-6) 03/14/2000 2.00	SHGP-03 SHGP-03 (33-35) 03/14/2000 33.00	SHGP-04 SHGP-04 (30-32) 03/15/2000 30.00	SHGP-04 SHGP-04 (0-4) 03/15/2000 0.00
Benzene	(ug/l)	1.0	[1]	100 U	[19]	1 U	[66]
Ethylbenzene	(ug/l)	5	[5]	[150]	[24]	1 U	50 U
Toluene	(ug/l)	5	4	100 U	4	1 U	50 U
Xylene (total)	(ug/l)	5	[8]	[160]	[30]	1 U	50 U
Total BTEX	(ug/l)		18.00	310.00	77.00	0.00	66.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-05 SHGP-05 (0-4) 03/15/2000 0.00	SHGP-05 SHGP-05 (30-32) 03/15/2000 30.00	SHGP-05 SHGP-05 (48-50) 03/22/2000 48.00	SHGP-05 SHGP-05 (60-62) 03/22/2000 60.00	SHGP-06 SHGP-06(.5-4.5) 03/15/2000 0.50
Benzene	(ug/l)	1.0	[78]	[310]	[17]	1 U	[170]
Ethylbenzene	(ug/l)	5	[360]	[1200]	[40]	4	[1800]
Toluene	(ug/l)	5	[25]	[950]	[12]	1 U	[390]
Xylene (total)	(ug/l)	5	[540]	[1800]	[82]	[9]	[4600]
Total BTEX	(ug/l)		1003.00	4260.00	151.00	13.00	6960.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-06 SHGP-06(31-33) 03/15/2000 31.00	SHGP-07 SHGP-07 (0-4) 03/15/2000 0.00	SHGP-07 SHGP-07 (30-32) 03/15/2000 30.00	SHGP-08 SHGP-08 (0-4) 03/14/2000 0.00	SHGP-08 SHGP-08 (30-32) 03/14/2000 30.00
Benzene	(ug/l)	1.0	[3]	1 U	[4]	[100]	[2]
Ethylbenzene	(ug/l)	5	[5]	1 U	2	[230]	4
Toluene	(ug/l)	5	1 U	1 U	1 U	[15]	1 U
Xylene (total)	(ug/l)	5	4	1 U	1 U	[270]	4
Total BTEX	(ug/l)		12.00	0.00	6.00	615.00	10.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-09 SHGP-09 (0-4) 03/14/2000 0.00	SHGP-09 SHGP-09 (30-32) 03/14/2000 30.00	SHGP-10 SHGP-10 (0-4) 03/14/2000 0.00	SHGP-10 SHGP-10 (30-32) 03/14/2000 32.00	SHGP-10 SHGP-10(48-52) 04/20/2000 48.00
Benzene	(ug/l)	1.0	[5500]	[10]	[4500]	[170]	1 U
Ethylbenzene	(ug/l)	5	[670]	[8]	[920]	[270]	2
Toluene	(ug/l)	5	100 U	1 U	[570]	[28]	1 U
Xylene (total)	(ug/l)	5	[690]	[8]	[1100]	[330]	1
Total BTEX	(ug/l)		6860.00	26.00	7090.00	798.00	3.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-10 SHGP-10(58-62) 04/20/2000 58.00	SHGP-11 SHGP-11 (0-4) 03/15/2000 0.00	SHGP-11 SHGP-11 (30-32) 03/15/2000 30.00	SHGP-12 SHGP-12 (0-4) 03/15/2000 0.00	SHGP-12 SHGP-12 (30-32) 03/15/2000 30.00
Benzene	(ug/l)	1.0	[2]	[12]	[16]	[85] ?	[2] J?
Ethylbenzene	(ug/l)	5	3	[410]	[23]	[120] ?	1 ?
Toluene	(ug/l)	5	1	5 U	1 U	[11] ?	1 U?
Xylene (total)	(ug/l)	5	[5]	[370]	[18]	[130] ?	1 U?
Total BTEX	(ug/l)		11.00	792.00	57.00	346.00	1.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-13 SHGP-13 (0-4) 03/15/2000 0.00	SHGP-13 SHGP-13 (30-32) 03/15/2000 30.00	SHGP-14 SHGP-14 (3-7) 03/10/2000 3.00	SHGP-14 SHGP-14 (33-35) 03/10/2000 33.00	SHGP-15 SHGP-15 (3-7) 03/09/2000 3.00
Benzene	(ug/l)	1.0	[49]	[2]	[40]	1 U	[50]
Ethylbenzene	(ug/l)	5	[13]	3	[320]	4	[120]
Toluene	(ug/l)	5	1 U	1 U	10 U	1 U	2 U
Xylene (total)	(ug/l)	5	[13]	2	[250]	3 B	[53]
Total BTEX	(ug/l)		75.00	7.00	610.00	7.00	223.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-15 SHGP-15 (26-28) 03/09/2000 26.00	SHGP-15 SHGP-15 (33-35) 03/09/2000 33.00	SHGP-16 SHGP-16 (3-7) 03/09/2000 3.00	SHGP-16 SHGP-16 (26-28) 03/09/2000 26.00	SHGP-16 SHGP-16 (33-35) 03/09/2000 33.00
Benzene	(ug/l)	1.0	[500]	[5]	[140]	[14]	1 U
Ethylbenzene	(ug/l)	5	[220]	2	[48]	[370]	[5]
Toluene	(ug/l)	5	10 U	1 U	2 U	[79]	1
Xylene (total)	(ug/l)	5	[170]	2	[24]	[260]	4
Total BTEX	(ug/l)		890.00	9.00	212.00	723.00	10.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-17 SHGP-17 (3-7) 03/10/2000 3.00	SHGP-17 SHGP-17 (33-35) 03/10/2000 33.00	SHGP-18 SHGP-18 (3-7) 03/07/2000 3.00	SHGP-18 SHGP-18 (30-32) 03/07/2000 30.00	SHGP-19 SHGP-19 (3-7) 03/09/2000 3.00
Benzene	(ug/l)	1.0	[66]	1 U	[370]	[17]	[1200]
Ethylbenzene	(ug/l)	5	[48]	1 U	[300]	[9]	[640]
Toluene	(ug/l)	5	1 U	1 U	[30]	1	44 U
Xylene (total)	(ug/l)	5	[36]	1 U	[250]	[7]	[740]
Total BTEX	(ug/l)		150.00	0.00	950.00	34.00	2580.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-19 SHGP-19 (33-35) 03/09/2000 33.00	SHGP-20 SHGP-20 (2-6) 03/07/2000 2.00	SHGP-20 SHGP-20 (33-35) 03/08/2000 33.00	SHGP-21 SHGP-21 (2-6) 03/10/2000 2.00	SHGP-21 SHGP-21 (31-33) 03/10/2000 31.00
Benzene	(ug/l)	1.0	[42]	[2000]	[30]	[50]	1 U
Ethylbenzene	(ug/l)	5	[49]	[680]	[8]	[110]	1 U
Toluene	(ug/l)	5	2	100 U	1 U	2 U	1 U
Xylene (total)	(ug/l)	5	[60]	[570]	[7]	[68]	1 U
Total BTEX	(ug/l)		153.00	3250.00	45.00	228.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-22 SHGP-22 (1-5) 03/10/2000 1.00	SHGP-22 SHGP-22 (30-32) 03/10/2000 30.00	SHGP-23 SHGP-23 (2-6) 03/08/2000 2.00	SHGP-23 SHGP-23 (32-34) 03/08/2000 32.00	SHGP-24 SHGP-24 (33-35) 03/08/2000 33.00
Benzene	(ug/l)	1.0	[800]	1 U	[680] D	5 U	5 U
Ethylbenzene	(ug/l)	5	[820]	[11]	[620] D	5 U	5 U
Toluene	(ug/l)	5	[48]	1 U	[36]	5 U	5 U
Xylene (total)	(ug/l)	5	[400]	4 B	[530]	5 U	5 U
Total BTEX	(ug/l)		2068.00	15.00	1866.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-24 SHGP-24 (1-5) 03/09/2000 1.00	SHGP-25 SHGP-25 (2-6) 03/16/2000 2.00	SHGP-25 SHGP-25 (32-34) 03/16/2000 32.00	SHGP-26 SHGP-26 (0-4) 03/16/2000 0.00	SHGP-26 SHSB-26 (30-32) 03/16/2000 30.00
Benzene	(ug/l)	1.0	1 U	[230]	[1]	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	[820]	2	3	1
Toluene	(ug/l)	5	1 U	[25]	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	[810]	2	2	1 U
Total BTEX	(ug/l)		0.00	1885.00	5.00	5.00	1.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-27 SHGP-27 (0-4) 03/24/2000 0.00	SHGP-27 SHGP-27 (30-32) 03/24/2000 30.00	SHGP-28 SHGP-28 (4-8) 05/22/2000 4.00	SHGP-28 SHGP-28 (34-38) 05/22/2000 34.00	SHGP-29 SHGP-29 (30-34) 04/10/2000 30.00
Benzene	(ug/l)	1.0	[96]	[1]	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	4	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	[12]	1 U*	1 U	1 U	1 U
Total BTEX	(ug/l)		112.00	1.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-29 SHGP-29 (7-11) 04/10/2000 7.00	SHGP-30 SHGP-30(46-50) 04/23/2001 46.00	SHGP-30 SHGP-30(30-34) 04/23/2001 30.00	SHGP-30 SHGP-30(6-10) 04/23/2001 6.00	SHGP-31 SHGP-31(30-34) 04/05/2002 30.00
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

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-31 SHGP-31(4-8) 04/05/2002 4.00	SHGP-32 SHGP-32(6.5-10) 04/17/2002 6.50	SHGP-32 SHGP-32(30-34) 04/17/2002 30.00	SHGP-33 SHGP-33(30-34) 04/12/2002 30.00	SHGP-33 SHGP-33(4-8) 04/12/2002 4.00
Benzene	(ug/l)	1.0	1 U	1 U	[2]	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	1 U	2
Total BTEX	(ug/l)		0.00	0.00	3.00	0.00	2.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-34 SHGP-34(30-34) 04/03/2002 30.00	SHGP-34 SHGP-34(4-8) 04/03/2002 4.00	SHGP-34 SHGP-34(71-75) 04/24/2002 71.00	SHGP-34 SHGP-34(56-60) 04/24/2002 56.00	SHGP-34 SHGP-34(41-45) 04/24/2002 41.00
Benzene	(ug/l)	1.0	[3]	[24]	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	[140]	[37]	1 U	1 U	1 U
Toluene	(ug/l)	5	4	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	[49]	[14]	1 U	1 U	1 U
Total BTEX	(ug/l)		196.00	75.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-35 SHGP-35(30-34) 04/03/2002 30.00	SHGP-35 SHGP-35S 04/03/2002 6.00	SHGP-36 SHGP-36I 04/10/2002 30.00	SHGP-36 SHGP-36(4-8) 04/10/2002 4.00	SHGP-37 SHGP-37(30-34) 03/29/2002 30.00
Benzene	(ug/l)	1.0	[52]	[28]	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	[89]	4	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	[20]	[6]	1 U	1 U	1 U
Total BTEX	(ug/l)		161.00	38.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-37 SHGP-37S 03/29/2002 2.00	SHGP-38 SHGP-38(30-34) 04/09/2002 30.00	SHGP-38 SHGP-38(2-6) 04/09/2002 2.00	SHGP-39 SHGP-39(30-34) 04/10/2002 30.00	SHGP-39 SHGP-39(4-8) 04/10/2002 4.00
Benzene	(ug/l)	1.0	[510]	1 U	[3]	1 U	[30]
Ethylbenzene	(ug/l)	5	[800]	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	[17]	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	[500]	1 U	1 U	1 U	3
Total BTEX	(ug/l)		1827.00	0.00	3.00	0.00	33.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-40 SHGP-40(30-34) 04/12/2002 30.00	SHGP-40 SHGP-40(5-9) 04/12/2002 5.00	SHGP-41 SHGP-41(30-34) 04/09/2002 30.00	SHGP-41 SHGP-41(6-10) 04/09/2002 6.00	SHGP-42 SHGP-42I 04/01/2002 30.00
Benzene	(ug/l)	1.0	1 U	[84]	1 U	[560]	1 U
Ethylbenzene	(ug/l)	5	1 U	[27]	1 U	[1100]	1 U
Toluene	(ug/l)	5	1 U	2 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	[37]	1 U	[550]	1 U
Total BTEX	(ug/l)		0.00	148.00	0.00	2210.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-42 SHGP-42(2-6) 04/01/2002 2.00	SHGP-43 SHGP-43(30-34) 03/28/2002 30.00	SHGP-43 SHGP-43(2-6) 03/28/2002 2.00	SHGP-44 SHGP-44(30-34) 04/11/2002 30.00	SHGP-44 SHGP-44(4-8) 04/11/2002 4.00
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	[3]
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	1 U	1 U	1 U	2
Total BTEX	(ug/l)		1.00	0.00	0.00	0.00	5.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-45 SHGP-45I(30-34) 04/16/2002 30.00	SHGP-45 SHGP-45S(2-6) 04/16/2002 2.00	SHGP-46 SHGP-46(30-34) 04/02/2002 30.00	SHGP-46 SHGP-46(2-6) 04/17/2002 2.00	SHGP-47 SHGP-47(30-34) 04/25/2002 30.00
Benzene	(ug/l)	1.0	1 U	[1]	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	2	1 U
Total BTEX	(ug/l)		0.00	0.00	0.00	2.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-47 SHGP-47(4-8) 04/25/2002 4.00	SHGP-48 SHGP-48(30-34) 04/24/2002 30.00	SHGP-48 SHGP-48(7.5-11. 04/24/2002 7.50	SHGP-49 SHGP-49(30-34) 04/26/2002 30.00	SHGP-49 SHGP-49(2-6) 04/26/2002 2.00
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

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-50 SHGP-50I(30-34) 04/30/2002 30.00	SHGP-50 SHGP-50S(4-8) 04/30/2002 4.00	SHGP-51 SHGP-51(30-34) 04/25/2002 30.00	SHGP-51 SHGP-51(4-8) 04/25/2002 4.00	SHGP-52 SHGP-52(71-75) 04/26/2002 71.00
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

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-52 SHGP-52(56-60) 04/26/2002 56.00	SHGP-52 SHGP-52(41-45) 04/26/2002 41.00	SHGP-53 SHGP-53(30-34) 05/03/2002 30.00	SHGP-53 SHGP-53(6-10) 05/03/2002 6.00	SHGP-53 SHGP-53(46-50) 05/23/2002 46.00
Benzene	(ug/l)	1.0	1 U	1 U	[62]	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	[5]	1 U	1 U
Total BTEX	(ug/l)		0.00	0.00	67.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-54 SHGP-54(30-34) 05/09/2002 30.00	SHGP-54 SHGP-54(4-8) 05/09/2002 4.00	SHGP-55 SHGP-55(30-34) 05/03/2002 30.00	SHGP-55 SHGP-55(6-10) 05/03/2002 6.00	SHGP-56 SHGP-56(30-34) 05/01/2002 30.00
Benzene	(ug/l)	1.0	1 U	1 U	1 U	[1]	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	1.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-56 SHGP-56(2.5-6.5 05/01/2002 2.50	SHGP-57 SHGP-57(30-34) 05/09/2002 30.00	SHGP-57 SHGP-57(5-9) 05/09/2002 5.00	SHGP-58 SHGP-58 (46-50) 05/31/2002 46.00	SHGP-58 SHGP-58 (30-34) 05/31/2002 30.00
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U	[20]
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	1 U	1
Toluene	(ug/l)	5	1 U	1 U	1 U	1	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	1	21

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-5
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-58 SHGP-58 (8-12) 05/31/2002 8.00	SHGP-59 SHGP-59(7-11) 05/30/2002 11.00	SHGP-59 SHGP-59(30-34) 05/30/2002 34.00	SHGP-59 SHGP-59(46-50) 05/30/2002 50.00
Benzene	(ug/l)	1.0	1 U	1 U	1 U	1 U
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	1 U
Toluene	(ug/l)	5	2	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	1 U	1 U
Total BTEX	(ug/l)		2	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-01 SHGP-01 (1-5) 03/14/2000 1.00	SHGP-01 SHGP-01 (32-34) 03/14/2000 32.00	SHGP-02 SHGP-02 (1-5) 03/14/2000 1.00	SHGP-02 SHGP-02 (32-34) 03/14/2000 32.00	SHGP-02 SHGP-02 (48-52) 04/20/2000 48.00
Naphthalene	(ug/l)	10	[5600]	[160]	[2600] D	[5000]	[44]
2-Methylnaphthalene	(ug/l)		2000	38	430	1400	13
Acenaphthylene	(ug/l)		180 J	10 U	32 J	350 J	7 J
Acenaphthene	(ug/l)	20	[1700]	[31]	[160]	[830]	4 J
Dibenzofuran	(ug/l)		400 U	10 U	10 J	500 U	10 U
Fluorene	(ug/l)	50	[730]	13	[70]	[400] J	5 J
Phenanthrene	(ug/l)	50	[2700]	38	[240]	[1600]	22
Anthracene	(ug/l)	50	[790]	9 J	[62]	[410] J	4 J
Fluoranthene	(ug/l)	50	[940]	8 J	[60]	[480] J	5 J
Pyrene	(ug/l)	50	[1400]	12	[95]	[750]	7 J
Benz(a)anthracene	(ug/l)	0.002	[500]	[3] J	[33] J	[230] J	10 U
Chrysene	(ug/l)	0.002	[430]	[2] J	[32] J	[200] J	[1] J
Benzo(b)fluoranthene	(ug/l)	0.002	[250] J	[1] J	[20] J	[140] J	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	[94] J	10 U	[6] J	500 U	10 U
Benzo(a)pyrene	(ug/l)	0	[340] J	[2] J	[29] J	[190] J	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[130] J	10 U	[13] J	[65] J	10 U
Dibenz(a,h)anthracene	(ug/l)		400 U	10 U	50 U	500 U	10 U
Benzo(g,h,i)perylene	(ug/l)		140 J	10 U	18 J	98 J	10 U
Total CAPAHs	(ug/l)		1744.00	8.00	133.00	825.00	1.00
Total PAHs	(ug/l)		17924.00	317.00	3910.00	12143.00	112.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		SHGP-02	SHGP-03	SHGP-03	SHGP-04	SHGP-04
	SAMPLE ID	NYSDEC	SHGP-02 (58-62)	SHGP-03 (2-6)	SHGP-03 (33-35)	SHGP-04 (30-32)	SHGP-04 (0-4)
CONSTITUENT	DATE	SCG	04/20/2000	03/14/2000	03/20/2000	03/15/2000	03/15/2000
	DEPTH (ft)		58.00	2.00	33.00	30.00	0.00
Naphthalene	(ug/l)	10	[19]	[1200] D	[120]	[12] J	[6500] D
2-Methylnaphthalene	(ug/l)		4 J	48 J	41	10 J	3000 D
Acenaphthylene	(ug/l)		2 J	13 J	6 J	13 J	300
Acenaphthene	(ug/l)	20	2 J	[57]	[36]	[38] J	[3300] D
Dibenzofuran	(ug/l)		10 U	50 U	2 J	50 U	96
Fluorene	(ug/l)	50	2 J	20 J	17	25 J	[1800] D
Phenanthrene	(ug/l)	50	7 J	[51]	42	[94]	[6300] D
Anthracene	(ug/l)	50	2 J	17 J	10	36 J	[2300] D
Fluoranthene	(ug/l)	50	2 J	24 J	7 J	47 J	[2200] D
Pyrene	(ug/l)	50	3 J	48 J	9 J	[62]	[2900] D
Benz(a)anthracene	(ug/l)	0.002	10 U	[18] J	[2] J	[25] J	[1100] D
Chrysene	(ug/l)	0.002	10 U	[15] J	[2] J	[24] J	[1100] D
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[26] J	[2] J	[15] J	[450]
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	[9] J	10 U	[5] J	[170]
Benzo(a)pyrene	(ug/l)	0	[10] U	[29] J	[2] J	[17] J	[560]
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	[26] J	10 U	[7] J	[220]
Dibenz(a,h)anthracene	(ug/l)		10 U	50 U	10 U	50 U	58
Benzo(g,h,i)perylene	(ug/l)		10 U	42 J	1 J	9 J	240
Total CAPAHs	(ug/l)		0.00	123.00	8.00	93.00	3658.00
Total PAHs	(ug/l)		43.00	1643.00	299.00	439.00	32594.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-05 SHGP-05 (0-4) 03/15/2000 0.00	SHGP-05 SHGP-05 (30-32) 03/15/2000 30.00	SHGP-05 SHGP-05 (48-50) 03/22/2000 48.00	SHGP-05 SHGP-05 (60-62) 03/22/2000 60.00	SHGP-06 SHGP-06(.5-4.5) 03/15/2000 0.50
Naphthalene	(ug/l)	10	[1500]	[790000]	[1800]	[320] D	[4100]
2-Methylnaphthalene	(ug/l)		600	270000	460	77	400
Acenaphthylene	(ug/l)		280	220000	330	57	400 U
Acenaphthene	(ug/l)	20	[810]	80000 U	[100] J	13	[190] J
Dibenzofuran	(ug/l)		61 J	11000 J	200 U	2 J	400 U
Fluorene	(ug/l)	50	[550]	[100000]	[150] J	24	[67] J
Phenanthrene	(ug/l)	50	[1600]	[380000]	[480]	[64]	[210] J
Anthracene	(ug/l)	50	[590]	[110000]	[120] J	15	[56] J
Fluoranthene	(ug/l)	50	[1000]	[140000]	[170] J	15	[68] J
Pyrene	(ug/l)	50	[1500]	[200000]	[230]	19	[100] J
Benz(a)anthracene	(ug/l)	0.002	[570]	[72000] J	[78] J	[5] J	400 U
Chrysene	(ug/l)	0.002	[580]	[63000] J	[69] J	[4] J	400 U
Benzo(b)fluoranthene	(ug/l)	0.002	[430]	[44000] J	[46] J	[3] J	400 U
Benzo(k)fluoranthene	(ug/l)	0.002	[170]	[14000] J	200 U	[1] J	400 U
Benzo(a)pyrene	(ug/l)	0	[500]	[56000] J	[63] J	[4] J	[400] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[230]	[23000] J	[29] J	[2] J	400 U
Dibenz(a,h)anthracene	(ug/l)		65 J	80000 U	200 U	10 U	400 U
Benzo(g,h,i)perylene	(ug/l)		290	25000 J	33 J	2 J	400 U
Total CAPAHs	(ug/l)		2545.00	272000.00	285.00	19.00	0.00
Total PAHs	(ug/l)		11326.00	2518000.00	4158.00	627.00	5191.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-06 SHGP-06(31-33) 03/15/2000 31.00	SHGP-07 SHGP-07 (0-4) 03/15/2000 0.00	SHGP-07 SHGP-07 (30-32) 03/15/2000 30.00	SHGP-08 SHGP-08 (0-4) 03/14/2000 0.00	SHGP-08 SHGP-08 (30-32) 03/14/2000 30.00
Naphthalene	(ug/l)	10	[12]	8 J	4 J	[890]	[24]
2-Methylnaphthalene	(ug/l)		3 J	50 U	10 U	200	10
Acenaphthylene	(ug/l)		10 U	11 J	10 U	20 J	2 J
Acenaphthene	(ug/l)	20	4 J	50 U	1 J	[170]	18
Dibenzofuran	(ug/l)		10 U	50 U	10 U	80 U	10 U
Fluorene	(ug/l)	50	3 J	50 U	10 U	[87]	10 U
Phenanthrene	(ug/l)	50	13	6 J	3 J	[180]	29
Anthracene	(ug/l)	50	3 J	50 U	10 U	[55] J	6 J
Fluoranthene	(ug/l)	50	3 J	12 J	10 U	[79] J	4 J
Pyrene	(ug/l)	50	5 J	23 J	1 J	[110]	5 J
Benz(a)anthracene	(ug/l)	0.002	10 U	[11] J	10 U	[35] J	10 U
Chrysene	(ug/l)	0.002	10 U	[12] J	10 U	[39] J	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[17] J	10 U	[22] J	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	[6] J	10 U	80 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[16] J	[10] U	[21] J	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	[13] J	10 U	80 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	50 U	10 U	80 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	21 J	10 U	12 J	10 U
Total CAPAHs	(ug/l)		0.00	75.00	0.00	117.00	0.00
Total PAHs	(ug/l)		46.00	156.00	9.00	1920.00	98.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-09 SHGP-09 (0-4) 03/14/2000 0.00	SHGP-09 SHGP-09 (30-32) 03/14/2000 30.00	SHGP-10 SHGP-10 (0-4) 03/14/2000 0.00	SHGP-10 SHGP-10 (30-32) 03/14/2000 32.00	SHGP-10 SHGP-10(48-52) 04/20/2000 48.00
Naphthalene	(ug/l)	10	[2800] D	[20]	[3900]	[3000]	[19]
2-Methylnaphthalene	(ug/l)		580	8 J	810	580	6 J
Acenaphthylene	(ug/l)		27 J	10 U	65 J	78 J	10 U
Acenaphthene	(ug/l)	20	[460]	10	[510]	[330]	5 J
Dibenzofuran	(ug/l)		15 J	10 U	400 U	250 U	10 U
Fluorene	(ug/l)	50	[170]	5 J	[230] J	[130] J	2 J
Phenanthrene	(ug/l)	50	[510]	19	[680]	[380]	8 J
Anthracene	(ug/l)	50	[170]	5 J	[200] J	[110] J	2 J
Fluoranthene	(ug/l)	50	[180]	4 J	[220] J	[110] J	3 J
Pyrene	(ug/l)	50	[240]	4 J	[320] J	[160] J	4 J
Benz(a)anthracene	(ug/l)	0.002	[96]	10 U	[99] J	[50] J	[1] J
Chrysene	(ug/l)	0.002	[86]	10 U	[98] J	[45] J	[1] J
Benzo(b)fluoranthene	(ug/l)	0.002	[46] J	10 U	[57] J	[29] J	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	[18] J	10 U	400 U	250 U	10 U
Benzo(a)pyrene	(ug/l)	0	[62]	[10] U	[72] J	[35] J	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[23] J	10 U	400 U	250 U	10 U
Dibenz(a,h)anthracene	(ug/l)		50 U	10 U	400 U	250 U	10 U
Benzo(g,h,i)perylene	(ug/l)		26 J	10 U	400 U	30 J	10 U
Total CAPAHs	(ug/l)		331.00	0.00	326.00	159.00	2.00
Total PAHs	(ug/l)		5509.00	75.00	7261.00	5067.00	51.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-10 SHGP-10(58-62) 04/20/2000 58.00	SHGP-11 SHGP-11 (0-4) 03/15/2000 0.00	SHGP-11 SHGP-11 (30-32) 03/15/2000 30.00	SHGP-12 SHGP-12 (0-4) 03/15/2000 0.00	SHGP-12 SHGP-12 (30-32) 03/15/2000 30.00
Naphthalene	(ug/l)	10	[60]	[1500] D	[270]	[2500] ?	[110] ?
2-Methylnaphthalene	(ug/l)		22	450	70	620	43
Acenaphthylene	(ug/l)		2 J	50	4 J	120	9 J
Acenaphthene	(ug/l)	20	[20]	[400]	[70]	[440]	[46]
Dibenzofuran	(ug/l)		1 J	8 J	20 U	19 J	2 J
Fluorene	(ug/l)	50	11	[170]	30	[210]	22
Phenanthrene	(ug/l)	50	40	[580]	[91]	[640]	[72]
Anthracene	(ug/l)	50	11	[200]	19 J	[220]	22
Fluoranthene	(ug/l)	50	14	[290]	26	[250]	28
Pyrene	(ug/l)	50	18	[400]	34	[340]	39
Benz(a)anthracene	(ug/l)	0.002	[6] J	[160]	[10] J	[130]	[14]
Chrysene	(ug/l)	0.002	[6] J	[130]	[9] J	[140]	[14]
Benzo(b)fluoranthene	(ug/l)	0.002	[3] J	[100]	[7] J	[140]	[13]
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	[30] J	[2] J	[37] J	[4] J
Benzo(a)pyrene	(ug/l)	0	[3] J	[130]	[8] J	[160]	[15]
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	[52]	[4] J	[130]	[9] J
Dibenz(a,h)anthracene	(ug/l)		10 U	13 J	20 U	25 J	2 J
Benzo(g,h,i)perylene	(ug/l)		10 U	63	4 J	160	11
Total CAPAHs	(ug/l)		18.00	615.00	40.00	762.00	71.00
Total PAHs	(ug/l)		217.00	4726.00	658.00	5381.00	475.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		SHGP-13	SHGP-13	SHGP-14	SHGP-14	SHGP-15
	SAMPLE ID	NYSDEC	SHGP-13 (0-4)	SHGP-13 (30-32)	SHGP-14 (3-7)	SHGP-14 (33-35)	SHGP-15 (3-7)
CONSTITUENT	DATE	SCG	03/15/2000	03/15/2000	03/10/2000	03/10/2000	03/09/2000
	DEPTH (ft)		0.00	30.00	3.00	33.00	3.00
Naphthalene	(ug/l)	10	[12]	[31]	[2700] D	[180] D	[430]
2-Methylnaphthalene	(ug/l)		10 U	8 J	800 D	100	18 J
Acenaphthylene	(ug/l)		2 J	6 J	40	7 J	40 U
Acenaphthene	(ug/l)	20	10 U	2 J	[580] D	[89]	[59]
Dibenzofuran	(ug/l)		10 U	10 U	16	4 J	40 U
Fluorene	(ug/l)	50	10 U	4 J	[140]	43	13 J
Phenanthrene	(ug/l)	50	1 J	12	[700] D	[82]	27 J
Anthracene	(ug/l)	50	10 U	3 J	[120]	24	5 J
Fluoranthene	(ug/l)	50	4 J	4 J	[140]	21	40 U
Pyrene	(ug/l)	50	6 J	5 J	[280] D	22	5 J
Benz(a)anthracene	(ug/l)	0.002	[3] J	[1] J	[89]	[7] J	40 U
Chrysene	(ug/l)	0.002	[3] J	[1] J	[75]	[7] J	40 U
Benzo(b)fluoranthene	(ug/l)	0.002	[4] J	[1] J	[52]	[5] J	40 U
Benzo(k)fluoranthene	(ug/l)	0.002	[1] J	10 U	[21]	[2] J	40 U
Benzo(a)pyrene	(ug/l)	0	[2] J	[10] U	[60]	[6] J	[40] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[3] J	10 U	[27]	[3] J	40 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	8 J	10 U	40 U
Benzo(g,h,i)perylene	(ug/l)		3 J	10 U	30	3 J	40 U
Total CAPAHs	(ug/l)		16.00	3.00	332.00	30.00	0.00
Total PAHs	(ug/l)		44.00	78.00	5878.00	605.00	557.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		SHGP-15	SHGP-15	SHGP-16	SHGP-16	SHGP-16
	SAMPLE ID	NYSDEC	SHGP-15 (26-28)	SHGP-15 (33-35)	SHGP-16 (3-7)	SHGP-16 (26-28)	SHGP-16 (33-35)
CONSTITUENT	DATE	SCG	03/09/2000	03/09/2000	03/09/2000	03/09/2000	03/09/2000
	DEPTH (ft)		26.00	33.00	3.00	26.00	33.00
Naphthalene	(ug/l)	10	[290]	4 J	[160]	[930]	[26]
2-Methylnaphthalene	(ug/l)		17 J	10 U	18	55 J	2 J
Acenaphthylene	(ug/l)		20 U	10 U	10 U	12 J	8 J
Acenaphthene	(ug/l)	20	[36]	10 U	[35]	[69] J	10
Dibenzofuran	(ug/l)		20 U	10 U	10 U	80 U	10 U
Fluorene	(ug/l)	50	6 J	10 U	9 J	12 J	10 U
Phenanthrene	(ug/l)	50	7 J	10 U	13	14 J	2 J
Anthracene	(ug/l)	50	20 U	10 U	2 J	80 U	10 U
Fluoranthene	(ug/l)	50	20 U	10 U	1 J	80 U	10 U
Pyrene	(ug/l)	50	20 U	10 U	1 J	80 U	10 U
Benz(a)anthracene	(ug/l)	0.002	20 U	10 U	10 U	80 U	10 U
Chrysene	(ug/l)	0.002	20 U	10 U	10 U	80 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	20 U	10 U	10 U	80 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	20 U	10 U	10 U	80 U	10 U
Benzo(a)pyrene	(ug/l)	0	[20] U	[10] U	[10] U	[80] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	20 U	10 U	10 U	80 U	10 U
Dibenz(a,h)anthracene	(ug/l)		20 U	10 U	10 U	80 U	10 U
Benzo(g,h,i)perylene	(ug/l)		20 U	10 U	10 U	80 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		356.00	4.00	239.00	1092.00	48.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		SHGP-17	SHGP-17	SHGP-18	SHGP-18	SHGP-19
	SAMPLE ID	NYSDEC	SHGP-17 (3-7)	SHGP-17 (33-35)	SHGP-18 (3-7)	SHGP-18 (30-32)	SHGP-19 (3-7)
CONSTITUENT	DATE	SCG	03/10/2000	03/10/2000	03/07/2000	03/07/2000	03/09/2000
	DEPTH (ft)		3.00	33.00	3.00	30.00	3.00
Naphthalene	(ug/l)	10	[260] D	9 J	[770]	[25]	[1600]
2-Methylnaphthalene	(ug/l)		47	1 J	180	3 J	660
Acenaphthylene	(ug/l)		10 U	10 U	11 J	1 J	100 U
Acenaphthene	(ug/l)	20	[44]	2 J	[230]	15	[550]
Dibenzofuran	(ug/l)		1 J	10 U	7 J	10 U	100 U
Fluorene	(ug/l)	50	13	10 U	[77]	7 J	[230]
Phenanthrene	(ug/l)	50	17	1 J	[160]	18	[790]
Anthracene	(ug/l)	50	3 J	10 U	44 J	4 J	[210]
Fluoranthene	(ug/l)	50	10 U	10 U	48 J	5 J	[240]
Pyrene	(ug/l)	50	10 U	10 U	[62]	7 J	[350]
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	[25] J	[2] J	[130]
Chrysene	(ug/l)	0.002	10 U	10 U	[23] J	[2] J	[110]
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	[12] J	10 U	[72] J
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	50 U	10 U	[18] J
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[16] J	[1] J	[91] J
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	[6] J	10 U	[31] J
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	50 U	10 U	100 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	7 J	10 U	44 J
Total CAPAHs	(ug/l)		0.00	0.00	82.00	5.00	452.00
Total PAHs	(ug/l)		385.00	13.00	1678.00	90.00	5126.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

	SITE		SHGP-19	SHGP-20	SHGP-20	SHGP-21	SHGP-21
	SAMPLE ID	NYSDEC	SHGP-19 (33-35)	SHGP-20 (2-6)	SHGP-20 (33-35)	SHGP-21 (2-6)	SHGP-21 (31-33)
CONSTITUENT	DATE	SCG	03/09/2000	03/07/2000	03/08/2000	03/10/2000	03/10/2000
	DEPTH (ft)		33.00	2.00	33.00	2.00	31.00
Naphthalene	(ug/l)	10	[1000]	[1900]	[40]	[450] D	[10]
2-Methylnaphthalene	(ug/l)		360	320	18	73	1 J
Acenaphthylene	(ug/l)		18 J	200 U	2 J	2 J	10 U
Acenaphthene	(ug/l)	20	[220]	[170] J	12	[58]	2 J
Dibenzofuran	(ug/l)		100 U	200 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	[76] J	[64] J	7 J	14	10 U
Phenanthrene	(ug/l)	50	[200]	[230]	26	10	2 J
Anthracene	(ug/l)	50	48 J	[58] J	6 J	2 J	10 U
Fluoranthene	(ug/l)	50	44 J	[75] J	9 J	10 U	10 U
Pyrene	(ug/l)	50	[68] J	[120] J	9 J	1 J	10 U
Benz(a)anthracene	(ug/l)	0.002	[24] J	[42] J	[3] J	10 U	10 U
Chrysene	(ug/l)	0.002	[20] J	[36] J	[3] J	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	[12] J	[22] J	[2] J	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	100 U	200 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[16] J	[32] J	[2] J	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	100 U	200 U	[1] J	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		100 U	200 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		100 U	200 U	2 J	10 U	10 U
Total CAPAHs	(ug/l)		72.00	132.00	11.00	0.00	0.00
Total PAHs	(ug/l)		2106.00	3069.00	142.00	610.00	15.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-22 SHGP-22 (1-5) 03/10/2000 1.00	SHGP-22 SHGP-22 (30-32) 03/10/2000 30.00	SHGP-23 SHGP-23 (2-6) 03/08/2000 2.00	SHGP-23 SHGP-23 (32-34) 03/08/2000 32.00	SHGP-24 SHGP-24 (33-35) 03/08/2000 33.00
Naphthalene	(ug/l)	10	[2800] D	[130]	[2300] D	8 J	10 U
2-Methylnaphthalene	(ug/l)		340 D	25	300 D	10 U	10 U
Acenaphthylene	(ug/l)		3 J	2 J	9 J	10 U	10 U
Acenaphthene	(ug/l)	20	[110]	[49]	[140]	2 J	10 U
Dibenzofuran	(ug/l)		4 J	2 J	8 J	10 U	10 U
Fluorene	(ug/l)	50	33	26	[64]	2 J	10 U
Phenanthrene	(ug/l)	50	37	[62]	[130]	8 J	10 U
Anthracene	(ug/l)	50	7 J	18	44	1 J	10 U
Fluoranthene	(ug/l)	50	3 J	18	[51]	3 J	10 U
Pyrene	(ug/l)	50	3 J	17	[56]	2 J	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	[5] J	[(25)]	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	[5] J	[(23)]	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[3] J	[(14)]	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	[2] J	[6] J	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[4] J	[(18)]	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	[2] J	[9] J	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	2 J	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	2 J	8 J	10 U	10 U
Total CAPAHs	(ug/l)		0.00	21.00	97.00	0.00	0.00
Total PAHs	(ug/l)		3340.00	372.00	3207.00	26.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-24 SHGP-24 (1-5) 03/09/2000 1.00	SHGP-25 SHGP-25 (2-6) 03/16/2000 2.00	SHGP-25 SHGP-25 (32-34) 03/16/2000 32.00	SHGP-26 SHGP-26 (0-4) 03/20/2000 0.00	SHGP-26 SHGP-26 (30-32) 03/20/2000 30.00
Naphthalene	(ug/l)	10	10 U	[4500]	[12]	10 U	[16]
2-Methylnaphthalene	(ug/l)		10 U	930	6 J	10 U	7 J
Acenaphthylene	(ug/l)		10 U	62 J	10 U	2 J	10 U
Acenaphthene	(ug/l)	20	10 U	[750]	7 J	3 J	12
Dibenzofuran	(ug/l)		10 U	400 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	[310] J	3 J	2 J	6 J
Phenanthrene	(ug/l)	50	10 U	[1000]	11	6 J	22
Anthracene	(ug/l)	50	10 U	[250] J	2 J	2 J	5 J
Fluoranthene	(ug/l)	50	10 U	[380] J	3 J	3 J	6 J
Pyrene	(ug/l)	50	10 U	[470]	3 J	4 J	7 J
Benz(a)anthracene	(ug/l)	0.002	10 U	[180] J	10 U	[2] J	[2] J
Chrysene	(ug/l)	0.002	10 U	[160] J	10 U	[2] J	[1] J
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[98] J	10 U	[3] J	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	[45] J	10 U	[1] J	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[120] J	[10] U	[2] J	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	[46] J	10 U	[2] J	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	400 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	56 J	10 U	3 J	10 U
Total CAPAHs	(ug/l)		0.00	649.00	0.00	12.00	3.00
Total PAHs	(ug/l)		0.00	9357.00	47.00	37.00	84.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-27 SHGP-27 (0-4) 03/24/2000 0.00	SHGP-27 SHGP-27 (30-32) 03/24/2000 30.00	SHGP-28 SHGP-28 (4-8) 05/22/2000 4.00	SHGP-28 SHGP-28 (34-38) 05/22/2000 34.00	SHGP-29 SHGP-29 (30-34) 04/10/2000 30.00
Naphthalene	(ug/l)	10	[140]	2 J	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		6 J	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	[30]	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	7 J	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	4 J	1 J	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)		187.00	3.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-29 SHGP-29 (7-11) 04/10/2000 7.00	SHGP-30 SHGP-30(46-50) 04/23/2001 46.00	SHGP-30 SHGP-30(30-34) 04/23/2001 30.00	SHGP-30 SHGP-30(6-10) 04/23/2001 6.00	SHGP-31 SHGP-31(30-34) 04/05/2002 30.00
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	2 J	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	2.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-31 SHGP-31(4-8) 04/05/2002 4.00	SHGP-32 SHGP-32(6.5-10) 04/17/2002 6.50	SHGP-32 SHGP-32(30-34) 04/17/2002 30.00	SHGP-33 SHGP-33(30-34) 04/12/2002 30.00	SHGP-33 SHGP-33(4-8) 04/12/2002 4.00
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U	2 J
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	3 J
Acenaphthene	(ug/l)	20	7 J	10 U	5 J	10 U	[33]
Dibenzofuran	(ug/l)		3 J	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U	8 J
Phenanthrene	(ug/l)	50	10 U	2 J	10 U	10 U	13
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U	5 J
Fluoranthene	(ug/l)	50	10 U	3 J	10 U	10 U	8 J
Pyrene	(ug/l)	50	10 U	3 J	10 U	10 U	14
Benz(a)anthracene	(ug/l)	0.002	10 U	[1] J	10 U	10 U	[3] J
Chrysene	(ug/l)	0.002	10 U	[1] J	10 U	10 U	[3] J
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[1] J	10 U	10 U	[3] J
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	[1] J	[10] U	[10] U	[3] J
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	10 U	[2] J
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	2 J
Total CAPAHs	(ug/l)		0.00	4.00	0.00	0.00	14.00
Total PAHs	(ug/l)		10.00	12.00	5.00	0.00	102.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-34 SHGP-34(30-34) 04/03/2002 30.00	SHGP-34 SHGP-34(4-8) 04/03/2002 4.00	SHGP-34 SHGP-34(71-75) 04/24/2002 71.00	SHGP-34 SHGP-34(56-60) 04/24/2002 56.00	SHGP-34 SHGP-34(41-45) 04/24/2002 41.00
Naphthalene	(ug/l)	10	[370] D	[40]	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		20	1 J	10 U	10 U	10 U
Acenaphthylene	(ug/l)		45	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	[58]	[30]	10 U	10 U	10 U
Dibenzofuran	(ug/l)		3 J	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	19	8 J	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	29	3 J	10 U	10 U	10 U
Anthracene	(ug/l)	50	1 J	2 J	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	2 J	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	2 J	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)		549.00	84.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-35 SHGP-35(30-34) 04/03/2002 30.00	SHGP-35 SHGP-35(6-10) 04/03/2002 6.00	SHGP-36 SHGP-36I 04/10/2002 30.00	SHGP-36 SHGP-36(4-8) 04/10/2002 4.00	SHGP-37 SHGP-37(30-34) 03/29/2002 30.00
Naphthalene	(ug/l)	10	[390] D	[390] D	10 U	10 U	[32]
2-Methylnaphthalene	(ug/l)		10	28	10 U	10 U	12
Acenaphthylene	(ug/l)		3 J	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	[76]	14	10 U	10 U	11
Dibenzofuran	(ug/l)		8 J	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	20	2 J	10 U	10 U	5 J
Phenanthrene	(ug/l)	50	20	10 U	10 U	10 U	19
Anthracene	(ug/l)	50	5 J	10 U	10 U	10 U	5 J
Fluoranthene	(ug/l)	50	10 U	10 U	10 U	10 U	6 J
Pyrene	(ug/l)	50	10 U	10 U	10 U	10 U	7 J
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U	[2] J
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U	[2] J
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	[1] J
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	5.00
Total PAHs	(ug/l)		532.00	434.00	0.00	0.00	102.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-37 SHGP-37(2-6) 03/29/2002 2.00	SHGP-38 SHGP-38(30-34) 04/09/2002 30.00	SHGP-38 SHGP-38(2-6) 04/09/2002 2.00	SHGP-39 SHGP-39(30-34) 04/10/2002 30.00	SHGP-39 SHGP-39(4-8) 04/10/2002 4.00
Naphthalene	(ug/l)	10	[5200] D	10 U	4 J	10 U	[38]
2-Methylnaphthalene	(ug/l)		670 D	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		9 J	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	[360] DJ	10 U	10 U	10 U	4 J
Dibenzofuran	(ug/l)		11	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	[80]	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	[150]	10 U	10 U	10 U	10 U
Anthracene	(ug/l)	50	[54]	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	[51]	10 U	2 J	10 U	10 U
Pyrene	(ug/l)	50	[57]	10 U	4 J	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	[23]	10 U	[1] J	10 U	10 U
Chrysene	(ug/l)	0.002	[29]	10 U	[1] J	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	[13]	10 U	[1] J	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	[6] J	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[15]	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[7] J	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		2 J	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		8 J	10 U	1 J	10 U	10 U
Total CAPAHs	(ug/l)		103.00	0.00	3.00	0.00	0.00
Total PAHs	(ug/l)		6745.00	0.00	14.00	0.00	42.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-40 SHGP-40(30-34) 04/12/2002 30.00	SHGP-40 SHGP-40(5-9) 04/12/2002 5.00	SHGP-41 SHGP-41(30-34) 04/09/2002 30.00	SHGP-41 SHGP-41(6-10) 04/09/2002 6.00	SHGP-42 SHGP-42(30-34) 04/01/2002 30.00
Naphthalene	(ug/l)	10	10 U	[790] D	2 J	[2500] D	10 U
2-Methylnaphthalene	(ug/l)		10 U	5 J	10 U	180 DJ	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	3 J	10 U
Acenaphthene	(ug/l)	20	10 U	6 J	1 J	[100]	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	1 J	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	26	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	4 J	36	10 U
Anthracene	(ug/l)	50	10 U	10 U	4 J	6 J	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	1 J	4 J	10 U
Pyrene	(ug/l)	50	10 U	10 U	1 J	4 J	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	801.00	13.00	2860.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-42 SHGP-42(2-6) 04/01/2002 2.00	SHGP-43 SHGP-43(30-34) 03/28/2002 30.00	SHGP-43 SHGP-43(2-6) 03/28/2002 2.00	SHGP-44 SHGP-44(30-34) 04/11/2002 30.00	SHGP-44 SHGP-44(4-8) 04/11/2002 4.00
Naphthalene	(ug/l)	10	1 J	10 U	10 U	10 U	[70]
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	10 U	6 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	19
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U	3 J
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U	3 J
Phenanthrene	(ug/l)	50	10 U	10 U	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	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)		1.00	0.00	0.00	0.00	103.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-45 SHGP-45I(30-34) 04/16/2002 30.00	SHGP-45 SHGP-45S(2-6) 04/16/2002 2.00	SHGP-46 SHGP-46(30-34) 04/02/2002 30.00	SHGP-46 SHGP-46(2-6) 04/17/2002 2.00	SHGP-47 SHGP-47(30-34) 04/25/2002 30.00
Naphthalene	(ug/l)	10	10 U	8 J	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	23	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	1 J	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	5 J	10 U	2 J	5 J
Anthracene	(ug/l)	50	10 U	9 J	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	14	10 U	3 J	2 J
Pyrene	(ug/l)	50	10 U	28	10 U	3 J	2 J
Benz(a)anthracene	(ug/l)	0.002	10 U	[13]	10 U	[2] J	10 U
Chrysene	(ug/l)	0.002	10 U	[18]	10 U	[2] J	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[22]	10 U	[2] J	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	[16]	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[22]	[10] U	[2] J	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	[20]	10 U	10 U	10 U
Dibenz(a,h)anthracene	(ug/l)		10 U	5 J	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	24	10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	116.00	0.00	8.00	0.00
Total PAHs	(ug/l)		0.00	228.00	0.00	16.00	9.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-47 SHGP-47(4-8) 04/25/2002 4.00	SHGP-48 SHGP-48(30-34) 04/24/2002 30.00	SHGP-48 SHGP-48(7.5-11. 04/24/2002 7.50	SHGP-49 SHGP-49(30-34) 04/26/2002 30.00	SHGP-49 SHGP-49(2-6) 04/26/2002 2.00
Naphthalene	(ug/l)	10	[22]	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)		24	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	[25]	10 U	10 U	10 U	10 U
Dibenzofuran	(ug/l)		2 J	10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	13	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	38	10 U	10 U	10 U	10 U
Anthracene	(ug/l)	50	7 J	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	11	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	14	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	[3] J	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	[4] 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	[2] J	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[3] 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)		14.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		170.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-50 SHGP-50I(30-34) 04/30/2002 30.00	SHGP-50 SHGP-50S(4-8) 04/30/2002 4.00	SHGP-51 SHGP-51(30-34) 04/25/2002 30.00	SHGP-51 SHGP-51(4-8) 04/25/2002 4.00	SHGP-52 SHGP-52(71-75) 04/26/2002 71.00
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

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-52 SHGP-52(56-60) 04/26/2002 56.00	SHGP-52 SHGP-52(41-45) 04/26/2002 41.00	SHGP-53 SHGP-53(30-34) 05/03/2002 30.00	SHGP-53 SHGP-53(6-10) 05/03/2002 6.00	SHGP-53 SHGP-53(46-50) 05/23/2002 46.00
Naphthalene	(ug/l)	10	10 U	10 U	[310]	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	4 J	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	30 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	13 J	4 J	10 U
Dibenzofuran	(ug/l)		10 U	10 U	30 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	30 U	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	30 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	30 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	30 U	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	30 U	10 U	10 U
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)		0.00	0.00	327.00	4.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-54 SHGP-54(30-34) 05/09/2002 30.00	SHGP-54 SHGP-54(4-8) 05/09/2002 4.00	SHGP-55 SHGP-55(30-34) 05/03/2002 30.00	SHGP-55 SHGP-55(6-10) 05/03/2002 6.00	SHGP-56 SHGP-56(30-34) 05/01/2002 30.00
Naphthalene	(ug/l)	10	10 U	10 U	10 U	[80]	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	5 J	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	2 J
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	1 J
Pyrene	(ug/l)	50	10 U	10 U	10 U	10 U	1 J
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	85.00	4.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-56 SHGP-56(2.5-6.5 05/01/2002 2.50	SHGP-57 SHGP-57(30-34) 05/09/2002 30.00	SHGP-57 SHGP-57(5-9) 05/09/2002 5.00	SHGP-58 SHGP-58 (46-50) 05/31/2002 46.00	SHGP-58 SHGP-58 (30-34) 05/31/2002 30.00
Naphthalene	(ug/l)	10	3 J	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		1 J	10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		4 J	10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	2 J	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	3 J	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	6 J	10 U	10 U	10 U	10 U
Anthracene	(ug/l)	50	2 J	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	4 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	[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	[2] J	[10] U	[10] U	[10] U	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[2] J	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)		3 J	10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		9.00	0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		40.00	0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

TABLE D-6
SAG HARBOR FORMER MGP SITE FINAL REMEDIAL INVESTIGATION

HISTORICAL AND RI GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 05/31/2002 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHGP-58 SHGP-58 (8-12) 05/31/2002 8.00	SHGP-59 SHGP-59(7-11) 05/30/2002 11.00	SHGP-59 SHGP-59(30-34) 05/30/2002 34.00	SHGP-59 SHGP-59(46-50) 05/30/2002 50.00
Naphthalene	(ug/l)	10	10 U	10 U	10 U	10 U
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	10 U
Acenaphthylene	(ug/l)		10 U	10 U	10 U	10 U
Acenaphthene	(ug/l)	20	10 U	10 U	10 U	10 U
Dibenzofuran	(ug/l)		10 U	10 U	10 U	10 U
Fluorene	(ug/l)	50	10 U	10 U	10 U	10 U
Phenanthrene	(ug/l)	50	10 U	10 U	10 U	10 U
Anthracene	(ug/l)	50	10 U	10 U	10 U	10 U
Fluoranthene	(ug/l)	50	10 U	10 U	10 U	10 U
Pyrene	(ug/l)	50	10 U	10 U	10 U	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	10 U
Benzo(a)pyrene	(ug/l)	0	[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
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	(ug/l)		10 U	10 U	10 U	10 U
Total CAPAHs	(ug/l)		0.00	0.00	0.00	0.00
Total PAHs	(ug/l)		0.00	0.00	0.00	0.00

ug/l: micrograms/liter
Data qualifiers defined in Glossary

---:Not Analyzed

APPENDIX E

FINAL QUALITATIVE HUMAN EXPOSURE ASSESSMENT
AND
FISH AND WILDLIFE RESOURCES IMPACT ANALYSIS

MAY 2002, REVISED DECEMBER 2003

Final Qualitative Human Exposure Assessment and Fish and Wildlife Resources Impact Analysis

Sag Harbor Former Manufactured Gas Plant Site

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May 2002, Revised December 2002; Revised December 2003

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1.0 Introduction

This qualitative human exposure assessment (QHEA) and fish and wildlife resources impact analysis (FWRIA) is part of a Remedial Investigation conducted under an Order on Consent (Index No. D1-0002-98-11) between KeySpan Corporation (KeySpan) and the New York State Department of Environmental Conservation (NYSDEC) concerning the former manufactured gas plant (MGP; site number 1-52-159), located in the Village of Sag Harbor, Suffolk County, New York, on the east end of Long Island. An evaluation of human exposures and risks of impact to the environment is part of the scope-of-work presented in the final Remedial Investigation/Feasibility Study Work Plan, Sag Harbor Former MGP Site, dated February 2000 (D&B 2000). This assessment incorporates data collected during the initial and supplemental field investigation programs conducted at the site. It is an update of the assessment submitted to NYSDEC in May 2002.

The QHEA identifies potential human exposures associated with chemical constituents detected in soil, groundwater, ambient air, and indoor air at or near the Sag Harbor former MGP site (site). A screening-level ecological assessment, in the form of a FWRIA, also is included.

These assessments consider exposure of humans and biota to chemicals at the site. The specific objectives of the assessments are:

- To identify chemicals of potential concern (COPCs) that are related to the former gas manufacturing activities conducted at the site;
- To identify potential pathways of exposure to people, plants, animals, and fish;
- To estimate and characterize the potential ecological risks associated with these exposures; and
- To indicate the need for mitigative measures to reduce potential exposures.

1.1 Site Background and Setting

1.1.1 Site Location and Description

The Remedial Investigation Report (June 2002) provides a detailed description of the site. The site (excluding off-site areas) covers an approximate 0.8-acre area (Fluor Daniel GTI, 1997) in the Village of Sag Harbor, Suffolk County, New York. The site is located to the east of Bridge Street at its intersection with West Water Street and Long Island Avenue. It is located to the south of the confluence of Sag Harbor Bay and Sag

Harbor Cove (see Attachment 1, the Conceptual Site Model). The site is bordered by commercial development consisting of small stores and a residence and residential condominiums to the north, a commercial building to the south, Bridge Street and residential condominiums to the west and a post office, bank, laundromat, and parking lot to the east.

An active 100,000-cubic foot spherical gas storage tank (referred to as a Hortonsphere) is currently located in the southwest corner of the site. Gas lines from a regulator located in the northeastern area of the site traverse the northern and central area of the site and convey natural gas to the Hortonsphere. A compressor station building is located to the east of the regulator. Three high-pressure gas tanks that are set on concrete cradles are located to the southwest of the regulator station. The surface of the site is covered with gravel and is fully enclosed and secured by an 8-foot chain-link fence. The perimeter fencing is currently in good condition and gates are maintained closed and locked.

For the purposes of the qualitative human exposure assessment, the site and surrounding property are considered separately with respect to potential exposure to human populations. Current and potential future exposures occurring within the confines of the approximately 0.8-acre site will be referred to hereafter as "on-site" exposures. Current and potential future exposures expected to occur outside the confines of the 0.8-acre site will be referred to as "off-site" exposures.

Detailed descriptions of the site setting are found in the following sections of the Remedial Investigation Report:

- Site History – Section 1.4;
- Land Use and Demographics – Section 1.5.1;
- Climate – Section 1.5.2;
- Topography – Section 1.5.3; and
- Site Hydrogeological Characteristics – Section 3.0.

2.0 Qualitative Exposure Assessment

2.1 Nature and Extent of Chemical Constituents

BTEX (benzene, toluene, ethylbenzene, and xylenes) were the principal volatile organic compounds (VOCs) detected in samples at the site and are the common VOCs associated with coal tar. Semivolatile organic compounds (SVOCs) also were detected at the site. Polycyclic aromatic hydrocarbons (PAHs) are the common subset of SVOCs found in coal tar. Section 4.0 of the Remedial Investigation Report provides a detailed description of the nature and extent of chemical constituents found on-site and at relevant off-site locations.

2.2 Selection of Chemicals of Potential Concern

Several classes of chemicals were detected in the environmental media at the Sag Harbor former MGP site. COPCs for the site were selected following the practice established by EPA in the Risk Assessment Guidance for Superfund Volume I, Part A (EPA 1989). The selection criteria were as follows:

- Frequency of detection for chemicals in soil and groundwater was considered. Chemicals with a frequency of detection of less than 5% in a data set of 20 or more samples were excluded from this assessment. Also, consideration was given as to whether the detected chemical is related to historic and current uses of the site.

- Chemicals not detected at least once above the limit of detection were automatically excluded from this assessment, regardless of the size of the data set.

A summary list of COPCs by medium is provided in Table 2-1. Relevant and appropriate values (*i.e.*, Standards, Criteria, and Guidance Values (SCGs)) for these COPCs are provided in Appendices C and D of the Final Remedial Investigation Report.

This human exposure assessment provides qualitative descriptions of potential exposure to site-related COPCs for human populations who may reasonably be expected to contact site media under present or future conditions. This qualitative assessment is comprised of two components:

- Description of exposure setting and identification of potentially exposed populations; and

- Identification of exposure pathways.

These components are discussed in greater detail in the following paragraphs.

2.3 Exposure Setting and Identification of Potentially Exposed Populations

Under current and future site use conditions, the potentially exposed populations (*i.e.*, potential receptors) are those that might come into contact with the COPCs. Table 2-2 presents an exposure pathway matrix that depicts the various exposure routes for current and future on-site and off-site human populations.

2.3.1 Current Scenarios

Current human populations considered in this qualitative exposure assessment include on-site trespassers and adult on-site KeySpan workers. The perimeter fencing is currently in good condition and gates are maintained closed and locked. Consequently, trespassing is unlikely given current security measures, but the potential for trespasser exposure was considered because the property could be accessed, with difficulty, over the fence. On-site exposure for trespassers is limited to chemicals in surface soil. Current on-site KeySpan workers are those individuals currently engaged in activities required for the function and maintenance of those portions of the site devoted to KeySpan operations (*i.e.*, compressor station maintenance). Exposure to surface soil, subsurface soil, groundwater, and indoor air at the site is possible for these individuals.

Current off-site human populations considered in the exposure assessment include adult commercial workers; adult and child visitors to these commercial establishments; adult and child residents of the Harbor Close Condominium complex located to the southwest of the site; adult and child residents of homes and condominiums located to the north of the site; and individuals recreating at Sag Harbor Cove. With the exception of the recreation scenario, indoor air exposure to chemicals volatilizing from groundwater and subsurface soil underneath structures may potentially occur for these populations. Potential exposure to chemicals in surface soil may be possible for off-site residents. Additionally, potential inhalation exposure to wind-borne particulates from excavations is possible for off-site human populations; however, it is anticipated that this potential exposure would be short-term and if warranted, mitigative measures, *e.g.*, wetting down soils associated with the excavation or covering the soils would be employed to further reduce potential exposure. Inhalation of site-related wind-borne particulates also is possible for these off-site populations; however, the potential for this exposure is considered limited given that the site is currently covered with bluestone, thereby reducing the potential for exposure. Additionally, given the high water table at Sag Harbor (*i.e.*, generally less than two feet below ground surface), direct contact with groundwater as well as subsurface soil by off-site residents is possible if they were to access the subsurface in their yards.

Recreational exposure (*i.e.,* dermal contact and ingestion while wading or swimming) to surface water and sediment in Sag Harbor Cove is possible. Consumption of fish from the Cove also is possible. The potential for exposure to site-related chemicals is considered minimal because of the type (benzene, toluene, and ethylbenzene were not detected in the pore water, surface water, or sediment samples collected from Sag Harbor Cove), the low concentrations of xylene, and the frequency with which the Cove is used for recreational purposes (*i.e.,* does not occur daily, nor year-round).

A private well and basement survey was performed in the vicinity of the site. The survey area was identified by agreement between NYSDEC and KeySpan on April 3, 2002. The private well survey was designed and conducted to identify residents living within the vicinity of the site who may be using groundwater for domestic purposes. The basement survey was conducted to identify those structures with basements, whether those basements have earthen floors, and whether moisture or odors have been observed in the basement. Details concerning the results of the survey are provided in Section 2.5 below.

2.3.2 Future Scenarios

Future uses of the site and immediate off-site areas are not expected to change substantially from the current commercial/residential uses. As a consequence, the current exposure scenarios also hold for future use of the site and surrounding areas.

Future human populations considered in this exposure assessment include on-site and off-site construction workers, nearby off-site utility workers, on-site commercial workers, on-site adult and child visitors to commercial establishments, and on-site adult and child residents. The construction worker is considered since virtually any site redevelopment would involve construction activity in some form. Potential on-site exposure media for the construction worker include surface and subsurface soil, soil particulate, groundwater, and volatilization of chemicals from soil and groundwater into ambient air during construction trenching activities.

Off-site construction worker exposure to areas surrounding the site is considered in the event of future off-site redevelopment. Chemical exposure for nearby off-site utility workers could be expected because of the presence of subsurface utility lines in areas adjacent to the site. Like the on-site construction worker, potential exposure media for off-site construction workers and nearby off-site utility workers includes surface and subsurface soil, soil particulate, groundwater, and ambient air.

The possibility exists that the site may be used in the future for commercial purposes. Thus, exposures for adult on-site commercial workers and adult and child visitors to future on-site commercial establishments are possible. These individuals may be exposed to chemicals in indoor air that have volatilized from the groundwater and subsurface soil underneath a future commercial structure. It is expected that future land use may be deed restricted to prevent residential development; however, because deed restrictions are not yet in place, a future on-site residential scenario is included in this assessment. Potential on-site exposure media for these future on-site residents include surface and subsurface soil, groundwater, and ambient and indoor air.

2.4 Identification of Exposure Pathways

Table 2-2 provides qualitative descriptions of the potentially complete exposure pathways for potential current and future on-site and off-site human populations. Under current site use conditions, the on-site trespasser may receive exposure to surface soil via the ingestion (oral), dermal, and inhalation routes.

On-site KeySpan workers are those individuals currently engaged in activities required for the function and maintenance of those portions of the site devoted to KeySpan operations (*i.e.*, compressor station maintenance). These individuals may spend time both outdoors and indoors and, consequently, may potentially be exposed to chemicals in surface soil and subsurface soil via ingestion, dermal contact and inhalation during outdoor activities and to COPCs in indoor air (via inhalation during indoor activities). Dermal contact with groundwater also is possible.

Under future site use conditions, on-site construction workers may potentially receive exposure to surface and subsurface soil through ingestion and dermal contact, to groundwater via dermal contact, and to ambient air via inhalation. Exposure to ambient air considers both the inhalation of volatiles resulting from construction activities (*i.e.*, trenching, excavation, installing deep piles, etc) and soil particulate inhalation.

Given that commercial redevelopment is one of the potential re-uses of the site, on-site commercial workers and adult and child site visitors also are considered. Absent remedial action, relevant potential exposures for commercial workers and visitors include inhalation of chemicals in indoor air. Although future residential use of the site is not presently anticipated, in the absence of deed restrictions, a future residential scenario is considered here. Relevant potential exposure pathways for future on-site adult and child residents include surface and subsurface soil (via ingestion and dermal contact); groundwater (via ingestion, dermal contact, and inhalation of volatiles while showering if an on-site well was installed for domestic use); ambient air (inhalation of wind-borne particulates); and inhalation of vapors in indoor and ambient air.

Current surrounding land use includes commercial development. Consequently, current off-site exposures include adult commercial workers and adult and child site visitors to commercial establishments. Relevant exposures for off-site commercial workers and visitors include inhalation of chemicals in indoor air. In addition, several condominium complexes and one private residence are located near the site. Relevant potential exposures for off-site adult and child residents include inhalation of chemicals in indoor air.

Indoor air sampling has been performed at eighteen properties, both commercial and residential, in the vicinity of the site. Results of the sampling indicate that:

- Naphthalene, the compound most generally associated with MGP impacts, was not detected in any of the samples;
- The majority of volatile organic compounds for which analysis was performed were not detected;
- The majority of those compounds that were detected were detected at concentrations within the range of background levels as reported by the New York State Department of Health (NYSDOH); and
- Those compounds detected above NYSDOH background levels are generally those not typically associated with MGP impacts.

NYSDOH background concentrations do not exist for some of the detected compounds. Detected concentrations of these compounds are orders of magnitude below occupational standards. Consequently, available indoor air data suggest that the inhalation of vapors derived from site-related chemicals is not an exposure pathway of concern.

Potential exposure to chemicals in groundwater used for domestic purposes (potential exposure routes include ingestion and dermal contact) is possible for off-site individuals including commercial workers, visitors to commercial establishments, and residents. Additionally, inhalation of volatiles while showering, if the source of bath water is a private groundwater well, is possible for off-site residents. Ingestion, dermal contact, and/or particulate inhalation associated with exposure to surface soil also is possible for the off-site resident. Potential dermal contact with chemicals in groundwater and subsurface soil also may be possible for off-site residents if they were to access the subsurface in their yards. Off-site human populations, including commercial workers, adult and child visitors to commercial establishments, and adult and child residents, may be exposed via inhalation to wind-borne particulate matter associated with excavation work.

Individuals recreating at Sag Harbor Cove may receive exposure to sediment and surface water through ingestion and dermal contact. Additionally, these individuals may consume fish or other biota caught from the cove.

Under future off-site conditions, off-site construction workers and nearby off-site utility workers, may receive exposure to surface and subsurface soil via the ingestion and dermal routes, to groundwater via the dermal route, and to ambient air via inhalation as a consequence of their work (*i.e.*, trenching, excavation, installing deep piles, etc.). Potential ambient air exposure includes inhalation of soil particulate, soil vapor, and groundwater vapor. However, as discussed below, available information indicates that only two wells are currently in use in the vicinity of the site. Analytical results from these two wells indicate that exposure to groundwater used for domestic purposes is an incomplete exposure pathway.

2.5 Well and Basement Survey

A private well and basement survey of properties in the vicinity of the site was conducted during the second, third, and fourth quarters of 2002. The survey area was identified by agreement between NYSDEC and KeySpan on April 3, 2002. The survey consisted of an initial mailing of 45 questionnaires. Of the 45 questionnaires, one (1) was an address duplicate. Of the 44 remaining questionnaires from the initial mailing, 19 (or 43%) were returned to KeySpan. For the 25 questionnaires for which responses were not received, follow-up communications were initiated. This follow-up consisted of a maximum of three phone calls per property. During this process, an additional 10 questionnaires were completed. This increased the total response rate to 66% and decreased the number of properties requiring additional follow-up to 15.

For the 15 properties for which responses had not been received, a Community Development Representative from KeySpan went door-to-door in an attempt to obtain responses. If no one was home, a letter and another copy of the questionnaire were left at the residence. As a result of this effort, ten (10) questionnaires were completed; consequently, 5 of the initial 44 questionnaires have yet to be completed. The number of completed questionnaires is 39 for a response rate of 89% (as of November 11, 2002). Results of the survey are summarized as follows:

Basement Survey

- Basements/crawl spaces are located at twenty-five (25) of the properties;
    - Twenty-two of these report water in the basement, with the majority of these (18, or approximately 82%) reporting water in the basement following a rain event;
        - Twelve report an odor in the basement when the basement is wet, ten of which may be categorized as a damp, musty “wet earth” odor;
        - One respondent indicated an odor of potential concern, *i.e.,* an odor that is characterized as “gasoline” when the basement is wet;
        - The respondent who reported an odor of potential concern indicated that the basement at this property is not used.

KeySpan has conducted indoor air sampling at the property at which the presence of an odor of potential concern was reported. Four volatile organic compounds were detected in the two indoor air samples collected at the property, none of which is associated with MGP impacts.

Well Survey

- Three (3) respondents reported the presence of a groundwater well on their property;
    - Sampling of two wells which are currently in use was performed.
        - Results of the sampling indicated the presence of barium and lead in samples from both wells. Chloroform, a trihalomethane that is commonly detected in treated water, was detected in a sample collected from one of the wells. All three chemicals were present at concentrations that achieve NYSDOH public water supply standards/action levels. The third well is not used according to information supplied by the respondent. KeySpan is currently attempting to make arrangements to sample this third well.

In summary, results of the well and basement survey indicate that at a very small number of properties, the potential for indoor air exposure exists. The owners of these properties were contacted and appropriate courses of action, as described above, were taken. This information indicates that potential exposures to site-related chemicals via inhalation of indoor air in the vicinity of the site are minimal. Additionally, domestic use of groundwater is an incomplete exposure pathway for 37 respondents who reported no use of a private well for any domestic purpose. For the two properties at which domestic use of a private well was reported, the only parameters detected in the water were barium, lead, and chloroform, all of which are unrelated to potential MGP impacts.

2.6 Conclusions

There are several distinct human populations both on-site and in the vicinity of the site that could potentially be exposed to site-related COPCs. These on-site populations include: trespassers and KeySpan workers under current site use conditions. Under future site use conditions, potential populations include construction workers; commercial workers, and adult and child visitors to future on-site commercial establishments; and adult and child residents. Relevant current off-site human populations include: commercial workers, adult and child visitors to commercial establishments; adult and child residents; and individuals recreating at Sag Harbor Cove. Construction workers and nearby off-site utility workers are considered a potential off-site population under future land use conditions. A summary of the potential exposure pathways, by receptor and medium, is presented in Table 2-2.

Table 2-3 provides context, in qualitative terms, of the potential for the exposures discussed above to actually occur. For example, the potential for on-site trespasser exposure to site-related chemicals in surface soil at the site is considered minimal because access to the site is restricted by a gated fence that is maintained closed and locked.

The Remedial Investigation and qualitative human exposure assessment have indicated that there are actual and potential pathways through which people on site and in the community could be exposed to potentially hazardous materials related to former MGP activities. The potentially complete exposure pathways will be evaluated further to determine the best course of action(s) to address them. These actions may consist of engineering or administrative controls or a combination thereof. KeySpan will develop and identify such actions in the next phase of this program, the development of a Remedial Action Plan.

3.0 Fish and Wildlife Resources Impact Analysis

Following the Appendix 1C Decision Key in the NYSDEC's Fish and Wildlife Resources Impact Analysis guidance document, a FWRIA was deemed required (see Table 3-1). Therefore, the following analysis identifies actual or potential risks to fish and wildlife residing on and in the vicinity of the Sag Harbor site from chemicals potentially migrating from the former MGP. The analysis focuses on risks associated with site-related chemicals detected in soil, surface water, sediment, and groundwater. This analysis contains:

- Site descriptions and a characterization of plant and animal resources and their value to humans.
- Evaluations of potential exposure pathways to fish and wildlife from site-related chemicals of potential ecological concern (COPECs);
- Comparisons of concentrations of COPECs to regulatory criteria or derived toxicological benchmarks for the protection of fish and wildlife; and
- Conclusions regarding the potential of exposure and possible risks to fish and wildlife on or about the site.

3.1 Fish and Wildlife Resources

3.1.1 Terrestrial Resources

The U.S. Fish and Wildlife Service and the NYSDEC Natural Heritage Program were contacted regarding species of concern, significant habitats, and fishery resources within 0.5 miles of the site. In addition, a field reconnaissance survey of the site and surrounding 0.5-mile radius was conducted on April 27, 2000. The objectives of the survey were to:

- Map and describe plant communities and aquatic resources on and adjacent to the site;
- Observe wildlife species;
- Identify significant ecological resources; and
- Observe evidence of stress to plants and animals, if any, from site-related chemicals.

Four distinct terrestrial plant cover types were identified within a 0.5-mile radius of the site. The boundaries between these cover types are depicted in Attachment 1-1D. Plant species identified during the reconnaissance within the site are presented in Table 3-2.

Field surveys were not conducted outside the 0.5-mile study. Ecological resources also were identified from agency contacts, the U.S. Geological Survey topographic maps, and state and federal wetland maps.

Each plant cover type is described below as to the plant species composition, vegetation structure, and land use. Whenever possible, these areas were classified according to the New York State Natural Heritage Program's *Ecological Communities of New York State* (Reschke, 1990).

3.1.1.1 Cover Type 1: Commercial Area

Several areas in the vicinity of the site are classified as commercial which is equivalent to Reschke's urban structure exterior classification. Most of these areas are covered with buildings surrounded by gravel; concrete; asphalt; a gravel and dirt mixture; or geotextile fabric and fill and gravel. These areas are essentially devoid of vegetation, with the exception of a few small patches of grass. There is little area for growth of vegetation or development of wildlife habitats.

3.1.1.2 Cover Type 2: Residential Area

Cover type 2 is the dominant cover type within the 0.5-mile radius. Reschke classifies this cover type as mowed lawn. It consists of single family and multi-unit dwellings surrounded by maintained lawns (*i.e.*, frequent mowing) and ornamental plantings. The lawns consist of grasses and weed species including English plantain (*Plantago lanceolata*) and dandelion (*Taraxacum officinale*). Ornamental shrubs and small trees are planted along the foundations of the homes. In addition, larger trees are planted in the yards. Ornamental trees and shrubs planted include arbor vitea (*Thuja occidentalis*), sugar maple (*Acer saccharum*), and crab apple (*Pyrus prunifolia*).

3.1.1.3 Cover Type 3: Successional Old Field

This cover type is characterized as a weedy field dominated by grasses and forbs that occur on sites that have been cleared for development and is classified as successional old field by Reschke. This cover type is located behind a condominium complex located northwest of the site. Dominant plant species include goldenrod (*Solidago spp.*), Queen Anne's lace (*Daucus carota*) and crab grass (*Digitaria sanguinalis*). In some areas, woody vegetation such as choke cherry (*Prunus virginiana*), early low blueberry (*Vaccinium vacillans*) and white poplar (*Populus alba*) have begun to invade these fields.

3.1.1.4 Cover Type 4: Emergent Wetland

This cover type is a small (less than 1-acre) potential emergent wetland located west of the site. Reschke classifies this cover type as shallow emergent marsh. A full wetland delineation was not conducted in this area. It appears to be a remnant of a much larger wetland system illustrated on the 1956 topographic map. Based on field observations, most of this wetland complex has been filled. This wetland is dominated by phragmites (*Phragmites communis*), Japanese knotweed (*Polygonum cuspidatum*), and red maple (*Acer rubrum*). Trash was observed strewn around the wetland.

3.1.2 Aquatic Resources

The site lies within the Peconic Estuary drainage basin. This drainage basin contains three water bodies in the vicinity of the site: Sag Harbor Bay, Noyack Bay and Shelter Island Sound. All three of these water bodies are classified as Class SA waterbodies indicating that the water is suitable for human consumption of fish, fish propagation, and fish survival (6NYCRR 924.6). Class SA waters are suitable for shellfishing for market purposes, primary and secondary contact recreation and fishing.

3.1.2.1 Peconic Estuary

The Peconic Estuary includes more than 110,000 acres of land and 121,000 acres of surface water. Most of the Peconics Estuary's surface waters are high quality. However, problems once considered exclusive to heavily populated coastal regions are now occurring in this estuary. Changes in land use and increasing pressure on natural resources have contributed to areas of degraded water quality and habitats; diminished the productivity of endangered, threatened, or economically important species; and stimulated brown tide blooms (SCDHS, 2000). A Draft Comprehensive Conservation and Management Plan (CCMP) has been developed by the Suffolk County Department of Health Services (SCDHS) to help preserve, protect, restore, and enhance natural resources and water quality.

The CCMP identified five priority problems:

- Brown tides - The algae bloom known as the Brown Tide has wiped out bay scallop populations and the economically important fishery associated with them. Brown Tide also has adverse effects on other species of shellfish like quahogs and soft shell clams.

- Nutrient pollution - Excess inputs of nitrogen have caused an imbalance in the estuary, which results in periodic algae blooms and related short drops in dissolved oxygen during the summer. This excess nitrogen also is suspected of contributing to a decline in eelgrass beds.

- Threats to habitats and living resources - As with most coastal areas around the country, the natural habitats of the Peconic Estuary and its watershed have been profoundly impacted by physical alterations like dredging, filling, and clearing for agriculture and development. In addition extensive chemical changes like input of excess nutrients; suspended sediments; toxic contaminants like pesticides and metals; and salinity disturbances have taken place. The aforementioned brown tide algae bloom has wiped out bay scallop populations and adversely affected other shellfish species and eelgrass beds.

- Pathogen contamination - Organisms causing diseases in humans can be carried into the estuary where humans may be exposed by eating raw or partially cooked shellfish. Exposure to pathogens also may occur through dermal contact with contaminated water or by swallowing it.

- Toxic chemicals - The main concern related to toxic contaminants is the prevention and minimization of inputs. A study of the sediments in open waters, bays, and creeks, revealed very few samples where federal or state guidance levels were exceeded for the chemicals sampled.

The CCMP establishes criteria for dealing with these problems.

Groundwater at the site is flowing northwest towards Sag Harbor Bay which is par t of the Peconic Estuary. Eight pore water and 12 surface water samples were collected from Sag Harbor. Only four chemicals were detected at low concentrations: xylene, acenaphthene, pyrene, and phenanthrene. Based on these results, potentially site-related impacts on the Peconic Estuary are unlikely. A complete description of potential impacts is provided in Section 3.3.2.

3.1.3 Freshwater and Tidal Wetlands

Wetlands have been identified on the U.S. Fish and Wildlife National Wetland Inventory (NWI) Maps (Sag Harbor and Greenport, NY quadrangles) and NYSDEC Tidal and Freshwater Wetland Maps (see the CSM, Attachment 1-1C). Sag Harbor Bay is classified as various types of estuarine wetlands and mudflats.

Wetlands are regulated in New York under the state's Freshwater Wetlands Act of 1975 and Tidal Wetlands Act of 1977. These statutes are in addition to federal regulations under Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act of 1977, and various Executive Orders.

3.1.4 Fish and Wildlife Resources

Wildlife uses in the area were evaluated using literature sources and field observations, wildlife sightings included direct observations and identifications based on vocalizations, tracks, browse, and scat, and general wildlife values (*e.g.*, food and cover availability).

Federally listed endangered, threatened or species of concern are not known to occur within 2 miles of the site (Clough, 2000). Several state-listed endangered, threatened or special concern species were identified as occurring within 2 miles of the site (Krahling, 2000; see Attachment 1-1C) and are summarized in Table 3-3. In addition, the NYSDEC has identified several significant habitats. These are also identified on Table 3-3.

The surrounding 0.5-mile radius consists of residential homes (including single family homes and multi-unit dwellings) and industrial/ commercial properties. These areas typically consist of mowed lawns interspersed with trees and shrubs, which often times are introduced exotics used for ornamental purposes. These areas do not support an abundance of wildlife because of constant human activity and the lack of vegetation, which could provide food and cover. The successional fields, with invading trees and shrubs, identified during the field reconnaissance, do provide habitat for wildlife. However, these small areas are limited in the size of the population they can support.

The resources of the Peconic Estuary support an abundance of recreational and commercial activities that contribute to the regional economy. The submerged eelgrass beds found in this system provide important estuarine nursery habitat for both finfish and shellfish (SCDHS, 2000).

Tables 3-4 through 3-7 list the fish, herptile (amphibian and reptile), bird, and mammal species that may potentially occur within and adjacent to the site based on the land uses identified during the field reconnaissance. The species observed during the field reconnaissance (which are representative for the point in time of the field reconnaissance) also are identified in the tables.

3.1.5 Observation of Stress

No signs of stress to vegetation and wildlife at or around the site were noted during the field reconnaissance.

3.1.6 Value of Habitat to Associated Fauna

The residential, including single family and multi-unit dwellings, commercial, and industrial properties are of little value to wildlife. The area is developed, and only isolated pockets of vegetation exist. In most cases these areas are maintained by frequent mowing. The wildlife expected to occur in the vicinity of the site includes more urbanized bird and mammalian species such as mockingbird (*Mimus polyglottos*), gray squirrel (*Sciurus carolinensis*), and Norway rat (*Rattus norvegicus*).

The successional fields, including a portion of the site, do provide minimal habitat and cover and food for wildlife. These areas typically have songbirds such as goldfinch

(*Carsuelis tristis*) and song sparrow (*Melospiza melodia*); and small mammalian species, such as white-footed mouse (*Peromyscus leucopis*) and meadow vole (*Microtus pennsylcanicus*), which consume the seeds of grasses and forbs. Due to the limited size of these fields, larger mammalian and bird of prey species are not likely to occur.

3.1.7 Value of Resources to Humans

The site and surrounding area are of little value to humans for recreational use of wildlife. Bird feeders may be in residential yards. The developed nature of the area precludes small game and deer hunting.

3.2 Exposure Pathways Analysis

3.2.1 Chemicals of Potential Ecological Concern

A number of substances were detected in surface soil and groundwater. To focus the FWRIA on those chemicals that may pose risks to the environment, COPECs were selected.

For this assessment, the chemicals detected in groundwater are not considered COPECs for biota except indirectly as a potential source of chemicals to surface water or sediment downgradient of the site. Plants may potentially be exposed to constituents contained in groundwater, since groundwater is within 4 feet of the surface. The areas of vegetation within the half-mile radius of the site were located to the north and northwest of the site. Groundwater migrating from the site is flowing in this direction. Several shallow groundwater samples (collected at depths to 6 feet below ground surface) were collected in the vicinity of the vegetated area (SHGP29 through SHGP-32 and SHMW-10S). These samples are within the root zone of plants. All these samples were nondetect for BTEX compounds. SHGP-31, SHGP-32, and SHMW-10 had low levels of PAHs ranging from 10 ppb to 21 ppb. Based on these results, the groundwater is not expected to impact plants. Therefore, groundwater was not evaluated further in this report.

Surface and subsurface soil samples were collected from the site and analyzed for VOCs, SVOCs, RCRA metals and total cyanide. Only shallow subsurface soil sample results (up to 4-feet bgs) were considered in this FWRIA. A total of 35 samples (18 surface soil and 17 subsurface soil) were analyzed in this depth interval. Data for deeper subsurface soils were not evaluated due to lack of exposure routes to wildlife. Most burrowing animals create dens in the upper 4 feet of soil. In addition, the deeper subsurface soil samples (*i.e.,* greater than 4 feet bgs) are below the root zone of most plants. Essential nutrients (calcium, iron, potassium, sodium and magnesium) are not considered COPECs. All other chemicals detected above detection limits are considered COPECs.

3.2.2 Exposure Pathways

Wildlife resources in the industrial/residential areas surrounding the site are limited due to the lack of food and cover. Also, constant human disturbance limits the population to wildlife species more tolerant of human activity. Several state-listed endangered species are located within 2-miles of the site. In addition, state and federally regulated tidal wetlands are located in the Peconic Estuary. Wetlands are considered significant natural resources. Several freshwater wetlands were identified in the 2-mile radius study area. These wetlands are currently too distant and/or up gradient of the site for any likely exposure to site-related chemicals. Also, most of the COPECs are PAHs and metals. The fate and transport mechanisms of these chemicals reduce the likelihood of future migration into these areas. Thus, exposure is likely to be limited to wildlife on, near, or immediately downgradient from the site.

Plant roots are not discriminating in the uptake of small organic molecules (molecular weight less than 500) except on the basis of polarity. The more water-soluble molecules pass through the root epidermis and translocate throughout the plant and are eventually volatilized from the leaves (Efroymson et al., 1997a). Plants selectively uptake metals in soil by absorption from soil solution by the root. Metals may be bound to exterior exchange sites on the root and not actually taken up. They may enter the root passively in organic or inorganic complexes or actively by way of metabolically controlled membrane transport (Kabata-Pendias and Pendias, 1992). Once in the plant, a metal can be stored in the root or translocated to other plant parts. Wildlife will have limited exposure to these chemicals. Potential exposure could occur through direct contact with or accidental ingestion of contaminated soil or through the terrestrial food chain.

3.3 Criteria-Specific Toxicity Assessment

3.3.1 Soil

The NYSDEC does not have soil cleanup criteria relating to the protection of wildlife and the availability of applicable soil screening values in scientific literature is limited. The screening of soil COPECs was conducted by comparing the chemical concentrations to available screening benchmark values derived by the Oak Ridge National Laboratory (ORNL) (Efroymson *et al.,* 1997a, 1997b and Sample *et al.*, 1996) for the U.S. Department of Energy. The benchmark values are the 10th-percentile of the distribution of various toxic effects threshold for the chemicals in soil for the group of organisms.

Transformation or loss due to environmental degradation is not considered in this assessment. It is assumed that following uptake, concentration in soil will equal concentrations in organisms. This assumption overestimates potential risk in that wildlife has limited contact with these chemicals in soil and plants.

Benchmark values for three groups of organisms, where available or derived, are presented in Table 3-8. Terrestrial plants were selected since they are critical in nutrient cycling and are a source of food in the diets of higher animals. Also, plants may take up some of the COPECs. Earthworms were selected because of their importance in maintaining soil fertility through burrowing and feeding activities. Also, earthworms are at the base of the food chain and are an important food item for higher organisms. Meadow voles were selected to represent an herbivorous small mammal. The benchmark values for meadow vole are presented as dietary concentrations in mg of chemical per kg of diet that would result in no observed adverse effect levels (NOAELs). For screening purposes, it was assumed that the chemical concentration in soil would be found in the food items of these species. As stated previously, this is a conservative approach that should result in the overestimation of potential exposure and risk.

As indicated in Table 3-8, screening values are available for a few of the COPECs. Therefore, the methodology of the ORNL (Sample *et al.,* 1996) was used to derive toxicological benchmarks for the meadow vole from published toxicological data for laboratory animals. Literature sources included IRIS (EPA, 2001), HEAST (EPA, 1997), and the National Toxicology Program. It should be emphasized that the resulting benchmarks obtained from this methodology and toxicological data are based on a conservative approach whose resulting relationship to potential population effects is uncertain.

NOAELs and lowest observed adverse effect levels (LOAELs) are daily dose levels normalized to the weight of the test animal [*e.g.,* milligrams of chemical per kilogram body weight per day (mg/kg/day)]. The presentation of toxicity data on a mg/kg/day basis allows for comparison across species with appropriate consideration for differences in body sizes. If a NOAEL (or LOAEL) for a mammalian test species ($NOAEL_t$) is available, then the equivalent NOAEL (or LOAEL) for a mammalian wildlife species ($NOAEL_w$) can be calculated by using an adjustment factor for the difference in body size:

$$NOAEL_w = NOAEL_t \times \left({}^{bw_t}\!\big/_{bw_w} \right)^{1/4}$$

Where:

$NOAEL_w$ = No observed adverse effect level for wildlife species (mg/kg/day)

$NOAEL_t$ = No observed adverse effect level for test species (mg/kg/day)

bw_w = Body weight for wildlife species (kg)

bw_t = Body weight for test species (kg)

In some cases, a NOAEL for a specific chemical was not available, but a LOAEL or lethal dose (LD_{50}) had been determined experimentally. The NOAEL can be estimated by applying an uncertainty factor (UF) to the LOAEL or LD_{50}. In the USEPA methodology (EPA, 1989), the LOAEL or LD_{50} can be reduced by a factor of 10 or 50, respectively, to derive the NOAEL.

The dietary level or concentration in food (C_f) of a chemical in milligrams of chemical per kilogram of food that would result in a dose equivalent to the NOAEL can be calculated from the food factor (f):

$$C_f = \frac{NOAEL_w}{f}$$

The food factor, (f) is the amount of food consumed per day per unit of body weight. Table 3-9 provides the body weight, food intake and food factors used in the derivation of chemical-specific NOAELS for the meadow vole. Table 3-10 provides the derived toxicological benchmarks for the meadow vole.

Screening the maximum concentrations of the on-site soil COPECs against the literature and derived benchmark values indicated:

- Several chemicals exceeded their respective benchmark values and may pose a risk to environmental receptors. They include total xylenes, 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, dibenzofuran, phenanthrene, aluminum, arsenic, barium, chromium, lead, manganese, selenium, vanadium, and dieldrin.

- Several chemicals did not exceed their respective benchmark values and do not pose a risk to environmental receptors. These include benzene, ethylbenzene, toluene, acenaphthene, acenaphthylene, anthracene, fluorene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, pyrene, antimony, beryllium, cadmium, copper, cobalt, total cyanide, mercury, nickel, silver, zinc, 4,4’-DDD, 4,4’-DDT, aroclor 1260, endosulfan II, endosulfan sulfate, endrin aldehyde, endrin ketone, and methoxychlor.

3.3.2 Surface Water

The NYSDEC ambient water quality standards and guidance values (NYSDEC, 1998a) for the protection of salt water aquatic life were used to evaluate chemical concentrations in surface water and pore water from Sag Harbor. These values are generally based on acute toxicity endpoints from laboratory studies of aquatic species, or endpoints related to bioaccumulation. Class SA water standards (primary contact recreation and fish propagation) were used because Sag Harbor, which is part of the Peconic Estuary, is classified as SA. All surface water quality standards were obtained from either 6 NYCRR 703.5 or TOGS 1.1.1. NYSDEC surface water quality standards are not available for several of the organic chemicals detected in Sag Harbor. Therefore, chemical concentrations in surface water also were compared to toxicological benchmarks derived by the EPA OSWER (Tier II values) and presented by ORNL (Suter and Tsao, 1996) and EPA Region IV (saltwater chronic screening values) (EPA, 2001b). These comparisons are presented in Table 3-11.

Eight pore water and 12 surface water samples were collected and analyzed for BTEX compounds and PAHs. Screening the maximum surface water concentration against the benchmarks indicated total xylene and acenaphthene did not exceed their respective toxicological benchmarks in pore water and surface water. Phenanthrene exceeded the toxicological benchmarks in pore water. A toxicological benchmark is not available for pyrene.

3.3.3 Sediment

The NYSDEC technical guidance for screening contaminated sediments (NYSDEC, 1998b) was used to evaluate chemicals concentrations in sediment. The results are provided in Table 3-12. The NYSDEC has derived criteria for non-polar organic compounds using the equilibrium partitioning methodology recommended by the EPA. This methodology contends that sediment toxicity is attributable to the concentration of chemical in the interstitial pore water, which is considered to be biologically available to benthic organisms. It can be inferred that the water quality criteria developed to protect aquatic life from chemicals dissolved in the water column should also protect aquatic life from chemicals dissolved in the pore water. To derive an organic carbon-normalized sediment criterion, the following information is needed:

- an ambient water quality criterion (WQC) for a particular chemical; and
- the octanol/water partition coefficient (K_{ow}) for the chemical.

The organic carbon-normalized sediment criterion (SC_{oc}) would be:

$$SC_{oc} = WQC * K_{ow}$$

NYSDEC sediment criteria values are not available for several of the organic chemicals detected in the waterbody sampled. Therefore, chemical concentrations in sediment were also compared to toxicological benchmarks for sediment presented in the Oak Ridge National Laboratory guidance (Jones et al, 1997). Three sets of benchmarks are presented. The first two are the ORNL and EPA OSWER toxicological benchmarks, which were also derived using the equilibrium partitioning methodology. The difference between ORNL and the OSWER values is that the OSWER uses the lower limit of the 95% confidence interval rather than the central tendency value. The third set of values is from the Ontario Ministry of Environment (OME). The OME derived criteria use a screening-level approach. This approach provides two values, a lowest value (viz., a level at which actual ecotoxic effects become apparent) and a severe value (viz., a level that could potentially eliminate most of the benthic organisms). These values also are presented in Table 3-12.

The NYSDEC has established two levels of criteria for inorganic chemicals in sediments. These are the lowest effect level (LEL) and severe effect level (SEL). The LEL indicates a level of sediment contamination that can be tolerated by the majority of the benthic organisms, but still causes toxicity to a few species. The SEL indicates the concentration at which effects to the sediment-dwelling community indicate highly contaminated sediments.

Eighteen samples from Sag Harbor were collected and analyzed for BTEX compounds and PAHs. Screening the maximum sediment concentration against the benchmarks indicated the following.

Several chemicals did not exceed their respective benchmark values and do not pose a risk to environmental receptors. These include total xylene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluoranthene, naphthalene, and phenanthrene.

Several chemicals exceeded their respective benchmark values and may pose a risk to environmental receptors. They include acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenzo(a,h)pyrene and fluoranthene.

Toxicological benchmark values were not available for benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, indeno(1,2,3-cd) pyrene, and pyrene.

3.4 Conclusions

3.4.1 Habitat Characterization

The site reconnaissance conducted as part of this analysis indicates the site and surrounding upland areas are poor quality environmental resources, due to the limited presence of vegetation. The site is partially covered with buildings, blue stone and asphalt. Wildlife species, typically present are adapted to urban settings. Due to the size of the vegetated areas, only a few individuals will be present.

The Peconic Estuary is a regionally important fish, wildlife and plant habitat complex. In addition, state and federally regulated tidal wetlands are located in the estuary. Wetlands are considered significant natural resources. All these resources combine to make the Peconic Estuary a valuable natural resource.

3.4.2 Soil

Several COPECs were detected at concentrations greater than the toxicological benchmark values. While this finding suggests that these chemicals may pose a risk for impact to wildlife, the potential for impact from COPECs is minimal for several reasons. Exposure frequency, chemical concentration (especially within in the upper six inches), mechanism of exposure, and duration of exposure determines the risk of impact. The site and immediate surrounding area are residential, commercial or industrial properties. The commercial and industrial areas have minimal habitat in the form of "weedy" patches that would not support a wildlife population. The residential areas are comprised of single-family homes and multi-unit dwellings surrounded primarily by maintained lawns. These areas experience constant physical disturbance that prevents populations of wildlife from developing. Because only transient species and a few individual animals would use this area, the frequency and duration of exposure is limited. Additionally, the future use of the site is expected to be of a type that will not provide a significant wildlife habitat. Thus, the observed MGP-related chemicals do not pose a current impact, nor is any expected in the future.

The Remedial Investigation and FWRIA have indicated that there are pathways through which wildlife could be exposed to potentially hazardous materials related to former MGP activities. Due to the level of development in the community and the transient nature of species present, remedial activities specifically directed at wildlife exposure are not required at this time.

3.4.3 Surface Water

The NYSDEC surface water quality standards plus criteria for the OSWER and EPA Region IV were used to screen the data collected from Sag Harbor. Only phenanthrene was detected at a concentration slightly greater than the toxicological benchmark values. This suggests that this chemical may pose a minimal risk to aquatic wildlife. Based on these results, the Peconic Estuary and Sag Harbor are not currently impacted by site-related constituents.

3.4.4 Sediment

Several COPECs in Sag Harbor were detected at concentrations greater than the toxicological benchmark values. This suggests that these chemicals may pose a risk to wildlife.

These potential effects are considered to have minimal ecological significance. The major effects are caused by PAHs. PAHs are a major component of coal tars. PAHs contain only carbon and hydrogen and consist of two or more fused benzene rings in linear, angular or cluster arrangements. The number of rings in a PAH molecule affects its biological activity, and fate and transport in the environment. In general, most PAHs can be characterized as being hydrophobic, and having low vapor pressure, low to very low water solubility, low Henry's Law constant, high log K_{ow}, and high organic carbon partition coefficient (K_{oc}). High partition coefficients and low solubilities suggest that PAHs are likely to be adsorbed onto sediment particles and are thus not bioavailable.

Bioavailability represents the accessibility of a chemical for assimilation and possible toxicity to an organism. The bioavailability of PAHs in sediment declines with time and the current analytical methods, because they measure total and not bioavailable concentrations, may overestimate the magnitude of the environmental and societal problem from these pollutants. Aging is toxicologically significant because the assimilation and acute and chronic toxicity of harmful compounds decline as they persist and become increasingly sequestered with time (Alexander, 2000).

During the aging process, molecules slowly move into sites within the soil/sediment matrix that are not readily accessed by even the smallest of microorganisms, no less tissues of higher organisms. Organic matter is the chief sorbent for hydrophobic molecules. If sequestered molecules are inaccessible to organisms and even to extracellular enzymes of microorganisms and if diffusion out of these remote sites is extremely slow, the bioavailability of PAHs will be governed by the very slow rate of release to an accessible site. In a reasonably short time period, therefore, little would be available to an animal, plant, or microorganism (Alexander, 2000).

4.0 References

Alexander, M. 2000. Aging, Bioavailability, and Overestimation of Risk from Environmental Pollutants. Environmental Science & Technology. 34: 4259-4265.

Burt, W.H. and R.P. Grossenheider. 1976. *Field Guide to the Mammals.* Houghton Mifflin Company. Boston, MA.

Clough, M.W., 2000, Personal Communication. United States Department of the Interior, Fish and Wildlife Service, Cortland, New York.

Conat, R. and J.T. Collins. 1975. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. . Houghton Mifflin Company. Boston, MA.

DeGraaf, R.M. and D.D., Rudis, 1983, *New England Wildlife: Habitat, Natural History, and Distribution*. General Technical Report NE-108. Northeast Forest Experiment Station. Amherst, MA.

Dvirka and Bartilucci (D&B), 2000, final Remedial Investigation/Feasibility Study Work Plan, Sag Harbor Former MGP Site, February 2000.

Dvirka and Bartilucci (D&B), 2002, Remedial Investigation Report, Sag Harbor Former MGP Site, June 2002.

Efroymson, R.A., M.E. Will, and G.W. Suter III, 1997a, Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process: 1997 Revision. ES/ER/TM-126/R2. Oak Ridge National Laboratory, Oak Ridge, TN.

Efroymson, R.A., M.E. Will, G.W. Suter III and A.C. Wooten, 1997b, Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. ES/ER/TM-126/R2. Oak Ridge National Laboratory, Oak Ridge, TN.

Eisler, R., 1987, Polycyclic Aromatic Hydrocarbon Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review. Biological Report 85(1.11) U.S. Fish and Wildlife Service, Laurel, MD.

Engineering-Science, Inc., 1993, Preliminary Site Assessment Sag Harbor Bridge Street Site, Sag Harbor, New York.

Fluor Daniel GTI, Inc., 1997, Phase I Site Investigation Report, Sag Harbor, New York Site, April.

Howard, P.H., 1990, Handbook of Environmental Fate and Exposure Data for Organic Chemicals. Lewis Publishers, Chelsea, MI.

Jones, D.S., G.W. Suter and R.N. Hall. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Sediment-Associated Biota: 1997 Revision. ES/ER/TM-95/R4. Oak Ridge National Laboratory, Oak Ridge, TN.

Kabata-Pendias, A. and H. Pendias, 1992, Trace Elements in Soils and Plants. P.T. Kostecki, E.J. Calabrese, eds. Lewis Publishers, Inc. Chelsea, Michigan.

Krahling, H., 2000, Personal Communication. New York State Department of Environmental Conservation, Division of Fish, Wildlife & Marine Resources. NYS Natural Heritage Program. Latham, NY.

McIntosh, A., 1992, Trace Metals in Freshwater Sediments: A Review of the Literature and an Assessment of Research Needs. In: Metal Ecotoxicology Concepts & Applications. Edited by M.C. Newman and A.W. McIntosh, Lewis Publishers, Inc. Chelsea, MI.

National Toxicology Program's Chemical Health and Safety Data WebSite: http://ntp-server.niehs.nih.gov/Main_Pages/Chem-HS.html.

New York State Department of Environmental Conservation (NYSDEC), 2000, New York Breeding Bird Atlas 2000 Project.

New York State Department of Environmental Conservation (NYSDEC), 1998a. *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.* Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, Albany, NY.

New York State Department of Environmental Conservation (NYSDEC), 1998b, Technical Guidance for Screening Contaminated Sediments, Division of Fish and Wildlife, Albany, New York.

New York State Department of Environmental Conservation, New York State Code of Rules and Regulations, 6NYCRR Title 6, Chapter 100, Part 700-705.

Oak Ridge National Laboratory (ORNL), 1999, on-line toxicological profiles, http://risk.lsd.ornl.gov/tox/rap_toxp.htm.

Peterson, R.T., 1980, *A Field Guide to the Birds East of the Rockies*. Houghton Mifflin Company, Boston, MA.

Reschke, C., 1990, *Ecological Communities of New York State*, New York Natural Heritage Program, Latham, NY.

Sample, B.E., D.M. Opresko and G.W. Suter, 1996, Toxicological Benchmarks for Wildlife: 1996 Revision. ES/ER/TM-86/R3. Prepared for the U.S. Department of Energy, Office of Environmental Management, Oak Ridge National Laboratory, Oak Ridge, TN.

Suffolk County Department of Health Services (SCDHS), 2000, Comprehensive Conservation and Management Plan, Peconic Estuary Program, Riverhead, NY.

Suter, G.W. and C.L. Tsao. 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision. ES/ER/TM-96/R2. Oak Ridge National Laboratory, Oak Ridge, TN.

United States Environmental Protection Agency (USEPA), 1989, Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Part A), Interim Final, Office of Emergency and Remedial Response, EPA/540/1-89/002.

United States Environmental Protection Agency (USEPA), 1997, Health Assessment Effects Summary Tables. FY 1997 update. Washington, D.C.

United States Environmental Protection Agency (USEPA), 2001b, Region 4 Ecological Risk Assessment Bulletins, www.epa.gov/region4/wastepgs/oftecser/ecolbul.htm. INTERNET.

United States Environmental Protection Agency (EPA), 2001, Integrated Risk Information System on-line database, http://www.epa.gov/ngispgm3/iris/index.html.

Tables

Table 2-1
Human Health Chemicals of Potential Concern

	Chemicals of Potential Concern		
Medium	Volatile Organic Chemicals	PAHs, Pesticides, and PCBs	Metals and Total Cyanide
Surface Soil			
On-Site	2-Butanone, acetone, methylene chloride	2-Methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, 4,4'-DDT, dibenzo(a,h)anthracene, dibenzofuran, Endosulfan II, Endrin, Endrin aldehyde, Endrin ketone, fluoranthene, fluorene, Heptachlor epoxide, indeno(1,2,3-cd)pyrene, Methoxychlor, naphthalene, phenanthrene, pyrene	Aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium (total), cobalt, copper, cyanide (total), lead, manganese, mercury (inorganic), nickel, selenium, silver, thallium, vanadium, zinc
Off-Site [1]	Acetone, Xylene (total)	1,4-Dichlorobenezene, 2-methylnaphthalene, 4-chloroaniline, 4-methylphenol, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, carbazole, chrysene, dibenzo(a,h)anthracene, dibenzofuran, diethylphthalate, di-n-butylphthalate, di-n-octylphthalate, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, phenol, pyrene	Aluminum, arsenic, barium, cadmium, chromium (total), copper, lead, manganese, mercury (inorganic), nickel, selenium, silver, vanadium, zinc, cyanide (total)
Subsurface Soil			
On-Site	1,1,1-Trichloroethane, 2-butanone, acetone, benzene, ethylbenzene, methylene chloride, styrene, toluene, xylene (total)	2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, Aroclor 1260, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, 4,4'-DDD, 4,4'-DDT, dibenzo(a,h)anthracene, dibenzofuran, dieldrin, endosulfan II, endosulfan sulfate, endrin, endrin aldehyde, endrin ketone, fluoranthene, fluorene, gamma-BHC (Lindane), gamma-chlordane, indeno(1,2,3-cd)pyrene, methoyxchlor, naphthalene, phenanthrene, pyrene	Aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium (tota), cobalt, copper, cyanide (total), lead, manganese, mercury (inorganic), nickel, selenium, silver, vanadium, zinc
Off-Site	Benzene, ethylbenzene, toluene, xylene (total)	None	Arsenic, barium, cadmium, chromium (total), lead, mercury (inorganic), selenium, silver [2], cyanide (total)
Groundwater			
On-Site	1,2-Dichloroethene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, methylene chloride, toluene, trichloroethene, vinyl chloride, xylene (total)	2-Methylnaphthalene, 2,4-dimethylphenol, 4-methylphenol, 4,4'-DDD, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, carbazole, chrysene, dibenzo(a,h)anthracene, dibenzofuran, Endosulfan sulfate, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene	Aluminum, arsenic, barium, beryllium, cadmium, chromium (total), cobalt, copper, cyanide (total), lead, manganese, mercury (inorganic), selenium, silver, thallium, vanadium, zinc
Off-Site	benzene, ethylbenzene, methyl tert-butyl ether, toluene, xylene (total)	2-Methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene	Arsenic, barium, cadmium, chromium (total), cyanide (total), cyanide (dissolved), lead, mercury (inorganic), selenium, silver [2]
Indoor Air			
On-Site [3]	1,1,1-Trichloroethane, 1,2-dichloroethene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 2-butanone, acetone, benzene, ethylbenzene, methylene chloride, toluene, trichloroethene, vinyl chloride, xylene (total)	2-Methylnaphthalene, 2,4-dimethylphenol, 4-methylphenol, 4,4'-DDD, 4,4'-DDT, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, carbazole, chrysene, dibenzo(a,h)anthracene, dibenzofuran, Dieldrin, Endosulfan II, Endosulfan sulfate, Endrin, Endrin aldehyde, Endrin ketone, fluoranthene, fluorene, gamma-BHC, gamma-Chlordane, indeno(1,2,3-cd)pyrene, Methoxychlor, naphthalene, phenanthrene, pyrene	Mercury
Off-Site (Commercial Worker, Visitor, & Resident)	Acetone, benzene, 2-butanone, carbon disulfide, chloroform, chloromethane, cyclohexane, ethanol, ethylbenzene, 4-ethyl toluene, freon 11, freon 12, heptane, 4-methyl-2-pentanone, methylene chloride, 2-propanol, styrene, tetrachloroethene, tetrahydrofuran, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, m,p-xylenes, o-xylene	NA	None
Off-Site (Condominium Resident)	Acetone, 2-butanone, carbon disulfide, chloroform, chloromethane, 1,4-dichlorobenzene, ethanol, ethylbenzene, freon 11, freon 12, methylene chloride, 2-propanol, toluene, tetrachloroethene, 1,2,4-trimethylbenzene, m,p-xylenes, o-xylene	NA	None
Off-Site (North-Commercial)	Acetone, benzene, chloromethane, ethanol, ethylbenzene, freon 11, freon 12, hexane, methyl tert-butyl ether, methylene chloride, 2-propanol, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, m,p-xylenes, o-xylene	NA	None
Off-Site (North-Resident)	Acetone, benzene, 2-butanone, chloromethane, ethanol, ethylbenzene, freon 12, hexane, methylene chloride, methyl tert-butyl ether, tetrahydrofuran, toluene, 1,2,4-trimethylbenzene, m,p-xylenes, o-xylene	NA	None

Table 2-1
Human Health Chemicals of Potential Concern (Cont.)

Ambient Air			
On-Site	1,1,1-Trichloroethane, 1,2-dichloroethene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 2-butanone, acetone, benzene, ethylbenzene, methylene chloride, toluene, trichloroethene, vinyl chloride, xylene (total)	Naphthalene	None
Off-Site	benzene, ethylbenzene, methyl tert-butyl ether, toluene, xylene (total)	Naphthalene	None

[1] Off-site surface soil COPCs were selected based on data collected under previous investigations, independent of the Remedial Investigation, and data collected during the Final Remedial Investigation.

[2] Analysis was for RCRA metals.

[3] COPCs for this on-site exposure medium were selected based on chemicals detected in subsurface soil and groundwater with the potential to volatize.

NA: Not Analyzed.

Table 2-2
Exposure Matrix for the Sag Harbor Former Manufactured Gas Plant Site

	Media	**Surface Soil**			**Subsurface Soil**		**Groundwater**		**Indoor Air**	**Ambient Air**
	Potential Exposure	Ingestion	Dermal Contact	Particulate Inhalation	Ingestion	Dermal Contact	Dermal Contact	Ingestion	Inhalation	Inhalation
Scenario	Receptor									
On-Site	Trespassers – C	√	√	√	Ø	Ø	Ø	Ø	Ø	Ø
	Adult KeySpan Workers – C [1]	√	√	√	√	√	√	Ø	√	√
	Adult Construction Workers – F [1]	√	√	Ø	√	√	√	Ø	Ø	√
	Adult Commercial Workers – F [2]	Ø	Ø	Ø	Ø	Ø	Ø	Ø	√	Ø
	Adult & Child Visitors – F [2]	Ø	Ø	Ø	Ø	Ø	Ø	Ø	√	Ø
	Adult & Child Residents – F [3]	√	√	√	√	√	√ [4, 7]	√ [4, 7]	√	√
Off- Site	Adult Commercial Workers – C	Ø	Ø	Ø	Ø	Ø	Ø	Ø	√ [7]	Ø
	Adult & Child Visitors – C	Ø	Ø	Ø	Ø	Ø	Ø	Ø	√ [7]	Ø
	Adult & Child Residents – C	√	√	√ [5, 6]	√	√	√ [4, 7]	√ [4, 7]	√ [7]	Ø
	Adult Construction Workers – F [1]	√	√	Ø	√	√	√	Ø	Ø	√
	Adult Nearby Utility Workers – F[1]	√	√	Ø	√	√	√	Ø	Ø	√

Table 2-2
Exposure Matrix for the Sag Harbor Former Manufactured Gas Plant Site (cont.)

	Media	**Surface Water**		**Sediment**		**Biota**
	Potential Exposure	Ingestion	Dermal Contact	Ingestion	Dermal Contact	Ingestion
Scenario	Receptor					
Off-Site	Recreationalist – C	√	√	√	√	√

1 Ambient air exposure includes inhalation of soil particulates, soil vapor and groundwater vapor as a consequence of trenching activities.
2 Indoor air concentrations associated with chemical concentrations in subsurface soil and groundwater.
3 Deed restrictions are not yet in place at the Sag Harbor site and although future residential land use of the site is not presently anticipated, a future residential scenario is included here. Potential groundwater exposures for the future on-site resident include inhalation of volatiles while showering. It should be noted that future redevelopment of the site likely would include municipal water service.
4 Given the high water table, dermal contact with groundwater by off-site residents is possible if they were to access the subsurface in their yards.
5 Includes particulate inhalation. The site is covered with bluestone thereby reducing the potential for exposure to wind-borne particulates; consequently, the potential for this exposure is considered limited.
6 Includes particulate and vapor inhalation associated with excavation work. It is anticipated that this potential exposure would be short-term and if warranted, mitigative measures, *e.g.,* wetting down soils associated with the excavation or covering the soils, would be employed to further reduce potential exposure.
7 Available data from the Well and Basement Survey and indoor air sampling conducted to date indicate that these exposure pathways are incomplete or not an exposure pathway of concern.

√ = Potentially Complete Pathway/Route
Ø = Incomplete Pathway/Route
C = Current exposure
F = Future exposure

Table 2-3
Sag Harbor Former MGP Site – Summary of Potential Exposures

Potentially Exposed Population	***Exposure Media***	***Exposure Potential***	***Pathway Complete?***		***Comments***
Current Scenarios			*As Is* [1]	*With Selected Remedial Alternative* [2]	
On-site trespassers	▪ Surface soil ▪ Ingestion ▪ Dermal contact ▪ Particulate inhalation	Minimal	Yes	No	Access to site is restricted by gated fence. Site surface is covered by gravel/bluestone.
On-site KeySpan workers	▪ Surface soil ▪ Ingestion ▪ Dermal contact ▪ Particulate inhalation	Minimal	Yes	No	Site surface is covered by gravel/bluestone.
	▪ Subsurface soil ▪ Ingestion ▪ Dermal contact ▪ Particulate/vapor inhalation	Low	Yes	No	Excavation work is not frequently performed. KeySpan maintains a policy that only trained workers are used for excavation work at active facilities, *i.e.*, a "no dig" policy is in effect at the site.
	▪ Groundwater ▪ Dermal contact	Low	Yes	No	Excavation work is not frequently performed. KeySpan maintains a policy that only trained workers are used for excavation work at active facilities, *i.e.*, a "no dig" policy is in effect at the site.
	▪ Indoor air ▪ Vapor inhalation	None*	No	No	Ambient air and soil vapor data indicate that air concentrations are either non-detect or detected at levels below concern.

[1] Conditions as they currently exist.

[2] The remedial alternative will be selected as part of the next phase of this program, the Remedial Action Plan. These remedial actions will be designed to either eliminate a potential exposure pathway or to reduce the exposure to levels deemed appropriate by the NYSDOH and NYSDEC. Remedial activity may include engineering and administrative controls or a combination thereof.

* Based on currently available data.

Table 2-3 (continued)
Sag Harbor Former MGP Site – Summary of Potential Exposures

Potentially Exposed Population	***Exposure Media***	***Exposure Potential***	***Pathway Complete?***		***Comments***
Current Scenarios (continued)			*As Is* [1]	*With Selected Remedial Alternative* [2]	
Adult off-site commercial workers and adult and child visitors	▪ Indoor air ▪ Vapor inhalation	None*	No	No	Results of available indoor air data indicate that these exposure pathways are incomplete or not of concern.
	▪ Particulate inhalation	Minimal	Yes	No	Site is primarily covered with gravel. Exposure to wind-borne particulates from excavations is possible but would be limited in duration and mitigative measures would be employed to further reduce exposures.
	▪ Groundwater ▪ Dermal contact ▪ Ingestion ▪ Vapor inhalation	Moderate to High	Yes	NA	Two private wells were identified as being used for potable purposes. Detected parameters are unrelated to MGP impacts and were present at concentrations that achieve NYSDOH public water supply standards/action levels.

[1] Conditions as they currently exist.

[2] The remedial alternative will be selected as part of the next phase of this program, the Remedial Action Plan. These remedial actions will be designed to either eliminate a potential exposure pathway or to reduce the exposure to levels deemed appropriate by the NYSDOH and NYSDEC. Remedial activity may include engineering and administrative controls or a combination thereof.

* Based on currently available data.

Table 2-3 (continued)
Sag Harbor Former MGP Site – Summary of Potential Exposures

Potentially Exposed Population	***Exposure Media***	***Exposure Potential***	***Pathway Complete?***		***Comments***
Current Scenarios (continued)			*As Is* [1]	*With Selected Remedial Alternative* [2]	
Adult and child off-site residents	▪ Surface soil ▪ Ingestion ▪ Dermal contact ▪ Particulate inhalation	None	No	No	Surface soil data indicate off-site concentrations are below levels of concern. Exposure to wind-borne particulates from excavations is possible but would be limited in duration and mitigative measures would be employed to further reduce exposures.
	▪ Subsurface soil ▪ Ingestion ▪ Dermal contact ▪ Particulate/vapor inhalation	Minimal	Yes	No	In consideration of an individual who may garden or engage in subsurface work for another purpose. Subsurface soil concentrations are generally below levels of concern.
	▪ Groundwater ▪ Dermal contact ▪ Ingestion ▪ Vapor inhalation	Moderate to High	Yes	NA	Two private wells were identified as being used for potable purposes. Detected parameters are unrelated to MGP impacts and were present at concentrations that achieve NYSDOH public water supply standards/action levels.
	▪ Indoor air ▪ Vapor inhalation	None*	No	No	Indoor air concentrations measured in homes in the vicinity of the site are below levels of concern.

[1] Conditions as they currently exist.

[2] The remedial alternative will be selected as part of the next phase of this program, the Remedial Action Plan. These remedial actions will be designed to either eliminate a potential exposure pathway or to reduce the exposure to levels deemed appropriate by the NYSDOH and NYSDEC. Remedial activity may include engineering and administrative controls or a combination thereof.

* Based on currently available data.

Table 2-3 (continued)
Sag Harbor Former MGP Site – Summary of Potential Exposures

Potentially Exposed Population	***Exposure Media***	***Exposure Potential***	***Pathway Complete?***		***Comments***
Current Scenarios (continued)			*As Is* [1]	*With Selected Remedial Alternative* [2]	
Adult and child off-site recreationalists	▪ Sediment ▪ Ingestion ▪ Dermal contact	Minimal	Yes	Specific remedial actions are not planned for the Cove. The RAP will consider mitigating the potential for adverse impacts (via groundwater) to the Cove.	Potential exposure is infrequent.
	▪ Surface water ▪ Ingestion ▪ Dermal contact	None	No		Potential exposure is infrequent and only one potentially site-related compound, xylene, was detected at a very low concentration.
	▪ Biota ▪ Fish consumption	Minimal	Yes		Chemicals do not tend to bioconcentrate.

[1] Conditions as they currently exist.

[2] The remedial alternative will be selected as part of the next phase of this program, the Remedial Action Plan. These remedial actions will be designed to either eliminate a potential exposure pathway or to reduce the exposure to levels deemed appropriate by the NYSDOH and NYSDEC. Remedial activity may include engineering and administrative controls or a combination thereof.

Table 2-3 (continued)
Sag Harbor Former MGP Site – Summary of Potential Exposures

Potentially Exposed Population	***Exposure Media***	***Exposure Potential***	***Pathway Complete?***		***Comments***
Future Scenarios			*As Is* [1]	*With Selected Remedial Alternative* [2]	
Adult on-site commercial workers and adult and child visitors	▪ Indoor air ▪ Vapor inhalation	None*	No	No	Results of available indoor air data indicate that these exposure pathways are incomplete or not of concern.

On- and off-site construction workers
Nearby off-site utility workers
	▪ Surface soil
	  ▪ Ingestion
	  ▪ Dermal contact
	  ▪ Particulate inhalation
		Moderate to high	Yes	No	Site surface is covered by bluestone and gravel. Surface soil data indicate off-site concentrations are below levels of concern.

	▪ Subsurface soil
	  ▪ Ingestion
	  ▪ Dermal contact
	  ▪ Particulate/vapor inhalation
		Moderate to high	Yes	No	Subsurface soil concentrations are generally below levels of concern.

	▪ Groundwater
	  ▪ Dermal contact
	  ▪ Vapor inhalation
		Moderate to high	Yes	No	Groundwater beneath and in the vicinity of the site is well within the range of typical depths of construction and/or utility work.

[1] Conditions as they currently exist.

[2] The remedial alternative will be selected as part of the next phase of this program, the Remedial Action Plan. These remedial actions will be designed to either eliminate a potential exposure pathway or to reduce the exposure to levels deemed appropriate by the NYSDOH and NYSDEC. Remedial activity may include engineering and administrative controls or a combination thereof.

* Based on currently available data.

Table 2-3 (continued)
Sag Harbor Former MGP Site – Summary of Potential Exposures

Potentially Exposed Population	***Exposure Media***	***Exposure Potential***	***Pathway Complete?***		***Comments***
Future Scenarios (continued)			*As Is* [1]	*With Selected Remedial Alternative* [2]	
Adult and child on-site residents	▪ Surface soil ▪ Ingestion ▪ Dermal contact ▪ Particulate inhalation	Minimal	Yes	No	Site redevelopment would disturb surface soil.
	▪ Subsurface soil ▪ Ingestion ▪ Dermal contact ▪ Particulate/vapor inhalation	Moderate	Yes	No	In consideration of an individual who may garden or engage in subsurface work for another purpose. Subsurface soil concentrations are generally below levels of concern.
	▪ Groundwater ▪ Dermal contact ▪ Ingestion ▪ Vapor inhalation	Moderate to high	Yes	No	Exposure potential is moderate to high only if wells are installed for domestic purposes.
	▪ Indoor air ▪ Vapor inhalation	None*	No	No	Ambient air and soil vapor data indicate that air concentrations are either non-detect or detected at levels below concern.

[1] Conditions as they currently exist.

[2] The remedial alternative will be selected as part of the next phase of this program, the Remedial Action Plan. These remedial actions will be designed to either eliminate a potential exposure pathway or to reduce the exposure to levels deemed appropriate by the NYSDOH and NYSDEC. Remedial activity may include engineering and administrative controls or a combination thereof.

* Based on currently available data.

Table 3-1
Fish and Wildlife Resources Impact Analysis Decision Key

	Yes	**No**
1. Is the site or area of concern a discharge or spill event?		√
2. Is the site or area of concern a point source of contamination to the groundwater which will be prevented from discharging to surface water? Soil contamination is not widespread, or if widespread, is confined under buildings and paved areas?		√
3. Is the site and all adjacent property a developed area with buildings, paved surfaces and little or no vegetation?	√	
4. Does the site contain habitat of an endangered, threatened, or special concern species?		√
5. Has the contamination gone off-site?	√	
6. Is there any discharge or erosion of contamination or the potential for discharge or erosion of contamination?	√	
7. Are the site contaminants PCBs, pesticides, or other persistent, bioaccumulable substances?		√
8. Does contamination exist at concentrations that could exceed SCGs or be toxic to aquatic life if discharged to surface water?	√	
9. Does the site or any adjacent or downgradient property contain any of the following resources?		
a. any endangered, threatened, or special concern species or rare plants or their habitats		√
b. Any NYSDEC designated significant habitats or rare NYS ecological communities		√
c. Tidal or freshwater wetlands	√	
d. Streams, creeks, or river		√
e. Pond, lake or lagoon		√
f. Drainage ditch or channel		√
g. Other surface water features		√
h. Other marine or freshwater habitats	√	√
i. Forest		√
j. Grassland or grassy field	√	
k. Parkland or woodland		√
l. Shrubby area		√
m. Urban wildlife habitat	√	
n. Other terrestrial habitat		√
10. Is the lack of resources due to contamination		√
11. Is the contamination a localized source which has not migrated from the source to impact any on-site or off-site resources?		√
12. Does the site have widespread soil contamination that is not confined under and around buildings or paved areas?		√
13. Does the contamination at the site or area of concern have the potential to migrate to, erode into or otherwise impact any on-site or off-site habitat of endangered, threatened or special concern species or other fish and wildlife resources?	√	
14. Fish and wildlife resources impact analysis needed?	√	

Table 3-2
Plant Species Identified During Field Reconnaissance

Common Name	Scientific Name	Common Name	Scientific Name
Crab apple	*Pyrus prunifolia*	Goldenrod	*Solidago spp.*
Sugar maple	*Acer saccharum*	Japanese knotweed	*Polygonella cuspidatum*
Tartarian honeysuckle	*Lonicera tatarica*	Red clover	*Trifolium pratense*
Arbor vitea	*Thuja occidentalis*	Garlic mustard	*Allaria officinalis*
Switchgrass	*Panicum virgatum*	Sycamore	*Plantus occidentalis*
Choke cherry	*Prunus virginiana*	Phragmites	*Phragmites communis*
Multi-flora rose	*Rosa multiflora*	Evening primrose	*Oenothera biennis*
Dandelion	*Taraxacum officinale*	Jack pine	*Pinus banksiana*
English plantain	*Plantago lanceolata*	Japanese honeysuckle	*Lonicera japonica*
Crab grass	*Digitaria sanguinalis*	Red maple	*Acer rubrum*
Queen Anne's lace	*Daucus carota*	Heal all	*Prunella vulgaris*

Table 3-3
Endangered and Threatened Species in the Vicinity of the Sag Harbor Site

Common Name	Scientific Name	NYS Legal Status	Last Seen	Location	Distance from Site
Golden Dock	*Rumex maritimus var fueginus*	Endangered	No Date	Barcelona Point	2.0 mile east
Little Northwest Creek	*Juncus marginatus var biflorus*	Endangered	1987		1.5 mile east
Creeping St. John's Wort	*Hypericum adpressum*	Endangered	1928, 1989, 1997	Little Northwest Creek, Long Pond, Round Pond, Little Long Pond, Little Round Pond	1.5 mile east; 1.5, 0.8, 1.6, 1 mile south
Virginia False Gromwell	*Onosmodium virginianum*	Endangered	1929	Little Northwest Creek	1.5 mile east
Scirpus-Like rush	*Juncus Scirpoides*	Endangered	1987	Little Northwest Creek	1.5 mile east
Rambur's Forktail	*Ishnura ramburii*	Unprotected	1997	Little Northwest Creek	1.5 mile east
Saltmarsh Aster	*Aster subulatus*	Threatened	1996	Little Northwest Creek	1.5 mile east
Reticulata Nutrush	*Scleria reticularis var pubescens*	Endangered	1990	Little Northwest Creek	1.5 mile east
Maritime Post Oak Community		Unprotected	1997	Barcelona Point	2.0 mile east
Maritme Red Cedar Community		Unprotected	1997	Barcelona Point	2.0 mile east
Coastal Oak-Hickory Forest		Unprotected	1997	Barcelona Point	2.0 mile east
Slender Blue Flag	*Iris prismatica*	Threatened	1997	Little Northwest Creek	1.5 mile east
Bushy Rockrose	*Helianthemem dumosum*	Threatened	1996	Barcelona neck	2.0 mile east
Seaside Goldenrod	*Solidago sempervirens*	Endangered	1997	Little Northwest Creek	1.5 mile east
Piping Plover	*Charadrius melodus*	Endangered	1998	Little Northwest Creek Mouth, Long Beach	1.5 mile east, 1.2 mile west
Sea Level Fen Community		Unprotected	1997	Little Northwest Creek	1.5 mile east
Maritime Dunes Community		Unprotected	1996	Little Northwest Creek Mouth	1.5 mile east
Coastal Oak-heath Forest Community		Unprotected	1997	Barcelona Neck	2.0 mile east
Maritime Beach Community		Unprotected	1996	Little Northwest Creek Mouth	1.5 mile east
Seabeach Knotweed	*Polygonum glaucum*	Rare	1996, 1984	Bacelona Neck, Brick Kiln Road	2.0 mile east, 2.0 mile southwest
Least Tern	*Sterna antillarum*	Threatened	1997, 1998	Little Northwest Creek Mouth. Long Beach	1.5 mile east, 1.2 mile west
Coastal Goldenrod	*Solidago elliotii*	Endangered	1990	Little Northwest Creek	1.5 mile east

Table 3-3
Endangered and Threatened Species in the Vicinity of the Sag Harbor Site (Cont'd.)

Common Name	Scientific Name	NYS Legal Status	Last Seen	Location	Distance from Site
Long-Tubercled Spikerush	*Eleocharis tuberculosa*	Threatened	1990, 1985	Little Northwest Creek, Whalers Drive Pond	1.5 mile east, 0.8 mile south
Marsh Straw Sedge	*Carex hormathodes*	Threatened	1990	Little Northwest Creek	1.5 mile east
Slender Spikegrass	*Chasmanthium*	Endangered	1996	Little Northwest Creek	1.5 mile east
Velvety lespedeza	*Lespedeza stuevei*	Threatened	1985	Little Northwest Creek	1.5 mile east
Silverweed	*Potentilla anserina ssp egedii*	Threatened	1987	Little Northwest Creek	1.5 mile east
Drowned horned Rush	*Rhynchospora inundata*	Threatened	1955	Long Pond	1.5 mile south
Carolina redroot	*Lachnanthes caroliana*	Endangered	1927	Long Pond	1.5 mile south
Crested Fringed Orchis	*Platanthera cristata*	Endangered	1945, 1933	Round Pound, Lily Pond	0.8, 1.5 mile south
Tiny BlueCurls	*Trichostema setaceum*	Endangered	1945	Long Pond	1.5 mile south
Velvety Lespedeza	*Lespedeza stuevei*	Threatened	1925, 1985	Long Pond, Round Pond	1.5, 0.8, 1.5 mile south
Short-Beaked Bald-Rush	*Rhynchospora nitens*	Threatened	1925, 1985	Long Pond, Little Long Pond, Lily Pond, Whalers Drive Pond	1.5, 1.6, 0.8 mile south
Small White Snakeroot	*Eupatorium aromaticum*	Endangered	1925, 1991	Little Long Pond, Long Pond	1.6, 1.5 mile south
Slender Crabgrass	*Digitaria filiformis*	Threatened	1938, 1955	Long Pond	1.5 mile south
White Milkweed	*Asclepias variegata*	Endangered	1927	Round Pond	0.8 mile south
Silvery Aster	*Aster concolor*	Endangered	1927, 1925	Round Pond, Long Pond	0.8, 1.5 mile south
Water Pigmyweed	*Crassula aquatica*	Endangered	No Date	Long Pond	1.5 mile south
Southern Yellow Flax	*Linum medium var texanum*	Threatened	No Date	Long Pond	1.5 mile south
Orange Fringed orchis	*Platanthera cilaris*	Endangered	1929, 1920	Lily Pond, Long Pond	1.5 mile south
Carolina Redroot	*Lachnanthes carlina*	Endangered	1927	Round Pond	0.8 mile south
Smooth Tick-Clover	*Desmodium laevigatum*	Endangered	1925	Little Long Pond	1.6 mile south
Knotted Spikerush	*Eleocharis equsetoides*	Threatened	1984	Round Pond, Long Pond, Little Long Pond	0.8, 1.5, 1.6 mile south
Coastal Plain Pond Shore Community		Unprotected	1997	Round Pond	0.8 miles south

Table 3-3
Endangered and Threatened Species in the Vicinity of the Sag Harbor Site (Cont'd.)

Common Name	Scientific Name	NYS Legal Status	Last Seen	Location	Distance from Site
Long-Beaked Bald Rush	*Rhynchospora scirpoides*	Rare	1985	Lily Pond, Little Long Pond, Long Pond, pond North of Round Pond, Whalers Drive Pond	1.5, 1.6, 1.5, 1.4, 0.8 miles south
Rose coreopsis	*Coreopsis rosea*	Rare	1985, 1997	Little Long Pond, Round Pond, Long Pond, Little Round Pond	1.6, 1.5, 1.5, 1 mile south
Round-Leaf Boneset	*Eupatorium rotundifolium var ovatum*	Endangered	1990	Long Pond	1.5 mile south
Coastal Plain Pond Shore Community		Unprotected	1997	Long Pond	1.5 mile south
Tiger Salamander	*Ambystoma tigrinum*	Endangered	1987, 1988	Brick Kiln Road, Whalers Drive Pond, Powerline Ponds	2 mile southwest, 0.8, 1.5 mile south
Coastal Plain Pond Shore Community		Unprotected	1985	Lily Pond	1.5 mile south
Coastal Plain Pond Shore Community		Unprotected	1997	Little Round Pond	1 mile south
Coastal Plain Pond Shore Community		Unprotected	1985	Little Long Pond	1.6 mile south
New England Bluet	*Enallagma laterale*	Unprotected	1990	Long Pond	1.5 mile south
Coastal Plain Pond Shore Community		Unprotected	1985	Whalers Drive Pond	0.8 mile south
Whorled Pennywort	*Hydrocotyle verticillata*	Endangered	1993	Long Pond	1.5 mile south
Coastal Plain Pond Shore Community		Unprotected	1985	Pond North of Round Pond	0.7 mile south
White Boneset	*Eupatorium leucolepis var leucolepis*	Endangered	1997	Little Round Pond	1 mile south
Globe-fruited Ludwigia	*Ludwigia sphaerocarpa*	Threatened	1997	Round Pond, Little Round Pond, Long Pond, Little Long Pond	1.5, 1, 1.5, 1.6 mile south

Source: Krahling, 2000

Table 3-4
Fish Species That May be Present in the Peconic Estuary

Common Name	Scientific Name
Sea lamprey	*Petromyzo marinus*
American eel	*Anguilla rostrata*
Alewife	*Alosa pseudoharengus*
American shad	*Alosa sapidissima*
Tidewater silverside	*Menidia beryllina*
Atlantic sturgeon	*Acipenser oxyrhynchus*
Short-nose sturgeon	*Acipenser brevirostrum*
Striped bass	*Morone saxatilis*
Bluefish	*Pomatomus saltatrix*
Winter flounder	*Pleuronectes americanus*
Black sea bass	*Centropristis striata*
Atlantic silverside	*Menidia menidia*
Atlantic tomcod	*Micogadus tomcod*
Striped killifish	*Fundulus* majalis
Bay anchovy	*Anchoa mitchilli*
Mummichog	*Fundulus hereroclitus*
Atlantic menhaden	*Brevoortia tyrannus*
Scup	*Stenotomus chrysops*
Windowpane	*Scophthalmus aquosus*
Blackfish	*Tautaoga onitis*
Weakfish	*Cynoscion regalis*
Summer flounder	*Paralichthys dentatus*
Blueback herring	*Alosa aestivalis*

Table 3-5
Herptile Species That May Be Present Based on Cover Types

Common Name	Scientific Name	Habitat Requirements
Eastern spadefoot	*Scaphiopus holbrookii*	Sandy soils with temporary pools for breeding.
Fowler's toad	*Bufo woodhousii*	Prefers areas with sandy soil- shorelines, river valleys.
Northern spring peeper	*Hyla crucifer*	Second growth woodlots.
Gray treefrog	*Hyla veriscolor*	Forested regions with small trees, shrubs and bushes near or in shallow water. Will breed in roadside ditches.
Marbled salamander	*Ambystoma opacum*	Sandy and gravelly areas of mixed deciduous woodlands, especially oak-maple and oak-hickory.
Spotted salamander	*Ambystoma maculatum*	Found in moist woods, streambanks, beneath stones, logs and boards.
Red-spotted newt	*Notophthalmus viridescens*	Adults found in water with abundant submerged vegetation including lakes marshes, ditches, backwaters. Terrestrial juveniles live in moist areas on land.
Redback salamander	*Plethodon cinerus*	Entirely terrestrial. Mixed deciduous or coniferous woods, inhabiting interiors of decaying logs and stumps.
Northern two-lined salamander	*Euryce bislineata*	Along brooks and streams. Found under objects at water's edge in moist soil.
Common snapping turtle	*Chelydra serpentina*	Bottom dweller in any permanent body of fresh or brackish water.
Eastern painted turtle	*Chrysemys picta*	Quiet, shallow ponds and marshes. Sometimes in brackish tidal waters and salt marshes.
Spotted turtle	*Clemmys guttata*	Small shallow bodies of water including roadside ditches and brackish tidal creeks.
Eastern box turtle	*Terrapene carolina*	Typically found in well-drained forest bottomlands.
Red-eared slider	*Pseudemys scripta*	Ponds, shallow areas of lakes, creeks and drainage ditches.
Northern water snake	*Nerodia sipedon*	Inhabits salt or fresh water. Common around spillways and bridges.
Northern brown snake	*Storeria dekayi*	Ubiquitous.
Northern ringneck snake	*Diadophis punctatus*	Secretive. Found hiding in stony woodland pastures, rocks, stonewalls, junk piles, logs, debris, stumps and logs.
Northern black racer	*Coluber constrictor*	Moist or dry areas, forests and wooded areas, fields, roadsides, near old buildings.
Eastern worm snake	*Carpophis amoenus*	Dry to moist forests, often near streams, in the loose soil of gardens or weedy pastures. Sandy areas are favored.
Eastern ribbon snake	*Thamnophis sauritus*	Semiaquatic, inhabiting stream edges and ditches.
Eastern garter snake	*Thamnophis srtalis*	Ubiquitous.
Eastern hognose snake	*Heterodon platyrhinos*	Where sandy soils predominate, such as beaches, open fields, dry open woods.
Eastern milk snake	*Lampropeltis triangulum*	Various habitats, usually with brushy or woody cover.

Source: DeGraaf and Rudis, 1983
Conat, R. and J.T. Collins, 1975

Table 3-6
Bird Species That May Be Present Based on Cover Types

Common Name	Scientific Name	Habitat Requirements	N or M
Green heron	*Butorides virescens*	Makes use of nearly all fresh and salt water habitats.	N
Black-crowned night heron	*Nycticorax nycticorax*	Occupies fresh, brackish and salt water areas.	N
Bufflehead	*Bucephala albeola*	Winters in tidal creeks, coastal brackish areas.	M
Mute swan	*Cygnus olor*	Coastal bays, marshes and ponds having dense aquatic vegetation	N
Canada goose	*Branta canadensis*	Coastal salt marshes.	N
Mallard duck[a]	*Anas platyrynchos*	Prefers areas with water less than 16 inches deep.	N
Osprey	*Pandion platyrhynchos*	Near large bodies of water with abundant fish.	N
Broad-winged hawk	*Buteo platypterus*	Dry forests.	N
Red-tailed hawk	*Buteo jamaicensis*	Mixed woodlands interspersed with meadows.	N
Double-crested cormorant[a]	*Phalacrocorax auritus*	Coastal areas.	N
Wood duck	*Aix sponsa*	Shallow waters of ponds, lakes or marshes having abundant vegetation	N
Herring gull[a]	*Larus argentatus*	Coasts, bays, beaches	N
Greater black-backed gull[a]	*Larus marinus*	Coastal waters, estuaries.	N
Laughing gull	*Larus atricilla*	Salt marshes, beaches, coastal bays.	N
Common tern	*Sterna hirundo*	Beaches, bays.	N
Least Tern	*Sterna antillarum*	Sea beaches, bays.	N
Great egret	*Casmerodiuos albus*	Mud flats.	N
Snowy egret	*Egretta thula*	Tidal flats.	N
Killdeer	*Charadrius vociferus*	Fields, roadsides lawns.	N
American kestrel	*Falco sparverius*	Open areas, forest edges, cities.	N
American woodcock	*Scolopax minor*	Moist woodlands in early stages of succession.	N
Rock dove	*Columbia livia*	Near human habitation.	N
Mourning dove[a]	*Zenaida macroura*	Suburbs, cities, open woodlands.	N
Eastern screech owl	*Otus asio*	Shade trees in suburbs.	N
Great horned owl	*Bubo virginianus*	Deep woods, swaps near large streams.	N
Common nighthawk	*Chordeiles minor*	Cites, open areas.	N
Chiney swift	*Chaetura pelagica*	Buildings, cities.	N
Ruby-throated hummingbird	*Archilochus colubris*	Shade trees in residential landscapes.	N
Belted kingfisher	*Ceryle alcyon*	Near water containing fish.	N
Red-bellied woodpecker	*Melanerpes carolinus*	Mixed woodland edges.	N
Downy woodpecker	*Picoides pubescens*	Shade trees in towns and suburbs.	N
Hairy woodpecker	*Picoides villosus*	Open coniferous, deciduous and mixed woodlots	N
Northern flicker[a]	*Colaptes auratus*	Suburbs, woodland edges.	N
Eastern wood peewee	*Contopus virens*	Roadsides, parks. Closely associated with oaks.	N
Eastern phoebe	*Sayornis phoebe*	Suburban areas.	N

Table 3-6
Bird Species That May Be Present Based on Cover Types (Cont'd.)

Common Name	Scientific Name	Habitat Requirements	N or M
Purple martin	*Progne subis*	Suburban areas near water.	N
Blue jay[a]	*Cyanocitta cristata*	Suburbs, cities, parks and gardens.	N
American crow[a]	*Corvus brachyrhynchos*	Edges of woodlots, coastal areas.	N
Horned lark	*Eremophila alpestris*	Large open areas	N
Black-capped chickadee	*Parus atricapilus*	Residential areas, woodlands.	N
Tufted titmouse[a]	*Parus bicolor*	Residential areas in shade trees.	N
White-breasted nuthatch	*Sitta carolinensis*	Shade trees in villages.	N
House wren	*Troglodytes aedon*	Near human dwellings.	N
American robin[a]	*Turdus migratorius*	Shade trees in residential areas.	N
Wood thrush	*Hylocichla mustlina*	Mixed woodlands.	N
Gray catbird	*Dumetella carolinensis*	Shrubbery around buildings.	N
Mockingbird[a]	*Mimus polyglottos*	Fruit-bearing shrubs in cities and towns.	N
Cedar waxing	*Bombycilla cedrorum*	Shade trees in residential areas.	N
Red-winged blackbird	*Agelaius phoeniceus*	Swamps and marshes.	N
Common grackle[a]	*Quiscalus quiscula*	Suburbs.	N
Northern oriole	*Icterus galbula*	Shade trees in residential areas.	N
Purple finch	*Carpodacus purpureus*	Residential areas.	N
House finch[a]	*Carpodacus mexicanus*	Suburban and urban yards.	N
American goldfinch	*Cardeulis tristis*	Suburban gardens, shade trees.	N
Starling[a]	*Sturnus vulgaris*	Cities, gardens, parks.	N
Blue-winged warbler	*Vermivora pinus*	Edges of woods, brushy overgrown fields.	N
Yellow warbler	*Dendroica petechia*	Farmlands and roadsides.	N
Chestnut-sided warbler	*Dendroica pensylvanica*	Second growth woodland edges	N
Pine warbler	*Dendroica pinus*	Pine woodlands.	N
Prairie warbler	*Dendroica discolor*	Open sandy or gravelly areas with scattered pines.	N
Black and white warbler	*Mniotilta varia*	Mixed woodlands.	N
Oven bird	*Seiurus aurocapillus*	Mature mixed woodlands.	N
American redstart	*Mniotilta varia*	Shade trees near dwellings.	N
Common yellowthroat	*Geothlypis trichas*	Fresh or salt water marshes.	N
Northern cardinal[a]	*Cardinalis cardinalis*	Suburban gardens.	N
Scarlet tanager	*Piranga olivacea*	Roadside shade trees.	N
Rose-breasted grosbeak	*Pheucticus ludovicianus*	Shade trees in suburban areas.	N
House sparrow[a]	*Passer domesticus*	Cities, parks.	N
Chipping sparrow	*Spizella paserina*	Suburban residential areas.	N
Field sparrow	*Spizella pusilla*	Briar thickets, old fields.	N

Table 3-6
Bird Species That May Be Present Based on Cover Types (Cont'd.)

Common Name	Scientific Name	Habitat Requirements	N or M
Song sparrow	*Melospiza melodia*	Suburbs, cities.	N
Sharp-tailed sparrow	*Ammospiza caudacutus*	Coastal marshes.	N
Seaside sparrow	*Ammodramus maritimus*	Salt marshes.	N
Brown-headed cowbird	*Molothrus ater*	Open coniferous and deciduous woodlands.	N
Eastern towhee	*Pipilo erythrophthalmus*	Woodland edges.	N
Brown thrasher	*Toxostoma rufum*	Woodland edges. Often in cities.	N
Veery	*Catharus fuscescens*	Low moist deciduous woods.	N
Blue-gray gnatcatcher	*Polioptila caerulea*	Open moist woodlands.	N
Marsh wren	*Cistothorus palustris*	Fresh and brackish marshes.	N
Carolina wren	*Thryothorus ludovicianus*	A variety of places from lowland stream bank tangles to upland brushy slopes.	N
Bank swallow	*Riparia riparia*	Riverbeds, roadcuts, gravel pits	N
Barn swallow	*Hirundo rustica*	Man-made structures for nesting.	N
Northern rough-winged swallow	*Stelgidopteryx serripennis*	Nearly any open area with nest sites.	N
Tree swallow	*Tachycineta bicolor*	Farmlands, river bottomlands.	N
Fish crow	*Corvus ossifragus*	Low coastal areas.	N
Red-eyed vireo	*Vireo olivaceus*	Open deciduous and second growth woodlands.	N
White-eyed vireo	*Vireo griseus*	Dense shrubby lowlands.	N
Eastern kingbird	*Tyrannus tyrannus*	Shrubby borders, forest edges.	N
Great-crested flycatcher	*Myiarchus crinitus*	Forest edges.	N
Willow flycatcher	*Empidonax traillii*	Open, newly clear cut areas.	N
Acadian flycatcher	*Empidonax virescens*	Deciduous woodlands.	N
Black-billed cuckoo	*Coccyzus erythropthalmis*	Shrubby hedgerows.	N
Yellow-billed cuckoo	*Coccyzus americnus*	Open woods, roadsides, weedy fields.	N
Northern bobwhite	*Colinus virginianus*	Open fields of grass.	N
Ring-necked pheasant	*Phasianus colchicus*	Meadows with abundant weedy growth.	N

Source: DeGraaf and Rudis, 1983; Peterson, 1980; NYSDEC, 2000.

[a] Species observed during field reconnaissance.

Table 3-7
Mammals That May Potentially Be Present Based on Cover Types

Common Name	Scientific Name	Habitat Requirements
Virginia opossum	*Didlphis virginiana*	Near human habitation.
Least shrew	*Cryptosis parva*	Salt marshes, woodland edges.
Northern shot-tailed shrew	*Blarina brevicauda*	Both timbered and fairly open habitats
Eastern moles	*Scalopus aquaticus*	Lawns, sandy soils.
Star-nosed moles	*Condylura cristata*	Prefers low wet ground.
Little brown myotis	*Myotis lucifugus*	Dark warm sites for maternity colonies.
Big brown bat	*Eptesicus fuscus*	Buildings, bridges, tunnels.
Eastern cottontail	*Sylvilagus floridanus*	Suburban areas with adequate food and cover.
Eastern chipmunk	*Tamias striatus*	Tree or shrub cover with elevated perches.
Woodchuck	*Marmota monax*	Edges of woodlands, open cultivated land, meadows, open brushy hillsides.
Gray squirrel[a]	*Sciurus carolinensis*	Suburban parks, shade trees especially oaks.
Deer mouse	*Peromyscus maniculatus*	Near outbuildings in shrubs.
White-footed mouse	*Peromyscus leucopus*	Edges of woodlands.
Meadow vole	*Microtus pennsylvanicus*	Freshwater and salt water marshes.
Norway rat	*Rattus morevegicus*	Buildings, dumps, cities.
House mouse	*Mus musculus*	Buildings.
Red fox	*Vulpes vulpes*	Found in a variety of habitats. A mixture of forest and open areas is preferred.
White-tailed deer[a]	*Odocoileus virginianus*	Forest edges, swamp borders, areas interspersed with fields and woodlands.
Raccoon	*Procyon lotor*	Found in wetlands near human habitation.
Striped skunk	*Mephitis mephitis*	Suburban areas.

Source: DeGraaf and Rudis, 1983
Burt, W.H. and R.P. Grossenheider, 1976
a Species observed during field reconnaissance

Table 3-8
Comparison of Sag Harbor Surface Soil Data to Toxicological Benchmark Values

Parameter	Toxicological Benchmark			Surface Soil *	
	Earth Worms	Terrestrial Plants	Meadow Vole	Frequency of Detection	Range of Detected Concentrations
Volatile Organic Compounds					
Benzene			211	5/35	0.002-11
Ethylbenzene			**2003**	8/35	0.001-18
Toluene		200	208	8/35	0.003-63
Xylene (total)			2.5	11/35	0.001-85
Semivolatile Organic Compounds					
2-Methylnaphthalene			**18**	22/35	0.051-600
Acenaphthene		20	**1395**	7/35	0.3-500
Acenaphthylene			**1395**	29/35	0.047-71
Anthracene			**7971**	31/35	0.04-270
Benz(a)anthracene			**8**	33/35	0.042-160
Benzo(a)pyrene			8	33/35	0.048-110
Benzo(b)fluoranthene			**996**	33/35	0.064-97
Benzo(g,h,i)perylene			**598**	31/35	0.073-110
Benzo(k)fluoranthene			**996**	30/35	0.082-50
Chrysene			**8**	33/35	0.048-140
Dibenz(a,h)anthracene			**8**	21/35	0.32-15
Dibenzofuran			**8**	9/35	0.25-24
Fluoranthene			**996**	34/35	0.046-350
Fluorene	30		**996**	16/35	0.2-250
Indeno(1,2,3-cd)pyrene			**996**	32/35	0.056-97
Naphthalene			**1473**	25/35	0.05-1300
Phenanthrene			**20**	33/35	0.044-900
Pyrene			**598**	35/35	0.073-450

Table 3-8
Comparison of Sag Harbor Surface Soil Data to Toxicological Benchmark Values

	Toxicological Benchmark			Surface Soil *	
Parameter	**Earth Worms**	**Terrestrial Plants**	**Meadow Vole**	**Frequency of Detection**	**Range of Detected Concentrations**
Inorganic Compounds					
Aluminum			15.433	3/3	2330-2700
Antimony		5	1.0	2/3	0.39-0.72
Arsenic	60	10	1.008	31/35	0.41-27.1
Barium		500	79.6	35/35	5.7-675
Beryllium		10	9.75	3/3	0.22-0.31
Cadmium	20	4	14.255	29/35	0.056-7.2
Chromium	0.4	1	40499	35/35	1.8-503
Cobalt		20	**88**	3/3	2-2.7
Copper	50	100	224.8	3/3	29.1-62.1
Cyanide, total			954.2	23/35	0.13-12.6
Lead	500	50	118.23	35/35	4-3390
Manganese		500	1301	3/3	1070-2320
Mercury	0.1	0.3	19.21	30/35	0.02-6.3
Nickel	200	30	591.15	3/3	5.8-10.8
Selenium	70	1	2.956	27/35	0.38-6.4
Silver		2	**1.68**	20/35	0.22-1.6
Vanadium		2	2.881	3/3	9.9-14.3
Zinc	200	50	2364.6	3/3	142-352

Table 3-8
Comparison of Sag Harbor Surface Soil Data to Toxicological Benchmark Values

	Toxicological Benchmark			Surface Soil *	
Parameter	Earth Worms	Terrestrial Plants	Meadow Vole	Frequency of Detection	Range of Detected Concentrations
Pesticides/PCBs					
4,4-DDD			11.8	3/10	0.0041-0.33
4,4-DDT			11.8	2/10	0.0038-0.35
Aroclor-1260			**31.0**	2/10	0.15-0.97
Dieldrin			0.296	3/10	0.02-0.83
Endosulfan II			2.22	2/10	0.024-0.72
Endosulfan sulfate			**2.21**	1/10	0.01-0.01
Endrin aldehyde			**0.9**	1/10	0.13-0.13
Endrin ketone			**0.9**	3/10	0.0082-0.52
Methoxychlor			59.1	2/10	0.029-0.41

Notes:

* Surface soil includes soils collected to a depth of 4 feet below ground surface.
Bolded values are derived benchmarks. See Tables 3-9 and 3-10.

Table 3-9
Parameters for Calculation of Toxicological Benchmarks

Organism	Body Weight (kg)	Food Intake (kg/day)	Food Factor *f*
Mouse	0.03	0.0055	0.18
Rat	0.35	0.028	0.08
Dog	12.7	0.301	0.024
Rabbit	3.8	0.135	0.034
Meadow vole	0.044	0.005	0.114

Source: ORNL; Oak Ridge National Laboratory, Sample et al. 1996.

Table 3-10
Derivation of Toxicological Benchmarks for Meadow Vole

Chemical	Test Organism	Endpoint	NOAEL$_t$ (mg/kg/day)	Reference for Test Species	NOAEL for Meadow Vole (mg/kg/day)	Toxicological Benchmark for Meadow Vole (mg/kg)
Ethylbenzene	Rat	NOAEL	136	IRIS	228.4	2003
2-Methylnaphthalene	Rat	LD50 (1630 mg/kg)	1.20	NTP	2.0	18
Acenaphthene	Mouse	NOAEL	175	IRIS	159.0	1395
Acenaphthylene[a]	Mouse	NOAEL	175	HEAST	159.0	1395
Anthracene	Mouse	NOAEL	1000	IRIS	908.7	7971
Benzo(a)anthracene[c]	Mouse	NOAEL	1	ORNL	0.9	7.97
Benzo(b)fluoranthene[b]	Mouse	NOAEL	125	IRIS	113.6	996
Benzo(g,h,i)perylene[d]	Mouse	NOAEL	75	IRIS	68.2	598
Benzo(k)fluoranthene[b]	Mouse	NOAEL	125	IRIS	113.6	996
Chrysene[c]	Mouse	NOAEL	1	ORNL	0.9	7.97
Dibenzo(a,h)anthracene[c]	Mouse	NOAEL	1	ORNL	0.9	7.97
Dibenzofuran[c]	Mouse	NOAEL	1	ORNL	0.9	7.97
Fluoranthene	Mouse	NOAEL	125	IRIS	113.6	996
Fluorene	Mouse	NOAEL	125	IRIS	113.6	996
Indeno(1,2,3-cd)pyrene[b]	Mouse	NOAEL	125	IRIS	113.6	996
Naphthalene	Rat	NOAEL	100	IRIS	167.9	1473
Phenanthrene	Mouse	LD50 (700 mg/kg)	2.6	NTP	2.3	20
Pyrene	Mouse	NOAEL	75	IRIS	68.2	598
Cobalt	Rat	LDLo (750 mg/kg)	6.00	NTP	10.1	88
Silver[e]	Rat	NOAEL	1	ORNL	1.7	14.7
Endosulfan sulfate[f]	Rat	NOAEL	0.15	ORNL	0.3	2.2
Endrin aldehyde[h]	Dog	NOAEL	0.025	IRIS	0.103	0.904
Endrin ketone[h]	Dog	NOAEL	0.025	IRIS	0.103	0.904
Aroclor 1260	Rat	LD50 (1315 mg/kg)	2.10	NTP	3.5	31.0

To convert mg diet/kg body weight, divide the diet component by the food factor times the uncertainty factor.

Sources:

IRIS: USEPA, 2000:
HEAST: USEPA, 1997.
NTP: National Toxicology Program's Chemical Health and Safety Data Website: http://ntp-server.niehs.nih.gov/Main_Pages/Chem-HS.ht
ORNL: Oak Ridge National Laboratory, Sample et al. 1996.

[a] Value for acenaphthene used
[b] Value for fluoranthene used
[c] Value for benzo(a)pyrene used
[d] Value for pyrene used
[e] Value for cadmium used
[f] Value for endosulfan used
[g] Value for diethylphthalate used
[h] Value for endrin used

Table 3-11
Comparison of Sag Harbor Salt Water Surface Water Data to Toxicological Benchmark Values

Parameter	Toxicological Benchmark			Sag Harbor			
				Surface Water		Pore Water	
	NYSDEC	OSWER	Region IV	Frequency of Detection	Range of Detected Concentration	Frequency of Detection	Range of Detected Concentration
Volatile Organic Compounds (mg/kg)							
Xylene (total)	19	1.8		1/12	1	0/8	---
Semivolatile Organic Compounds (mg/kg)							
Acenaphthene	60	23	9.7	0/12	---	1/8	1
Phenanthrene	1.5	6.3		0/12	---	1/8	2
Pyrene				0/12	---	4/8	1-2

Table 3-12
Comparison of Sag Harbor Sediment Data to Toxicological Benchmark Value

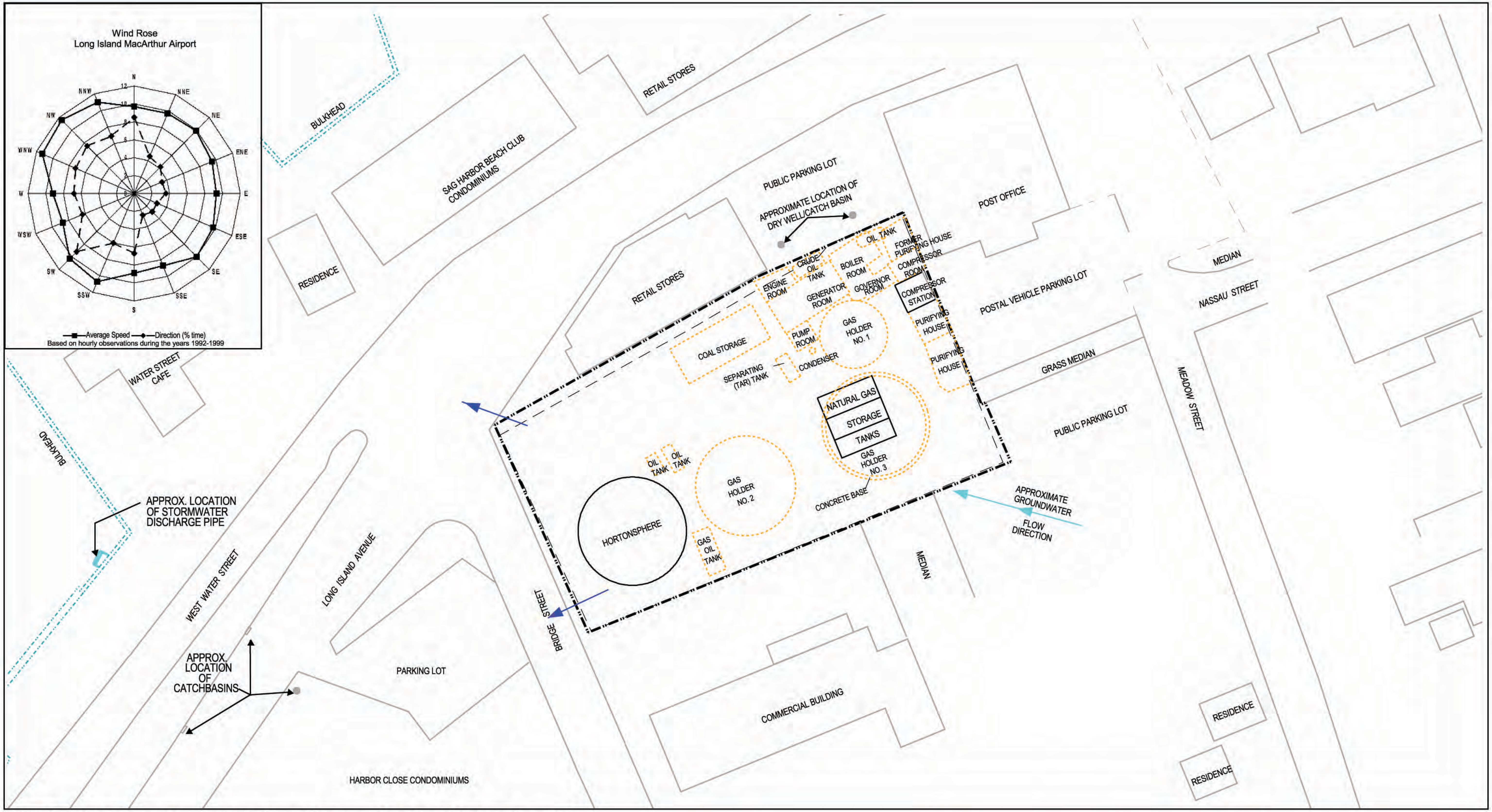
Parameter	Toxicological Benchmark				O-Co-Nee Pond	
	NYSDEC		OSWER	Region IV	Frequency of Detection	Range of Detected Concentration
	LEL	SEL				
VolatileOrganic Compounds (mg/kg)						
Xylene, total			0.16		2/18	0.001-0.027
Semivolatile Organic Compounds (mg/kg)						
2-Methylnaphthalene					0/18	---
Acenaphthene*	2.94		0.62	0.33	1/18	0.12-0.12
Acenaphthylene				0.33	14/18	0.047-1.2
Anthracene				0.33	11/18	0.049-0.82
Benzo(a)anthracene				0.33	15/18	0.15-4.3
Benzo(a)pyrene			0.43	0.33	15/18	0.12-4.3
Benzo(b)fluoranthene					15/18	0.13-4.9
Benzo(g,h,i)perylene					10/18	0.12-2.2
Benzo(k)fluoranthene					15/18	0.062-1.9
Chrysene				0.33	15/18	0.19-5.2
Dibenzo(a,h)anthracene				0.33	2/18	0.32-0.55
Dibenzofuran					1/18	0.049-0.049
Fluoranthene*	21.42		2.9	0.33	11/18	0.051-7.1
Fluorene				0.33	6/18	0.15-0.79
Indeno(1,2,3-cd)pyrene					12/18	0.068-1.9
Naphthalene			0.24		1/18	0.064-0.064
Phenanthrene	2.16		1.8		9/18	0.05-1.3
Pyrene					16/18	0.26-11

Notes:

* NYSDEC criteria dependent on organic carbon content. Average value of 2.1% was used.

NYSDEC = New York State Department of Environmental Conservation
LEL = Lowest Effect Level
SEL = Severe Effect Level
ER-L = Effects Range-Low
ER-M = Effects Range-Median
TEL = Threshold effects level
PEL = Probable effects level

Attachments



SOURCE: Sag Harbor Site Plan based on Sample Location Map prepared by Dvirka and Bartilucci, August 2000

50 0 50 100 Feet

Map Key

▨ Approximate Location of Former MGP Structure	➤ Surface Drainage
☐ Location of Existing Structure	➤ Approximate Groundwater Flow Direction
-·-·- Current Site Boundary	┈┈ Shore Line
— — Fence	

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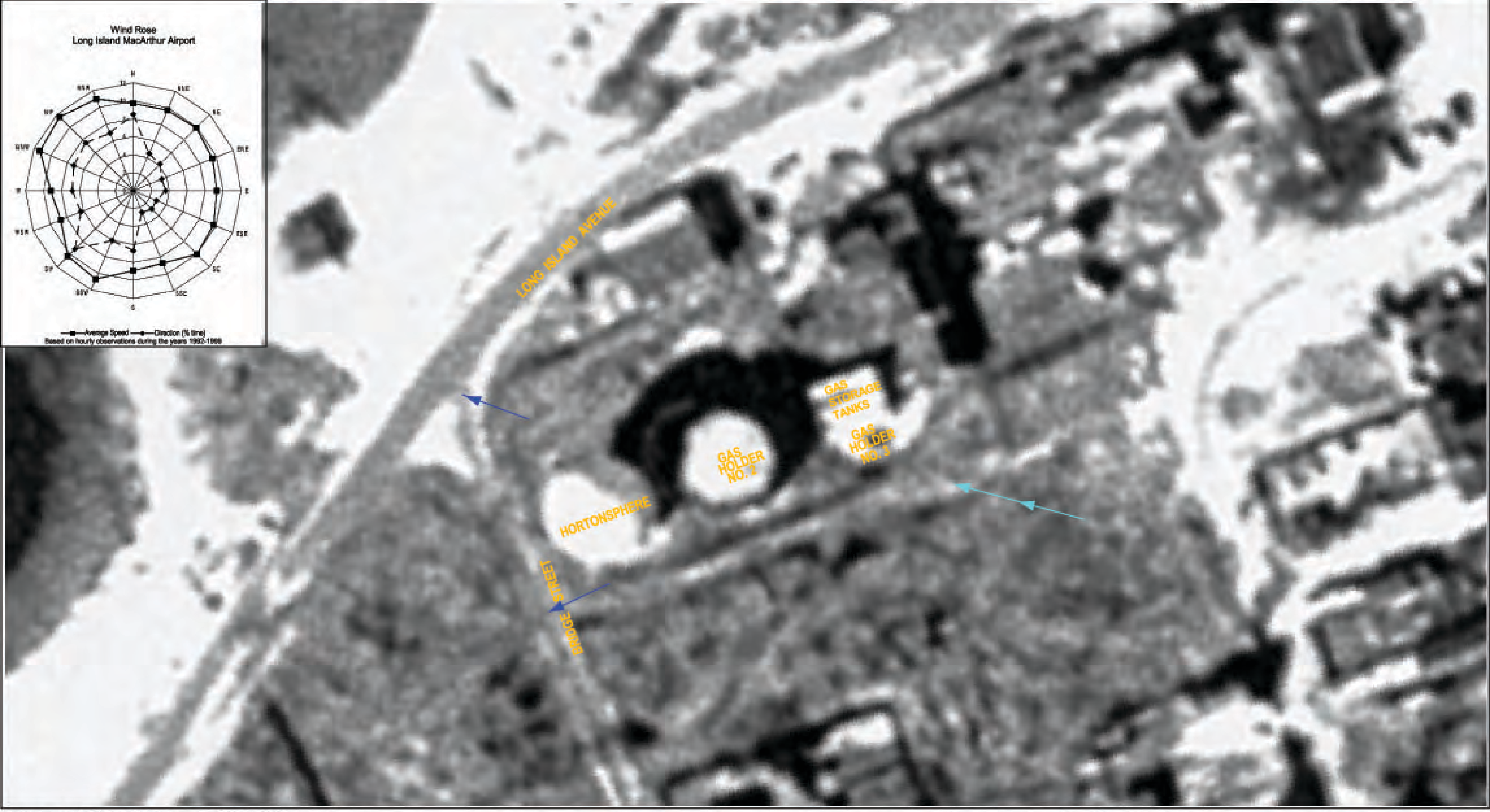
KEYSPAN

Attachment 1-1A
Conceptual Site Model -
Current Site Plan

Sag Harbor
Former Manufactured Gas Plant Site
Sag Harbor, New York



BASEMAP SOURCE: Aerial Photograph Taken in 1954

50 0 50 100 150 200 Feet

Map Key

- ► Surface Drainage*
- ► Approximate Groundwater Flow Direction*

*Based on data collected during the remedial investigation

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KEYSPAN

Attachment 1-1B
Conceptual Site Model -
Historic Aerial Photo

Sag Harbor
Former Manufactured Gas Plant Site
Sag Harbor, New York

BARCELONA NECK, BARCELONA POINT
Coastal Oak-Hickory Forest, Maritime Post Oak Forest
Coastal Oak-Heath Forest, Maritime Red Cedar
Bushy Rockrose, Seabeach Knotweed

LITTLE NORTHWEST CREEK, LITTLE NORTHWEST HARBOR
Rambur's Forktail, Saltmarsh Aster, Reticulate Nutrush,
Slender Blue Flag, Seaside Goldenrod, Piping Plover,
Sea Level Fen, Maritime Dunes, Maritime Beach,
Least Tern, Coastal Goldenrod, Long-Tubercled
Spikerush, Marsh Straw Sedge, Slender Spike Grass,
Velvety Lespedeza, Silverweed

LONG BEACH, SAG HARBOR
Least Tern, Piping Plover
Seabeach Knotweed

BRICK KILN ROAD KETTLES
Tiger Salamander

LONG, LITTLE LONG, ROUND, LITTLE ROUND, LILY AND WHALERS DRIVE PONDS
Small White Snakeroot, Rose Coreopsis, Knotted Spikerush, Round-Leaf Boneset,
Coastal Plain Pond Shore, Long-Beaked Bald-Rush, Short-Beaked Bald-Rush,
New England Blast, Whorled-Pennywort, Tiger Salamander, Creeping St. John's Wort
Globe-Fruited Ludwigia, Velvety Lespedeza, White Boneset, Long-Tubercled Spikerush

SOURCES:
Offsite Receptors, Historic Places - Environmental Data Resources, Inc.
Sag Harbor Village Historic District Boundary - derived from National
Register of Historic Places Registration Form, 1994
USGS Topographic Maps, Sag Harbor, NY and Greenport, NY, 1956
US Fish and Wildlife National Wetlands Inventory
Fresh Water Wetlands - NYSDEC, 1996
Rare Species and Ecological Communities - NYSDEC
FEMA Q3 Floodplain Data, 1996

Map Key

- ▨ Site
- ▦ National Wetlands Inventory
- ○ Fresh Water Wetlands
- ▦ 100 Year Floodplain
- ✱ Offsite Receptors
- ● Historic Places
- ☐ Historic Districts
- 🟩 Rare Species and Ecological Communities

500 0 500 1000 1500 2000 Feet

N

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KEYSPAN

Attachment 1-1C
Conceptual Site Model -
Environmental Attributes
and Sensitive Receptors

Sag Harbor
Former Manufactured Gas Plant Site
Sag Harbor, New York

SOURCES:
USGS Topographic Maps, Sag Harbor, NY and Greenport, NY, 1956
NY State 2000 Digitally Enhanced Orthoimagery
Fresh Water Wetlands - NYSDEC, 1998
National Wetlands Inventory (NWI) - US Fish and Wildlife
Field Observations

Map Compiled By:

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Map Key

- ☐ Site
- ▨ Commercial
- ▨ Residential
- ▨ Mixed Residential/ Commercial
- ■ Paved
- ▨ Water
- ▨ Fresh Water Wetland
- ▨ NWI Wetland

500 0 500 1000 Feet

KEYSPAN

Attachment 1-1D
Land Cover/Land Use Map

Sag Harbor
Former Manufactured Gas Plant Site
Sag Harbor, New York